

ELECTRONIC EDITIONS WHICH WE HAVE MADE AND WHICH WE WANT TO MAKE

Peter Robinson *

Before we even ask, what is an ‘electronic edition’ we have to ask: what is an edition? So let us start with just that question. Here are six things which I say an edition must do. It must:

- Present a text
- Present the different historical forms of the text
- Present the differences between the historical forms of the text
- Explain the relationship between the different historical forms
- Explain how the editor edited
- Let the reader test the editor’s methods and conclusions

Now, of these six aims: there is only one which we can fairly say a print edition can do as well as, or better even, than an electronic edition. That is the first. Of course, print editions do present the text far better than do electronic editions. But that is all they do. If there is anyone in this room who thinks that is ALL that a scholarly edition should do, I say: leave the room now. In fact, leave the conference – you are in the wrong place.

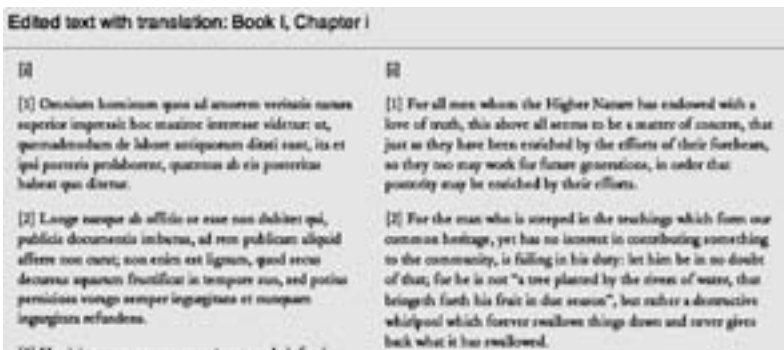


Figure 1 Shaw’s text and translation of the *Monarchia*, Bk I, i, 1.

* P.M.Robinson@bham.ac.uk
University of Birmingham.

However, the digital edition can and may do all these things, well and completely. Let us take as an instance Prue Shaw's edition of Dante's *Monarchia* on CD-ROM, to be published in May this year, and go through each of these in turn. First, here is a text: actually, Shaw's own editorial reconstruction of the archetype, presented with an english translation alongside.

Indeed, this is exactly the same text and translation (with one or two very small changes) which Cambridge UP prints in the History of Political Thought series, and as will be printed in the edizione nazionale series.

Now, point two: to present the different historical forms of the text. We could interpret this as: we want to see every page of every manuscript holding the text of the *Monarchia*. We might add: because the script of these manuscripts is unfamiliar and difficult, we should like to see a full transcript of the text of every page of every manuscripts of the *Monarchia*. We might add further: we should like to see the transcript laid out in such a style that one can easily move back and forth between manuscript and transcript. This edition does all that.



Figure 2 Manuscript images and transcripts

It is all very well to read the manuscripts, and pleasant indeed to search them. But really, this is only the first step to understanding what we have of Dante's text. Now, point three: to present the differences between the historical forms of the text. In print editions, you might do this in an apparatus, giving a summary view of the most significant variants. In a digital edition, you can indeed see every variant on every word. So, here we are, for the first paragraph of the *Monarchia*.

Apparatus for Book I, chapter i, paragraph 1		
VMap	first line in after Line I-i-IR	Sh A E G H M R T B C D F K L N P Ph Q S U V Z
VMap	Omnium	Sh A B C D E F G H K L M N P Ph Q R S T U V Z
VMap	hominum om.	Sh A B C D E F G H K L M N P Ph Q R S T U V Z
VMap	quos ad amorem veritatis	Sh A B C E F G H K L N P Q R T U V Z
	in quos amorem veritatis	D
	in quos Amorem virtutis	M
	quos ad morem veritatis	Ph
	quos amorem veritatis	S

Figure 3 Collation of the *Monarchia*, Bk I, i, 1.

We see that all the manuscripts have the reading *Omnium* for the first word; Z omits the second word *hominum* and here, for the phrase *quos ad amorem veritatis* we see that there are five different variant readings available. By this point, those of us at all familiar with medieval latin manuscripts will be thinking – wait on a moment. Does this mean that all manuscripts actually spell the

word ‘Omnium’ just so? Or are there further differences, of spelling and presentation, which this collation is eliding? Indeed there are: if we press this button here ‘show original spelling forms’ – all kinds of spelling differences leap out.

