Digital Scholarly Editions as Interfaces

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What Are You Trying to Say?
The Interface as an Integral Element of Argument

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Abstract

Graphical interfaces to digital scholarly editions are usually regarded as disconnected from the content of the edition, enough so that an argument has developed against the use of interfaces at all. We argue in this paper that the indifference and even hostility to interfaces is caused by a widespread incomprehension of their argumentative utility. In a pair of case studies of published digital editions, we conduct a detailed examination of the argument their interface makes, and compare these interface rhetorics with the stated intentions of the editors, exposing a number of contradictions between 'word' and 'deed' in the interface designs. We end by advocating for an explicit consideration of the semiotic significance of the elements of a user interface: that editors reflect on what aspect of the argument their interface expresses, and how that is adding, or perhaps subtracting, from the points they wish to make.

1 Introduction

> Some of the tricks of the trade involved in meeting these challenges include studying the design of infrastructure, understanding the paradoxes of infrastructure as both transparent and opaque […] (Susan Leigh Star, The Ethnography of Infrastructure, 377)

In a combative paper presented at the Digital Humanities Conference 2013 in Lincoln Nebraska, Peter Robinson posited: "Your interface is everyone else's enemy" (*Desiderata*). He asserted that the very thing which is meant to open up a digital text to users can, rather paradoxically and frustratingly, limit its uses. Infrastructure, as Susan Leigh Star notes, is both transparent and opaque – so long as it works as expected, it is effectively treated as invisible (transparent), but as soon as its affordances or functionality cease to match the needs of its users, those users are at a loss for how, or indeed whether, to continue using it (opaque). Interfaces are themselves a form of infrastructure, subject to the same paradoxical properties. The very purpose of an interface to a scholarly digital edition, whether it be a graphical, command-based, or programmatic interface, is to open up textual information to reader-users. Yet most of these interfaces are designed in a way that renders them neither really open

nor neutral. Robinson's primary complaint was that most interfaces of digital scholarly editions are ultimately nothing but façades behind which textual data is hidden. They proclaim 'behold… a representation of the text', but they offer users no further means for downloading data, for reading offline, for adding their annotations, or for interacting in any other meaningful way with the text.

We argue here that the reaction against graphical interfaces for scholarly digital editions, exemplified by but not limited to Robinson's polemics, is caused by a widespread incomprehension of the argumentative utility of interfaces. Up to now, most interface design has been carried out at the level of "unconscious incompetence" (Wikipedia Contributors, *Stages*) by textual scholars and the technicians they employ – it is being done, but without much explicit conscious understanding of the impact and effect of particular design decisions. Creators of digital scholarly editions regard interfaces primarily as a utilitarian means of representing the edition, and less often tend to consider the interface as a site of interaction between text and user. We have not developed an explicit understanding of how an interface argues, but such an understanding is necessary to reason about its form, function, and telos. Our purpose here is thus to explore the argumentative aspect of the interface as a first stage in the development of a more consciously-argued approach to graphical interfaces for digital scholarly editions. Our approach is one of critical reception: we will not explore here the mechanisms by which scholarly editions are produced, nor comment on the division of labour that typically goes into the creation of their interfaces. Rather, we will engage with those interfaces on their own terms, as published artefacts oriented toward a particular audience, and examine the messages we "read".

2 The interface as medium

The user interface of digital scholarly editions is often treated as a content-free and ideally interchangeable appendage to that which is actually considered the scholarly effort or work – the examination and preparation of the text and the scholarly justification for how this preparation was carried out. This is related to the conviction that the interface is, or at any rate should be, a self-contained, unambiguous, non-value-laden digital object that simply transmits a visualisation of digital textual data to a user-reader. At most, its effect is regarded as a visual permutation or aesthetic adornment of the underlying content, the textual data; its purpose is usually to present the text and edition in a way that caters to those who wish 'simply' to read the text, or a particular version thereof (although, as we will discover, scholarly editors often produce digital editions that seem to argue *against* reading).

On a theoretical level, Hans Walter Gabler (47–48) has argued that the 'autocratic strain traditionally ingrained in the editorial enterprise' is in part to blame for this

attitude towards interface work. On a more pragmatic level, Roberto Rosselli Del Turco (*editing, SDE*) has pointed out some of the more common flaws in digital scholarly edition interface design. The more computationally-minded in the textual scholarship community clamour, as Robinson did, for machine readable access (APIs) to these editions, in order to apply their stylometric, machine learning, or other such techniques (e.g. Piper, Underwood, Kestemont et al.). Librarians, meanwhile, call for standardization of these interfaces and the underlying data in order to promote interoperability (cf. e.g. Besser).

While the Digital Humanities community engages in its skirmishes about user interface, data access, and interoperability, farther afield under the broad interdisciplinary umbrella of human computer interaction (HCI), the creation and evaluation of user interfaces has grown into an academic expertise of its own, strongly informed by disciplines as varied as graphic design, computer engineering, cognitive theory, and the social sciences (Rogers 2). Vivid debates on the importance of theory formation (e.g. Kaptelinin and Nardi), user experience (cf. Whittaker), and field studies on usability (e.g. Andreasen et al.) drive the field forward. It is thus an opportune time for us in textual scholarship to advance our understanding of interfaces based on this growing body of knowledge.

Here it is useful to point to the work of Alexander Galloway, who understands an interface not as some static digital object but as the *effect* that results from a dynamic process of transformation or mediation (Galloway viii). As a process of mediation, an interface translates data into different states. Interface effects may be neutral, but more likely they are not, because the processes causing them are usually not impartial automata, but (in a digital context) pieces of software and code whose existence, function, and working were motivated and intentional. As such, interface effects are caused by processes that represent the delegated agency of the persons that designed them (cf. Zundert).

Very little explicit awareness of this dynamic understanding of interface, of the effects caused when interfacing takes place, has crossed over to the literature on digital scholarly editions. How does the look and feel, the visual structure of information, affordances of interaction, or even the aesthetics of a given digital scholarly edition shape the experience of using it? Does the interface promote or discourage a particular mode of reading? Does it suggest or encourage a use beyond straightforward reading? This lack of awareness sits oddly with the point that has been made numerous times, beginning with Cerquiglini, that a scholarly edition is an argument about a text. If it is not particularly controversial to acknowledge that the visual appearance of a text or a picture has a marked effect upon how it is received by an audience – a point that is underscored by the design studies referred to above – then appearance is part and parcel of editorial rhetoric. We argue in this paper that, as producers of these editions, textual scholars need a much greater understanding of how their interfaces
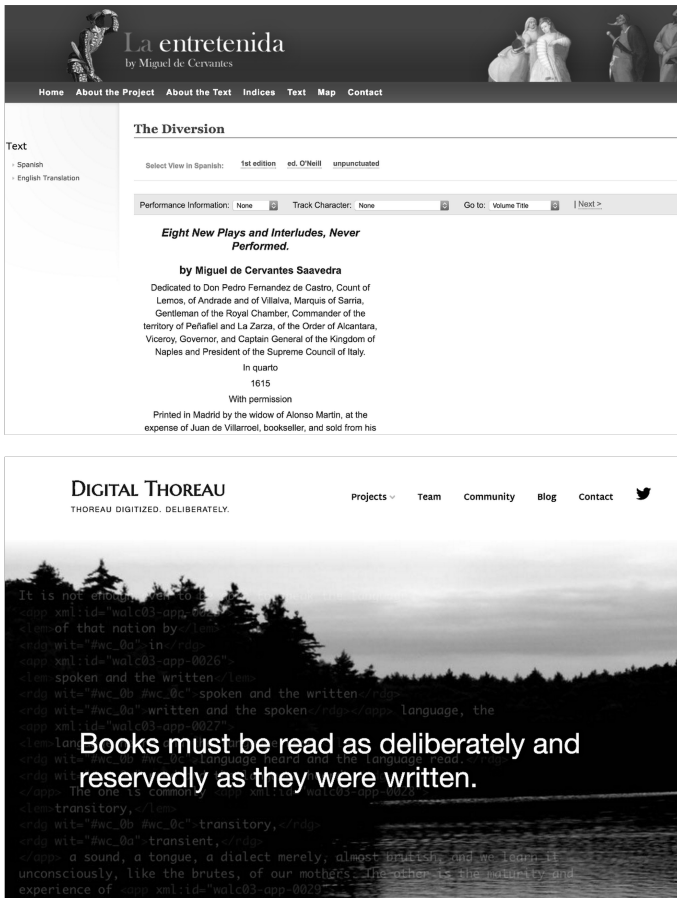
Figure 1: *La Entretenida* and *Digital Thoreau* digital scholarly editions.

are an integral component of the argument they will convey through the act of editing
their texts. Although we have some tacit knowledge of this as editors and readers,
the field can likely do better at seeking out, and perhaps even producing, empirical
information about how the interface – the medium – affects the argument. User
interfaces are, after all, a language through which arguments are made, even when
the makers of these interfaces are not conscious of the language they are using. As
such, they reflect the interpretations of the materials they are supposed to represent
as well as the culture, the politics, and the motives of their designers.

Consider, for instance, the rather striking difference between the initial impressions of two digital scholarly editions: *La entretenida by Miguel de Cervantes* and *Digital Thoreau: Thoreau Digitized. Deliberately*. The first interface conveys a fairly conventional 'scholarly' perspective, feel, or idea about the text (see fig. 1). The reader can very quickly find his or her way to the features normally associated with printed critical editions: versions consulted, editorial guidelines, a presentation of the text accessible per segment of the play, a hyperlinked index of names, places, occupations, and so on. Four versions of the text are available; the version presented by default is not even that of the editor, but rather a transcription of the first edition with spelling normalised to modern practice (fig. 1).

In contrast, the aesthetics of the interface to the *Digital Thoreau* work in tandem with its subtitle to provide an experience not merely of the text but also of what it signifies to the editor: deliberation and reserve. This notion or suggestion, however, is very superficial – the edition hides the text to some extent under the layers of aesthetic, but once it has been found, the text turns out to be just as 'densely scholarly' as *La Entretenida* in that it provides multiple instantiations of the text, scholarly footnotes, multiple indices, and so on.

We acknowledge that it is walking quite a fine line to interpret what we see in this way – to describe what we believe to be happening, what it seems to mean and to what it pertains. Should we accept the interface as a utilitarian medium needed only to serve the text in a digital environment, and should we pay minimal regard to presentation? Or should we understand interfaces and their mediality as intentional expressions of the editors' perspective on the digital edition as a concept, and as a set of deliberate choices about the representation of a text?

3 The interface as argument

Our first observation is that a digital edition's interface is an argument – not just an argument about the text, but also an argument about the 'attitude' of the editor, a window into his or her take on methodology and the digital edition itself. It is also a revelation of the technical skills available to the editor. The interface tells us something not only about the methodology but also about the import of the edition. The *Digital Thoreau* offers this sort of non-textual stylistic communication in abundance – it argues not just through text but also through the creation of a certain mood with colours, layout, graphics. In contrast, the Cervantes edition makes little attempt to communicate a mood or an emotion; it is clear that these editors would argue that the interface is mostly beside the point, a more or less neutral technical means to an end.

As can be inferred from the attitudes cited at the beginning of this article, the development of an interface for a digital scholarly edition is generally treated as a

piece of design independent from the interpretative thrust of the actual content. It is thus considered to lie within the domains of engineering, interaction design, and aesthetics, and, perforce, well outside the domain of textual scholarship. Interfaces are considered essential to communicate content to the user, but they are also usually considered neutral and non-interfering – it is usually taken as a desideratum that they be explicitly divorced from the argument. This *othering* of the interface can easily be seen in the advice that is usually given to creators of digital editions: that for the sake of sustainability of their research data they should take care to separate content and functionality (e.g. Jannidis, Cayless).

Galey puts this othering in a historical perspective of textual scholarship, pointing to the argument made by DeRose and others: essentially, that a text is the same whether it is printed in Garamond or Times Roman. Others, such as McGann, Hayles, and Kirschenbaum, concerned with the material aspects of text and digitality, contend that meaning and form are 'distinguishable but fundamentally indivisible' (Galey 110–112).

DeRose's argument may well have been informed by pragmatism: there are, of course, very good practical reasons to ensure a separation between form and content. These are primarily bound up in the fact that, up to the present, it is much more technologically feasible to archive static data in the form of plain HTML, XML/XSLT, or even relational or RDF-style database contents, than it is to archive the dynamic functionality of a software or web interface to those contents. Consequently, whatever scholarly content is not cleanly separable from the dynamic or interactive display logic of an edition made today is likely to remain unarchived and, thus, to be lost sooner or later.

This useful and pragmatic practice has, over time, developed overtones of a textual ideology that claims that content and meaning are unproblematically separable from form and function (Galey 110–113). The typical consequential advice to take 'XML-ification' to the core of the textual scholarship practice, and to put interface work in a peripheral realm of design and engineering, has a theoretical flaw at its core, which is the central tenet of this article. Just as there is no clean separation between data and interpretation, there is no clean separation between the scholarly content of an argument and its rhetorical form (Galey 94). We contend, moreover, that visual display and interactive functionality are an integral part of rhetorical form. The interface is thus an integral part of the argument that an edition makes about a text.

Cerquiglini's idea that an edition is a theory – and thus an argument – about a text is well-known within textual scholarship by now. Shillingsburg elaborates this idea specifically for the digital sphere: he differentiates between the archive, which collects primary materials and provides access to them while attempting to keep the mediating influence of interpretation to a minimum, and the edition, which will generally include an archive but the primary purpose of which is to provide a scholarly critical argument about the meaning of an archive or how it should be read.

Even so, these insights never had a great deal of overt influence on how editions are presented in their printed forms – a reader still expects to find a canonical reading text, one or more apparatuses, and notes provided by the editor.

In the case of digital scholarly editions, the situation can be very different. We start from the observation that there is no single canonical form for a digital edition, although this has become a desideratum for some (Rosselli del Turco, *Battle*; Czmiel) and although the appearance of guidelines (Rosselli del Turco, *editing*) and review journals such as RIDE (Steinkrüger) for digital editions and particularly for their interfaces will inevitably have the effect of normalizing certain practices. Nevertheless, a graphical interface (or even an API) is an object that is constructed to present data, which is itself constructed with reference to facts, which themselves are constructed objects.

It is worth pressing this point. In her article on graphical display perhaps most well-known for this very observation, Drucker points out that despite the implication in its very name that "data" (L. *dō, dare, datum*, "give") is given naturally by the environment of its production, data creation is in fact a process of active capture of select information by the human or the human-designed algorithm that does the work (Gitelman and Jackson 3). This process of forming and becoming that data undergoes in a scientific context points to a careful selection and argumentation that underlies the presentation of data as meaningful, and as pertaining to a certain argument, as Latour and Woolgar claim (e.g. 255–256). This is not to deny the factuality of data in all or even most circumstances, but it becomes clear in this viewpoint that the data one collects, and the facts one presents, whether underlying the data or derived from it, are not only part of a larger argument but themselves also argumentative constructs.

We can put this in a more concrete perspective by considering the famous example of "bridges with politics". These are the Long Island bridges designed by Robert Moses in the 1960s, that were supposedly built too low to accommodate public transport buses passing beneath them (Joerges 417–418). The original debate centred around whether the alleged inability of buses to pass underneath the bridges was intended to discourage the circulation onto the island of those racial minorities who were disproportionately dependent on public transportation systems to navigate around the city. That debate remains unresolved; the discussants could agree only on the unknowability of Moses' specific intentions and motivations, and could certainly not agree on the precise degree to which his civil works furthered the alleged goal of keeping Long Island a *de facto* white-only zone. The anecdote and the debate serve primarily as a reminder that objects can be agents of politics, but also as an example of how facts can be marshalled in different ways to bring about interpretations of these objects (Woolgar and Cooper 443–444; also cf. Latour *Missing Masses*). For our purposes, it is worth noting that the objects in question – the bridges – also serve

as a physical interface of sorts: one of the disputed claims in the debate is that the freeways over which the bridges were built were the sole practical means of access to Long Island.

Computer code functions similarly as an argument, and as such it is not immune from politics. McPherson has opened the way for an argument about software not dissimilar to that of the Long Island bridges: to what extent, she asks, does the all-white context of the development of platforms such as Unix imply the lack in code of representation of or support for aspects of cultures that lie outside the white-majority mainstream? Although her article was intended less as a substantial accusation toward the Unix programming community than as a provocative talking piece, it has served to pull the curtain from an oft-perceived impartiality or neutrality of code and software. It would be naive at best to regard code as neutral on the grounds that it has at its very base a mathematical nature. In addition to that mathematical nature, it also has a rhetorical one. Pretty much since its inception, it has been argued that code has a literacy (e.g. Kay) that allows a programmer to wield a computer language as intentionally and as meaningfully as any other semiotic system. This eradicates any perceived boundaries between the writing of code and conventional authorship. Moreover, the ability of code to exert control may be far greater than that of conventional text, due to its executable nature that, in contrast to inanimate objects, allows it to adapt and react to specific circumstances (Zundert 365–366). Code, more than bridges and literature are, is a form of delegated agency, and there is little reason to assert that programmers suffer from less intent and bias than any other human being.

We can thus see that code is a construction that, at the very least, furthers, or engages with, a particular set of interpretative perceptions. Data is a construct, built in the very process of its generation. Even facts themselves are constructed, marshalled and interpreted to support or undermine argumentative propositions. How then can a user interface to a digital edition *not* be a constructed thing, with interpretations and intentions built in from the beginning? Even if a particular piece of code, software, or interface is not meant deliberately to exercise control or to effect certain policies, the production of code and interface remains a thing that is situated, that is: it is built in a context and by people endowed with a certain history, convictions, and cultural identity.

Cultural and historical situatedness thus motivate the development and structure of the interfaces we put on (digital) texts, whether overtly or covertly. This makes these interfaces non-neutral artefacts of the scholarly or technical work rather than neutral intermediaries; that non-neutrality is arguably amplified rather than mitigated by aesthetics. When building interfaces, we generally fail to account for these aspects of interface, and as a result we often ignore the argumentative aspect of the user interface that we provide.

4 The interface as language

And yet. Perhaps the greatest innovation of the digital space is that it gives us a tangible means to express our argument and theory about a text in ways that are not only not limited to the textual, but also not limited to the static. We constantly sing the praises of the possibilities granted to scholarship by these new forms of expression in digital space, and so it is important to set out what these comprise – linear, hierarchical, graph, or perhaps even time-lapse models of the text of the edition, which text can be represented as running text, as text alternatives, as variant graphs, or as tables; the inclusion of imagery or sound that may or may not pertain specifically to a particular portion of text, or alternatively to the argument that the editor wishes to make about the text; the ability to present these texts, images, and sounds either in a static way or dynamically, so that they vary in prominence or even in content, according to what the editor wishes to emphasize or what choices of emphasis the editor has allowed the user to make.

All of these choices, all of the decisions not only concerning the textual content but also the entire experience of its context, are determined by, and determine, what argument, theory, hypothesis, or association the editor has chosen to present. Just as there is not a single data format that will be able to satisfy all use requirements (Vitali), it is difficult to imagine that there can be one universal and universally satisfying interface for a scholarly edition, even when a shared underlying model or encoding standard is used.

At this point, we have reached something of an impasse. It is now clear that any interface is inevitably developed, and its arguments will be couched, in a particular semiotic environment that is extensively shaped by the cultural contexts of the author of a text, its editor, and its audience. The elements of user interface – visuals, colour, dynamic interaction – belong to this semiotic environment and, as such, constitute in themselves a kind of language. As yet, however, we only dimly understand how this language of interface works, what its argumentative properties and aspects are, for it has barely begun its development.

This is not specific to textual scholarship or to digital scholarly editions. Graphical user interface and interaction design work at a complex intersection of visual elements, written language, interaction, aesthetics, and the performativity of software. Although much research has been done on the usability and interaction aspects of this complicated mesh of communicative technologies (cf. Soegaard and Friis), very little theory has emerged about how it constitutes argument. Galey and Ruecker have attempted to make inroads into this problem, and Vanhoutte's ideas on minimal and maximal editions may also pertain to a theory of how interfaces argue in textual scholarship. Vanhoutte makes clear in any case that the argument is not limited to

the written language: simplicity or complexity of interface, for example, argue a level of accessibility for a given edition.

What is safe to assume or conjecture, though, is that different arguments and different critical frameworks should be expected to lead to different interfaces. As soon as we, the editors, consider our intentions for an interface to our editions, the user requirements and certainly the aesthetics begin to differ, and even conflict with each other. This conflict is, moreover, perfectly justifiable as the representation of the various possible arguments about our texts. While a particular group of scholars may agree, for example, on a particular mark-up model or a computational object model as a good common representation of their texts, the interface preferences of each will be an expression of what they individually intend to do – what argument they intend to make – with that model.

For instance, the presence – and even more, the prominence – of an interactive collation tool is linked to the argument that the collation is a changeable thing that should be left to the scholar-user to modify and interpret. Should the text be presented in the form of a graph? Such an interface relates to the argument that the text constitutes a sort of network that should be of interest to the reader-user. Yet another form may give pre-eminence to APIs and incorporate Jupyter Notebook and D3 based visualizations through which these APIs may be explored and used to tweak the text at will, which stresses a meta-argument: that the editorial argument rests solidly in the constitution of the data and its means of access. According to these interface choices, either the user is expected to analyse the text rather than simply reading it, or, at the very least, the editor is disclaiming any right to impose a web-based graphical interference in how the user chooses to read the text.

The possible interfaces for a scholarly edition can thus vary, sometimes radically, despite the inherent validity and fitness for purpose of each of them as expressions of the same underlying model. The situatedness of the scholarship that produced the edition is behind that variation: scholarly argument, aesthetics, human-computer interaction, and usability all contribute to complicate matters more than they help to establish some uniform ideal access to the text.

5 How do interfaces argue? Two tentative case studies

By now it is clear that interfaces argue in a culturally-induced form of symbolic language. Yet we hardly understand what constitute the verbs, nouns, and syntax of this language that is textual, visual, and interactive all at once. One possibility to explore how this language works in the case of digital textual scholarship is to observe and analyse it using methods similar to those of HCI, interaction design, and usability studies. We do so with respect to two case studies of digital scholarly

editions. These case studies are not by any measure a fair critique of some of the interfaces that have been built for individual digital scholarly editions. We fully acknowledge that the vast majority of scholarly editorial projects must get by on shoestring budgets, or sometimes on no budget whatsoever. It is therefore often the case that editors have specific wishes for the graphical interface of their editions that cannot be accommodated by designers, engineers, and usability experts within their severely strained financial and temporal budgets. Moreover, when it comes to digital scholarly editing, digital scholars are more often than not pioneers in a quickly changing technological landscape. Many editions based on certain digital technologies may be considered the epitome of what is possible when published, only to be regarded as 'old fashioned' when it comes to visualization almost overnight. For these reasons alone, it would not be fair to regard our discussion of these use cases as a sincere critique.

The issue at hand here is not, however, interface critique, but rather an examination of how interface constitutes or contributes to argument. We aim, therefore, to approach our task not as experts on (digital) scholarly editions, but rather as ethnographers of the interaction between human beings and digital technology. We acknowledge the considerations above but bracket them for the moment, taking the interfaces at face value and examining them before we consider what the textual scholars themselves state in their 'About' pages and introductions, and so without prejudicing our experience of what is apparent in the interface with any expectations set textually by the editor. We defer judgements and comparisons as much as possible; we observe the actual interfaces, and we try to estimate what their intended purposes, affordances, and assumptions are. Only then do we confront these observations with the declarations of the editors themselves as to the function and purpose of the digital editions (interfaces) they have built. The similarities, differences, perhaps even disconnects between findings and stated intentions will likely tell us much about how the rhetoric of the interface matches, supports, changes, or skews the argument that the editors claim to be making about the text and the edition.

5.1 Jane Austen's Fiction Manuscripts

Our first case study looks at the edition of *Jane Austen's fiction manuscripts* (review by Levy 2017; hereafter JA). We begin by considering the layout of information on the page, with reference to typical reader behaviour. When users scan a webpage for information that is interesting to them, their eyes move over the page in a kind of F shape: from left to right across the top, then from left to right across the middle of the page, and after that they scan the left side of the page from top to bottom (Nielsen). It is not clear whether this behaviour comes intuitively to users or whether this is induced behaviour due to many webpages being built according to the same

pattern, but for present purposes the reason behind the behaviour is not particularly important. We simply accept that the most salient information of a website ought to flow to the top and left of the screen. In the case of JA (see fig. 2), the first items we find are the page banner and a menu bar. To start with the latter: to the left we find 'Home', 'About', and 'The edition'. Intriguingly, 'The edition' does not lead the user to the edition, but rather to a page describing the edition at an editorial meta-level. In fact, all of the first three entry level items ('Home', 'About', and 'The edition') guide the reader to information *about* the edition and not to the edition itself. Apparently 'aboutness' is an important aspect for the editors. Taken as part of a scholarly argument then, this interface argues that for any scholarly edition it is essential to argue about the edition, more so than it is to get to the edition.

Nielsen's eye-tracking study also showed that visual elements of an interface receive a lot more attention than textual elements. JA is an interesting case in this respect as it features two prominent visual 'markers' on its front page, neither of which falls neatly into the category either of 'image' or 'text' – these are the representative images of Austen's manuscripts. When the page is viewed on a screen with dimensions of 1440x900 pixels (a fairly average screen size at the present time, and on the large side for 2010), the image of the manuscript featured on the front page takes about 10% of the screen real estate, which is, we would argue, a shade under 'sizeable'. The prominence afforded to the image seems to suggest that "manuscript" is somehow an important asset to this digital scholarly edition. Far less important, one gathers, are the institutional aspects of the project. The logos of the institutions involved are not visible on the average landscape-orientation monitor without scrolling down.[1]

At the same time that the edition foregrounds the importance of manuscripts and relegates the institutional identity of the editors to the background, we perceive ambivalent clues as to the practice of scholarly editing itself. The banner at the top of the page is revealed to be, upon closer inspection, not a careful representation of one precious manuscript, but rather a juxtaposition of fragments derived from images of several of Austen's manuscripts. It includes an image of the name, or possibly the signature, of Austen herself as well as a pair of excerpts, each easily traced from the search function provided and identifiable respectively as page 1 from the Sanditon manuscript and page 44 from a notebook called "Volume the First". What does this combination mean? The particular selection, which may initially appear arbitrary, gains some meaning for readers with a passing familiarity of Austen's career, as it represents the span from the earliest of her juvenilia to the novel she was working on when she died.

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[1] They are, in fact, immediately visible on portrait oriented screens, but we will observe other properties that indicate that this edition was not primarily intended to be used in portrait orientation.
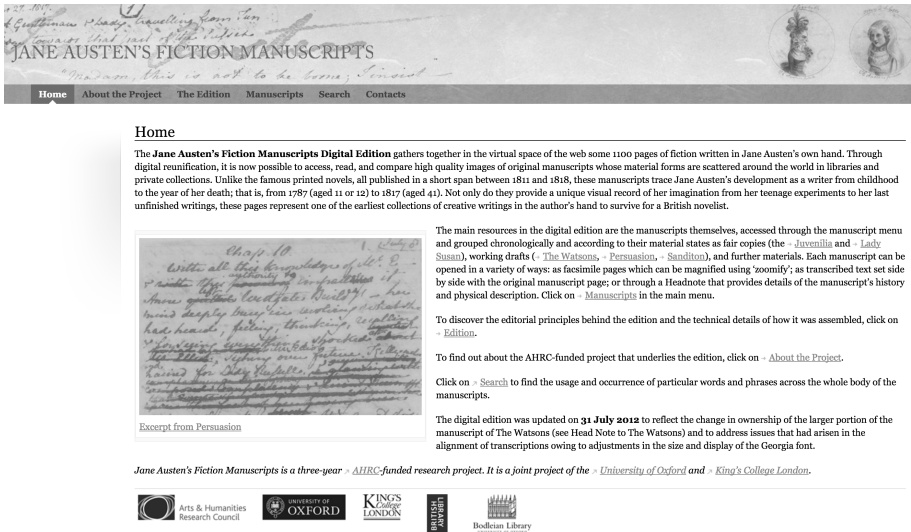
Figure 2: Front page of the *Jane Austen Fiction Manuscripts* Edition.

An observation to be made at this point is that there is no such thing as 'just an illustration': even an image that was most likely not consciously intended to allude to the argument of the edition impels and influences interpretation after all. But what does this banner argue? It does not seem to subscribe in any case to the virtue that McGann (217) sees in the 'impossible truth' of 'philological fact', as it clearly reworks its facts into an alternative truth by superimposing them. Should this be taken to argue that textual and documentary editing make do with less assiduousness and rigour concerning their facts than do other scholarly disciplines? Perhaps it argues that facts are indeed constructed and reveal, at most, perspectives (Gitelman and Jackson, Betti). Or perhaps it argues that digital scholarly editions should be understood foremost as a site of interaction and engagement: the reader-user is invited to ponder the significance of the few lines of manuscript in that banner. Indeed, using the search function to pinpoint their location and provenance brings the user deep into the edition within mere minutes.

As the user is lured into interacting with the JA interface, further interesting observations can be made. The two primary points of entry on the front page are the 'Manuscripts' and 'Search' items on the horizontal menu bar. These are (as is the site in general) not particular strongly contrasted against their background –

indeed, visually impaired or colour-blind users might miss them altogether. This is surely an unintended side effect, but again: the argument is in the eye of the beholder. Clicking through to either of these entry points brings the reader-user rather *in media res* within the digital edition. Neither page offers much contextualization of the materials, resources, and affordances that are offered to the reader-user. This may, again, be understood as an implicit argument that the reader should be invited and enticed to explore the edition on his or her own, which would be congruent with poststructuralist ideas with broad appeal within digital scholarship, that it should be an exercise for the reader to create his or her own text and edition (Burke; Robinson, *Five desiderata*).

Once inside the edition itself, the JA interface is unobtrusive, perhaps even minimalistic. It suggests a desire that the interface recede into the background, leaving as much space as possible for attention to the manuscripts themselves. For instance, a search for "madam this is not to be borne" produces a very plain results list; clicking on the appropriate entry brings the user to the particular page of the manuscript that contains the text, with the transcription alongside (fig. 3). Transcription and facsimile are also presented in a plain, almost sparse style, which leaves most of the screen estate and user attention for the manuscript, the text. This could be interpreted as an argument for reading the text in solitary concentration. In the absence of convenient support for comparison (see below), it could also be seen as a 'Cerquiglinish' argument for full attention to the individual text witness.

That said, the interface also signals some neglect of the text itself. Each page includes a link to a "Head Note", which takes the user-reader to a presentation of information on the context, provenance, materiality, and so on of the manuscript to which the page belongs. This head note, however, provides no direct link back to the referring page of the manuscript; the only way forward for the user is to start over with the document's first page. In this sense, the editor seems to have rather brutally abandoned consideration of the user's experience of the text. This sensation of isolation of the text is amplified by the fact that the contextualizing head note has a structured table of contents to the left of the screen, providing quick access to all other sections of the website *except* for the meat (as it were) of the edition: that is, the transcriptions and facsimiles. Instead, it provides many points of entry to all the edition's sections, site pages, and information *about* the text(s), manuscripts, and the edition.

There is another quirk of the interface that interferes with the argument that the text is the main point of attention. When a user-reader centres the text vertically on his or her screen and clicks through to the next or previous page, the vertical position is lost and the screen moves to the top of the web page again. It is as though a person is reading a print book on a desk in a library, with a librarian pushing the book toward the bottom of the desk each time a page is turned. This effect is only avoided with

Figure 3: *Jane Austen Fiction Manuscripts,* transcription/facsimile example.

vertical screen resolutions of more than 1050 pixels, which means that some 70%[2] of users experience this disorientating jump as they try to page through the text. Taken as argument, the effect of this quirk is to diminish the resolve of the interface to treat the text as central or essential. The interface thus argues both for and against the centrality of the text.

Although the text is placed, for the most part, at the centre of the argument of this interface, comparison of texts is not a function that is deemed important for this digital scholarly edition. There is no option provided to display different transcriptions or facsimiles alongside each other. It is, of course, possible to open a separate window (either by oneself or using the convenience option built in for facsimiles) but this increases the risk of further issues with screen estate, which in turn makes comparisons rather bothersome for users.

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[2] This number can be quibbled about. It is based on the January 2017 statistic from W3Schools (www.w3schools.com/browsers/browsers_display.asp) which shows that at least 23% of internet users have a vertical resolution of 1050 or over. There is a residual category, representing 7.6%, of undefined higher resolutions for which it is unclear whether they are over or under that number. For the sake of argument, we can summarize this as '30% have a vertical resolution over 1050 pixels'. There is, however, an argument to be made that people working professionally with digital text and documents might have larger screens on average. Even so, it is hard to imagine the number would be more than 50%. Moreover, we do not necessarily argue only for professional reader-users. It is arguably even more important to consider the experience of non-professional readers, more of whom will likely suffer this effect.

That the only option to compare texts is to open additional windows also serves as an indication that JA is not geared towards tablet use (including the portrait orientation capabilities of these) since most tablets are not well tuned to displaying multiple browser windows in parallel. It is also worth noting that JA's purpose-built magnification viewer for the facsimile images does not work on mobile devices. All this is despite the fact that tablet devices are an increasingly popular means to engage with textual resources for the general public as well as professional scholars. Interpreted as an intentional argument, the lack of tablet computer support could mean that the intended audience for the edition is not a general audience interested in Jane Austen's work, but specialists working at a laptop or desktop computer equipped with large screens.[3]

In summary, JA seems to conceptualize the digital scholarly edition on two planes. The first is a plane or a site that is concerned with *aboutness*. This is where the edition as a whole, the editorial work, the context of the manuscripts is explained and where scholarly knowledge, pontification, and information about the text and scholarly editing are apparent. The second plane, one that gives space solely to the texts in transcription and facsimile form, gives the impression of being much more sequestered, isolated, and focused, yet with odd quirks that interfere with the impression that it is intended to emanate concentration and topicality. We could thus assert that JA argues for a digital scholarly edition that has separate and distinct concepts of text and paratext; its provision of the transcriptions and facsimile in a secluded space argues that they are primarily intended for reading, as comparison is rather cumbersome and there is no allusion to other forms of analysis beyond search.

This inferred argument clearly operates at the level of the scholarly digital edition as a whole, but does it also pertain to the text in question? Should the atmosphere of secluded and intimate reading that emanates from the interface be taken as a statement by the editors that these manuscripts and notebooks were (to be) used in precisely this way? The interface is not explicit about whether this seclusion and focus pertains only to the edition itself or whether it also applies to the originating texts. To be fair, the argument of how the original manuscripts were to be used is a complex and often unanswerable one for the vast majority of texts.

Having made our observations, we can now turn to the statements that the editors explicitly make about their interface and consider what these say to us. Only one such statement can be found:

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3   Another, perhaps more likely, explanation is that this edition was designed prior to 2010 and that tablet use was therefore not yet a real consideration. We have here omitted a detailed treatment of the interaction between interfaces and the rapid pace of technological change that underlies some of them. This example nevertheless serves to make very clear that, even if a message was intended differently at the time of its publication, the context of its reception can be very influential.

> The core information about the text is applied by means of a system of XML 'tags' that encode parts of the text, and any 'visualisation' of the text that is required for publishing purposes is then produced in a separate process. This is particularly useful in humanities scholarship, because it allows academics to concentrate on the structure and content of the source materials, and issues around scholarly interpretation of the text, leaving issues of presentation to the later publication processes (JA > The Edition > Technical Introduction).

This seems to indicate that the textual scholars hold that presentation, interface, and interaction are not essential for digital scholarly editions at all, at least not from the perspective of scholarly editorial activity. Indeed, the rationale for the edition offered by the editors pertains exclusively to a functional level. Their primary concerns are the access to the manuscripts and their current material state. On the former point, they stress several times that through "digital reunification, it is now possible to access, read, and compare high quality images of original manuscripts whose material forms are scattered around the world in libraries and private collections" (JA > The Edition > Introduction). On the latter, they note that many "of the Austen manuscripts are frail" so that "open and sustained access has long been impossible for conservation and location reasons" (JA > About the Project). The edition thus provides "for the first time full descriptions of, transcriptions of, analysis of, and commentary on the manuscripts in the archive, including details of erasures, handwriting, paper quality, watermarks, ink, binding structures, and any ancillary materials held with the holographs as aspects of their physical integrity or provenance" (JA > The Edition > Introduction).

The text and paratext provide a few more clues as to how the editors and designers thought the interface would support their argument. The technical introduction (JA > The Edition > Technical Introduction) concerns itself primarily with which digital technologies and code libraries were used for the implementation of the edition. It also lists two specific JQuery user interface components that were used ('draggable' and 'accordion').[4] We can see these components in action on the transcription and facsimile for the second page of the ninth quire in the manuscript of an unfinished novel, posthumously titled 'The Watsons' by James Edward Austen-Leigh (JA > Manuscripts > The Watsons). Jane Austen pinned a patch at this point in order to record a substantial revision to the text; in the interface, the patch has been represented as a collapsible 'accordion' section in the transcription and as a draggable facsimile that the reader-user can move across the screen (fig. 4).

From this we can infer that the editors and designers of JA at the very least regarded interface as a means to draw attention to the materiality of the manuscripts. Another viable technical solution would have been to represent the inserted page as 'just'

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[4] jqueryui.com/draggable, jqueryui.com/accordion.

Figure 4: *Jane Austen Fiction Manuscripts*, example of patch.

another digital page to leaf through, with a note to record the pin-prick evidence of its intended placement; instead the editors took the considerable added effort to represent the patch in a way that appealed more to their observation of the material state of the manuscript, and that was more in accordance with their intention to enable the user to "compare the forms and texts of these dispersed manuscripts – their different physical construction, shifts in handwriting and presentation – to examine passages of erasure and revision" (JA > The Edition > Introduction).

Given these explicit indications, the editors and designers seem to appreciate the interface primarily as a means to represent and argue the significance of the materiality of a manuscript. Yet, our examination of the interface, unprimed by any knowledge of these editorial ideals, suggested instead that the interface was intended to argue for a strong distinction between original text and scholarly epitext. The act of reading the manuscript (and transcription) seemed to be foregrounded by means of the interface. Yet it appears that the editors did not intend the electronic edition to be a reading device at all: "At a later stage, the *print* edition will synthesize within a reading space the analytic functionality of the *electronic* and will be enhanced by richer annotation, discursive essays on the genesis and composition of the manuscript works, and consideration of their relationship to Austen's printed fiction" (JA > About the Project > Output and Dissemination; emphasis ours).

We thus find that the reader-user and the scholarly editor may have very different interpretations of how and what the interface of a scholarly edition argues. This is obviously not a terribly surprising finding. There can always be a gulf of difference between that which an author intends to express and the meaning with which a reader endows the author's text (cf. e.g. Compagnon 29–65). Congruently, the interpretation by a reader-user of the argumentative contribution of a user interface may be very different from what its designer intended. This should not throw us off balance, but textual scholars must be aware of these "interface effects" (Galloway vii). To regard any interface as a neutral and objective pathway to engagement with a text is to turn a blind eye to a major site of argumentation and interpretation.

Meaning is conveyed not by functionality alone, but also by look and feel. We have noted already that JA's minimalist design seems to want to be in the way of the reader-user as little as possible, whether or not this was the intention of the designers. One wonders if this was the most adequate choice or the choice closest to the argument the editors intended to make (for indeed they had an argument to make): that in "contrast [to the print editions of her work] the manuscripts available to us, all of them unpublished in her lifetime, literally present a different face. These are Jane Austen's teenage writings" (JA > The Edition > Introduction). The interface as it now stands gives a somewhat bland impression, one of old papers and settled dust. The youthful contrast could have been better elicited by a brighter and richer colour scheme, for instance, and the inclusion of Georgian-era design elements of fashion for the young.

5.2 Welscher Gast digital

Our second, shorter case study looks at the *Welscher Gast digital* edition. The medieval German text known as *Der Welsche Gast* is a work on courtly morals created by one Thomasin von Zerklaere in 1215–1216. As part of the Thomasin-Projekt, a platform has been developed to publish a digital scholarly edition of the text (hereafter WG, reviewed by Klug). WG could not possibly paint a more different picture of an edition than that of JA. Where we found the Austen interface to be somewhat reticent, endeavoring to be out of the way of the user, the interface of WG remains boldly and assertively in the foreground.

The site's front page (cf. fig. 5) has a large (33% screen estate at 1440x900 pixel resolution) revolving pictorial banner, which rotates between four pictures of medieval manuscripts *in littera textualis* with very high-quality illuminations, and one picture of two people studying the manuscripts behind three computer screens. Much more than in the case of JA, this gives the impression of a grandiose opening, reminiscent almost of movie trailer rhetorics, compounded by the use of declarations such as "Mehr als eine Textausgabe" ("More than a text edition") in the rotating banner. The

interface thus expresses a much greater level of self-awareness than that of JA, and suggests more of a concern with selling itself to its audience.

Applying the F-pattern to a visual scan of the page as before, it appears that WG is also more concerned with taking the text to the reader-user. The four left- and topmost menu items bring us immediately to the texts, or to descriptions that pertain more to the authorial aspects and narrative content of the text than to the documentary and bibliographical contextualization that JA provided. Scrolling down to the bottom of the page we find additional direct points of entry to the text itself.

Although the interface – next to plainly recommending the text – certainly facilitates getting to the text, being confronted with the text is a somewhat different matter. One portion of the 'meat' of this digital scholarly edition is found under the menu item 'Handschriften' (manuscripts) → 'Mittelalterlich' (medieval), where a list of manuscripts is presented; clicking on one takes the reader-user to a presentation of information about that manuscript and options for further exploration. Here the interface remains prominent, but the sleek and streamlined presentation gives way to a clutter of metadata. This should probably be attributed in part to the fact that WG relies heavily on the standardized infrastructure of the Heidelberg University library (Klug 2016), and we must allow that getting to the actual text will not be difficult for a textual scholar accustomed to similar interfaces. However, a general reader-user will have a harder time identifying the points of entry to the actual transcriptions and facsimile. If, for example, we opt to examine the first manuscript on the list (Cod. Pal. germ. 389), we can see within the list of contents an entry titled "3r–27r Teil 1" (which on most screens will only be reachable by scrolling down). Clicking on this, we are presented a facsimile viewer for all the pages in the manuscript, beginning with folio 3r.[5] Several elements are added to the interface, including a navigation bar with a cornucopia of buttons and an option to display a visualization of the quire structure. Underneath this is an interface element that pertains to the specific facsimile on display and consists of four tabs: facsimile, transcription, image description, scroll, and overview.

Although WG argues that it intends to take the reader-user as close as possible to the text as smoothly as possible, the interface becomes more cluttered the closer we come to the actual text, making it difficult for a user who actually wishes to be a reader to know where to begin. The more straightforward (indeed more prescriptive, as a user who simply wishes to have a text to read would expect) entry points are concealed at the bottom of the page. The growth of interface clutter – dropdowns, buttons, indices, and charts – that appears upon closer approach to the text might

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[5]   It should be noted that this virtual path through the interface is not stable. The 'Welscher Gast' interface keeps track of each user's *state*, which means that if the same user-reader returns to the text viewer, s/he would find the viewer opens to the same tab that was last visited. For reasons of brevity we have left this particular behavior out of consideration.

Figure 5: Front page of the *Welscher Gast Digital* Edition.

intuitively make argumentative sense: the reader-user perhaps ought to want to know more about and do more with the text the closer he or she gets to it. Paradoxically, though, all these aids intervene and perhaps even interfere with the task of reading, as it is relatively easy to configure a view of the text that, although informative in many ways, is no longer reader-friendly in any sense (cf. fig. 6). There is a tab that is somewhat enigmatically labelled 'scroll' which, upon selection, reveals itself to be the entry point to perhaps the most conventional reading mode of all, in which all facsimile images are laid out continuously from left to right without the meddlesome intervention of most of the other interface elements.

Over and above the manuscript facsimiles and transcriptions themselves, WG offers additional interactions with the text and its elements (some of which remain works in progress) that will certainly be of interest to those who wish to explore the text, as opposed to simply reading it. In contrast to JA, the edition provides a synoptic view (classed under "Texte" rather than "Handschriften", which in itself gives some idea of the editors' working definition of "text") that allows comparison of several manuscript transcriptions in parallel. Another notable asset is the provision of a rich annotation layer for the illuminations found in the manuscripts, which have all been meticulously delineated to identify the different characters, motifs, and scenes. A
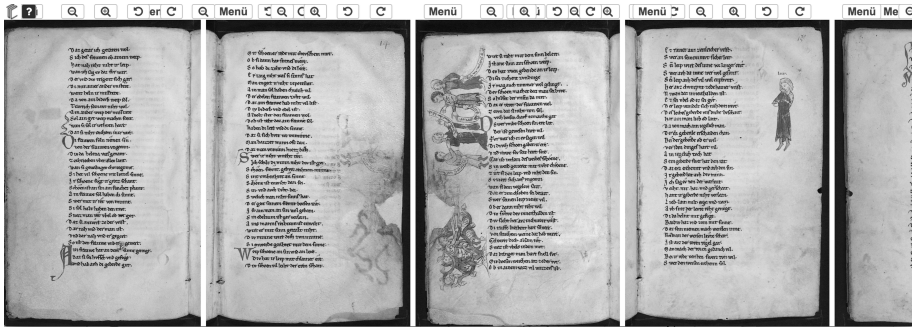
Figure 6: *Welscher Gast Digital*, horizontal full screen facsimile, continuous scroll.

force-directed network graph based on these annotations is available to illustrate and represent the relationships between the various 'actors' in the illuminations.

All of this adds to the impressive variety of points of engagement that WG wishes to hand to its reader-user. At the same time, it confirms a certain paradoxical nature of interface: as much as all this functionality adds ways to engage with the text, it also hides that text under an ever opaquer clutter of interface elements (cf. fig. 7). A large and impressive, almost daunting jumble of buttons, functions, drop downs, meta-data panels and charts clamour for the user's attention. A straightforward argumentative interpretation of this situation might lead us to conclude that the editors believe that an edition should be, insofar as possible, in the hands of the user. Their means may defeat their ends, however: HCI literature suggests that, rather than the relation between the level of controls provided and the amount of control the user feels being proportional, a surfeit of controls may conversely instill a feeling of being unable to work effectively through the clutter (Krug 11–19).

WG certainly seems to argue that textual scholarship is a very complicated matter, requiring very complex skills. The manner in which this argument is made seems, however, to work in opposition to the (presumed) ideal of providing a text to the reader-user in a fashion as easily accessible as possible. WG indeed provides so many ways of tweaking and tuning the available data that it is actually quite easy to lose sight of the text of *Der Welsche Gast*.

Perhaps for trained textual scholars WG poses no real insuperable challenges. Its complexity might indeed appeal to these users, as it might mirror a certain complexity of the source texts that the scholar-user has conceptualised. Even so, the cluttered interface makes a definite argument: it stresses the complexity, the intricate structure, the manifold engagements that the editors wish to associate with the text. The stack of controls is there to bring out this complexity and to make it the focal point of
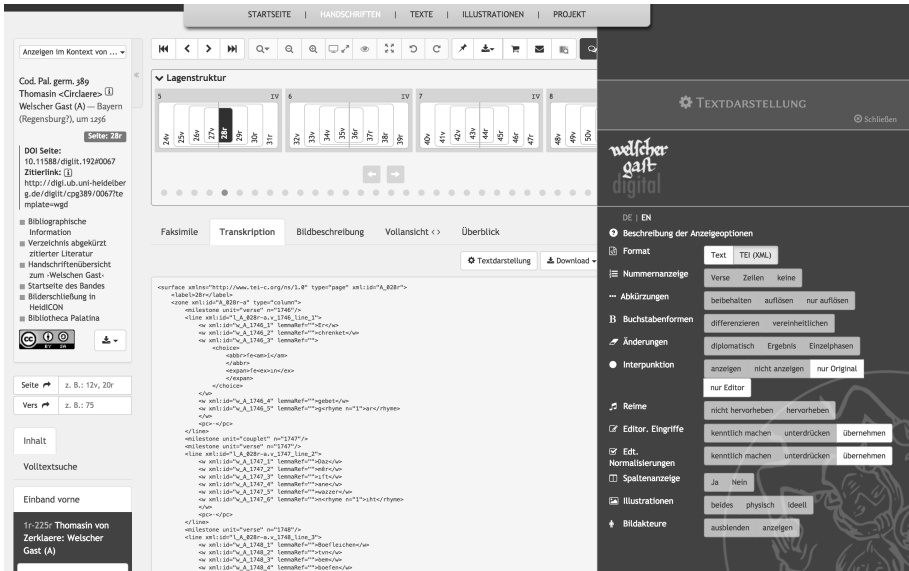
Figure 7: *Welscher Gast Digital*, maximizing functional elements.

the user's engagement with the text, which in turn affects the perception of the text whether the user actually engages this way with it or not. It is easier to imagine a deep structural interaction with the text through this interface than an aesthetic experience of connected reading. The various layers of control elements endow the interaction experience with a technical, mechanised feel – almost as though the Thomasin-Projekt has brought about a steampunk restyling of *Der Welsche Gast*. This mechanization is amplified by the fact that it is entirely possible to engage with the text without ever having a view of it that one might regard as a conventional view or a reading view, by switching to the provided TEI-XML perspective. This again sets WG very clearly apart from JA, within which it is impossible to lose the conventional perspectives on the text provided by the transcription or the facsimile. That WG allows conventional perspectives to be jettisoned completely from the user's experience speaks strongly to the idea that textual scholarship may treat data structures and markup encoding as textual witnesses in themselves, that code is itself text (c.f. Zundert and Andrews).

The paratext provided via WG unfortunately does not provide many clues about how the editors intended their interface to present the text or the edition. What is clear is that they have set a very high technical bar, as they wanted to produce no less than an exemplary edition: "das Projekt [soll] Modellcharakter haben" ("the project

[should] have the nature of a model") (WG > Projekt > Ziele). For this, they have made it a point to apply state of the art technological toolkits and the *de facto* best practices that have emerged within digital textual scholarship to date. In so doing, they have realised a "Visualisierung der Transkriptionen [die] eine benutzergesteuerte und weitgehend anpassbare Textdarstellung [bietet]" ("visualisation of the transcription [that offers] a user-driven and extensively adjustable presentation of the text") (WG > Projekt > Ziele) – the very plethora of instruments that we have observed, to adjust the text representation to the preference of the reader-user. As the editors point out:

> Zudem ist jede Handschriftenseite dank permanenter Zitierlinks dauer- haft referenzierbar. Die Transkriptionsarbeiten sind noch lange nicht abgeschlossenen [sic!], einzelne Handschriftenteile sind jedoch bereits ex- emplarisch verfügbar. [...] Damit wird der Benutzer der Ausgabe das Bild- material in seiner Gesamtheit überblicken und im Detail studieren können. Eine Annotation mit kontrolliertem Vokabular (GND) soll sowohl den Text als auch die Bilder für Such- und Vernetzungszwecke erschließen. (WG > Projekt > Ziele)[6]

and:

> Für die Visualisierung der Transkriptionen in Verbindung mit Digitalisaten wird eine Reihe von Darstellungsoptionen entwickelt. Aktuell sind folgende Einstellungen möglich: Anzeige von Vers- oder Zeilennummerierung, un- terschiedliche Behandlung von Abkürzungen, Differenzierung oder Verein- heitlichung von Buchstabenformen, flexible Darstellung von Schreiberänder- ungen, wahlweise Einblendung der Originalinterpunktion, optionale Anzeige editorischer Eingriffe. Außerdem sind eine unterschiedliche Darstellung von Textspalten sowie die Hervorhebung von Reimen (wo bereits markiert) und die Absetzung von Verspaaren möglich. Bei diversen Elementen erscheint beim Anklicken ein Infofenster mit weiteren Angaben, etwa die Zeilenhöhe bei Initialen. Beim Vorhandensein von Illustrationen wird dies durch Balken am Textrand angezeigt, die mit Links zur Detailanzeige der Illustrationen versehen sind. Alternativ zur graphisch formatierten Darstellung hat der Benutzer die Möglichkeit, sich den TEI-Code (jeweils pro Seite) anzeigen zu lassen. Geplant ist die Bereitstellung von TEI- und PDF-Dateien zum

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6 Moreover, every manuscript page is permanently citeable. The transcription work will not be finished for a long time yet, but individual manuscript portions are nevertheless already available as examples. [...] The user of the edition will thus have an overview of the collection of images and be able to study them in detail. An annotation with controlled vocabulary (GND) shall render both the text and the images accessible for search and linking purposes.

Download, auch für ganze Handschriften und für synoptische Ansichten. (WG > Projekt > Methodik)[7]

The provision of so many configurable viewing options could be read as an argument that the text itself should comply with the reader-user's aesthetic wishes in preference to any editorially emphasised materiality of the text. More likely, it was intended to say that a user-reader should be enabled in every conceivable way to observe every textual and material detail of the text. The question, then, is whether the interface itself argues for or against this desire – whether it achieves such thorough affordance or ultimately frustrates the reader's ambitions. WG undeniably makes strong assumptions concerning the level of technical familiarity and philological training that its maximally-empowered users must have, and further assumptions on top of this concerning the extent to which these 'power users' (to borrow a phrase from computing culture) will welcome the demand for such deep engagement rather than being vexed by it. In the absence of an actual usability study of the interface, we must leave this question open, but initial impressions suggest that it requires a technically skilled textual scholar to use this interface effectively, and that even these skilled users will not easily have the option to step back from the deep engagement and simply read the text.

6 Conclusion: Towards a language of interface?

Having now, no doubt, antagonised the editors of a variety of digital scholarly editions by passing such strong and unexpected judgements on the form of their editions while paying only the slightest regard to philological substance, we will once more stress that the nature of these case studies was not to criticise or undermine the tremendous work and impressive substantive results that these editions represent. They were chosen for our 'game' precisely because they represent the state of the art in the field of digital scholarly editing, in terms of both philological thoroughness and technical excellence.

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[7] A range of display options are being developed for the visualisation of the transcriptions in connection with the digitisations. The following settings are currently available: Display of verse or line numbering, different handling of abbreviations, differentiation or normalisation of letter forms, flexible presentation of scribal changes, optional inclusion of the original punctuation, optional display of editorial interventions. Furthermore, a variable presentation of text columns is possible, as well as the accentuation of rhymes (where already marked) and the setting apart of couplets. Upon clicking on various elements an information window appears with more information, for instance, the line height of initials. If illustrations are present they are displayed in bars on the text margin, which function as links to the detailed display of the illustrations. As an alternative to the graphically formatted presentation the user has the option of displaying the TEI code (per page). The provision of TEI and PDF data for download is planned, also for entire manuscripts and for synoptic views.

What we hope to uncover with these "thick descriptions" (Wikipedia Contributors) is a glimpse of how interfaces argue, how they broadcast messages that the developer and even the user may not consciously hear, how the interface is never a neutral mediator entirely separable from that which is typically regarded as content. What precisely an interface argues, however, remains implicit because digital textual scholarship has not by any measure converged on a formal or even informal understanding of the argumentative meaning of particular interface design elements and properties. It is thus difficult to interpret clearly the argument that any particular interface tries to make. Does the maximization of functionality provided by *Welscher Gast digital* argue that the representation of a text is in the eye of the beholder, that it should indeed answer to his or her every aesthetic whim? Or does it argue that the primary purpose of a digital scholarly edition is to be a kind of textual laboratory, rather than simply a text – and does it argue that only for this specific edition, or for digital scholarly editions in general? Does WG's sleek front page, which comes across as promotional, argue that the point of a scholarly digital edition is to engage any and every reader-user with the text and its edition? Or does the impressive and indeed daunting complexity of the functionality provided argue the opposite, that digital scholarly editions of texts are reserved for experts? How do we reconcile the staid and retiring interface of the Jane Austen fiction manuscripts edition with the materiality and "teenageness" (JA > The Edition > Introduction) of the documents that was a paramount aspect to which the editors wished to draw attention?

What we can infer from our limited case studies is that the argument an edition contributes through its interface is not entirely within the control of the editor or engineer, just as there is no one-to-one translation between the author's intent and the reader-user's perception of a text (Wimsatt) or, indeed, between a speaker and a listener. Certain arguments may seem straightforward, such as the provision of a plethora of tools to argue that the text deserves deep engagement, or a certain repertoire of visual elements (colours and images) to evoke a certain mood or context. These arguments are certainly shaped by the editor independently of the user – a bright colour scheme can convey an impression of unorthodoxy; a plethora of functional controls conveys the importance of engagement to the editor. Yet, whether or not the arguments reach their targets depends heavily on the interface literacy of the reader-user – on his or her ability to understand the signals and, in the case of functionality-as-argument, to wield the tools provided in a meaningful orchestration of engagement with the text.

This brings us to another observation: interfaces argue at different levels simultaneously, and it is not facile to judge exactly what the interface argues at each level. No interface can escape making an argument at a level of general usability: a fragment of text that is a hyperlink but is in no way distinguishable from surrounding text, for example, argues only a profound misunderstanding of any user's needs and is,

on those grounds, a fairly universally recognised sin against usability. Yet, as we hope we have shown, interfaces also argue on the conceptual level about the digital scholarly edition, in both the specific and the general case. One interface argues restraint, rendering a single straightforward view of the text prominent and allowing other functions to recede into the background; another argues for a maximum of affordances, rendering a variety of versions that must be considered in symphony in order to approach 'the text'. The arguments can, of course, be paradoxical: more functionality in an interface suggests a text is important enough to be scrutinized in as many ways as possible, but in so doing it draws more emphasis to the tools than to the text. Another interface places a simpler experience of the text in the foreground, but only after the user has had to navigate layers of indirection before arriving there. A third level of interface-as-argument pertains to what the edition conveys about its specific text – for example, the aspect of carefree juvenilia in Jane Austen's manuscripts, which might have been underscored through the aesthetics of the text and edition display, had the editors wished to reinforce that particular message.

There is very little evidence in the paratexts of any of these editions that the editors have considered how their interfaces argue on any of these levels, or indeed how they argue at all; this is not tremendously surprising given the scarcity of specialised training or skill in user interface design within digital philology, and the lack of a shared literacy of graphical interfaces at large. In the absence of any such consciously transmitted semiotics, interfaces and their design are treated as sufficiently transparent, or perhaps sufficiently beside the point, not to warrant explanation or rationale. We hope to have made it plain that interfaces are neither transparent nor beside the point. The obvious next step would be to advocate that editors apply the rules of scientific accountability not only to their data, but also to their interfaces. Part of the process of establishing a semiotics of interface argument must be found in the explanations that editors give for their interface design choices in their own scholarly editions – that is, editors should make explicit the ways in which they intend their interfaces to argue and ensure that these arguments are congruent with their textual ones. This is not a call for loudly-proclaimed and unquestioned adherence to the usability guidelines that HCI and interaction design studies have derived over the last three or so decades, nor would we suggest that all editors endeavour to become professionally skilled interaction and interface designers. Rather, this is a plea for anyone responsible for the production of a digital edition to debate the decisions on interface that go beyond considerations of usability (e.g. Why is the banner a certain size? What informs the selection of pictorial content? Why is the page background blue? What determines the order of navigation items?) and thus explore and help to develop not simply the functionality but also a shared understanding of argumentative expressivity of interface in the realm of textual scholarship.

We realise the difficulty of our argument – to ask editors to justify their user interfaces so explicitly, given our limited understanding of how interfaces argue in the context of textual scholarship, amounts to asking the chick to explain the hen. User interfaces are a means of communication of a scholarly argument, and the decisions that go into their design are informed by the message or messages that the editor wishes to convey about the text. User interface design is a language that must be learned well in order to be used effectively. The creator of a digital edition must understand that language, but unfortunately the world of user interface design has, as yet, no grammar books or lexicons for this mysterious, mostly non-verbal language insofar as it departs from considerations of usability.

The alternative, however, is worse – if we agree that editors need not concern themselves with the skills necessary to make a well-argued and well-arguing user interface, we are saying that the scholarly argument of their edition can be reduced to the ticking of boxes. Or perhaps worse: to advocate for the development of a standard user interface for digital editions is to claim that all textual scholarship is, fundamentally, the same. And so we advocate instead, not for a set of guidelines or requirements for digital scholarly editions or their interfaces, but rather that editors explicitly consider the semiotic significance of any interface element they provide – to reflect on what aspect of the argument it expresses, and how that is adding to, or perhaps subtracting from, the argument they intend to make.

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