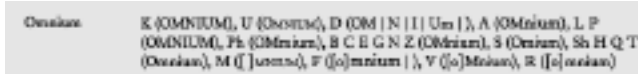


Figure 4 The original spellings of ‘Omnium’

We see that K has omnium in large capitals; U has a large capital for the first letter, and small capitals for the remaining letters; D splits the word over several lines, and so on.

Conceivably again, one could print all this information. There are 456 collation screens like this in the electronic edition of the *Monarchia*, each representing around three printed pages: so, another 1350 pages to print it all. But we should also print all the pages for the ‘show original spelling’ view. This is rather more bulky, say about four pages per screen: so some 1800 pages in all. But even this only represents a fraction of what the digital edition gives you. Notice that when I selected word collation here, I had Shaw’s text of the *Monarchia* selected. So, all variants are shown as variants against her edition. Now, if I select Z as the base, you will see that the variants are shown as variants against the text of Z – or, as variants against the text not in Z, if it happens. So indeed, we have not just one collation here: we have as many different collations as there are manuscripts. And actually, the digital edition gives many more collations than this. A button, ‘select witnesses’, allows us to tailor the collation so we can see just the manuscripts we want. So we select manuscripts A Sh and Z and we get a collation with just those manuscript. The number of possible collations this gives, for every possible combination of 22 versions, is factorial 22: in the region of trillions (1,124,000,727,777,610,000,000 to be precise).

The problem of digital editions, you might be thinking now, is this: who needs all this information? All very impressive, but what can I do with all this? The temptation of digital editions, the ‘resistance of the material’ if you like, is actually lack of resistance: it is so easy to pile data on data that one might do just that and no more. Confronted with all this the reader might well think: please dear editor, I just want to read one text and one text only. Give

me a print edition. My own view is this: if all the edition does is present all the information it is not an edition at all. It is an archive, an inert pile of dead data awaiting human intelligence to breathe life into it.

This brings us to the fourth characteristic of an edition: it must not just present the differences, it must seek to explain them. Look at this variant from further on in I i 1, Figure 5.

Vmap	ut	ACDEFGHKMNPhRTUVZ (u), Sh (u)
	Et	S (E)
	BLQ	

Figure 5 Variants at 'ut'

Four manuscripts, B L Q P, omit 'ut' here. There is also a reading 'Et' available at this point, in manuscript S; Shaw's text reads 'ut'. So, what? Notice the annotation 'Vmap' beside every variant. If you click on this, you see the diagram shown in Figure 6.

This is a genetic hypothesis of the textual relations within the whole tradition, generated from the entire mass of data concerning agreements and disagreements in the tradition by evolutionary biology software. We can presume that the centre of the tradition is about where Sh is, close to the centre. The branching node points from there can be interpreted as corresponding to lost ancestors within the tradition. What this diagram suggests is that three of this quartet, B L Q, are actually members of a single group of manuscripts descended from a single now-lost copy. Shaw calls this group 'beta-1'. Thus, you can explain the appearance of this reading 'ut' in these three manuscripts as the result of a single error in their common ancestor, the beta-1 manuscript. The three BLQ then have this reading because they all copied this manuscript.

Various questions arise from this. Is it true, that BLQ actually constitute a single group, joined in common descent from an ancestor? Which of the three readings – ut et omitted – should we accept as most likely present in the ancestor of the whole tradition? This brings us to point five of our list: how did the editor edit. The CD-ROM gives a series of articles in which Shaw lays out her editorial philosophy, methodology, and conclusions. In the Introduction, for instance, is her declaration that any edition is '*un'ipotesi*

di lavoro’, a working hypothesis. In the section ‘The Transcriptions’, she explains the transcription principles underlying the entire edition: exactly what was represented from the manuscripts, how. In the section ‘The Critical Apparatus’, she explains what the collation contains: what was done about capitalization, word division, spelling variants, etc. And in the section ‘Methodology’ she puts forward her views as to how the manuscripts relate to each other. Figure 7 shows the opening of her discussion of the group ‘Beta-1’, in which she presents lists of variants confirming the existence of the group.

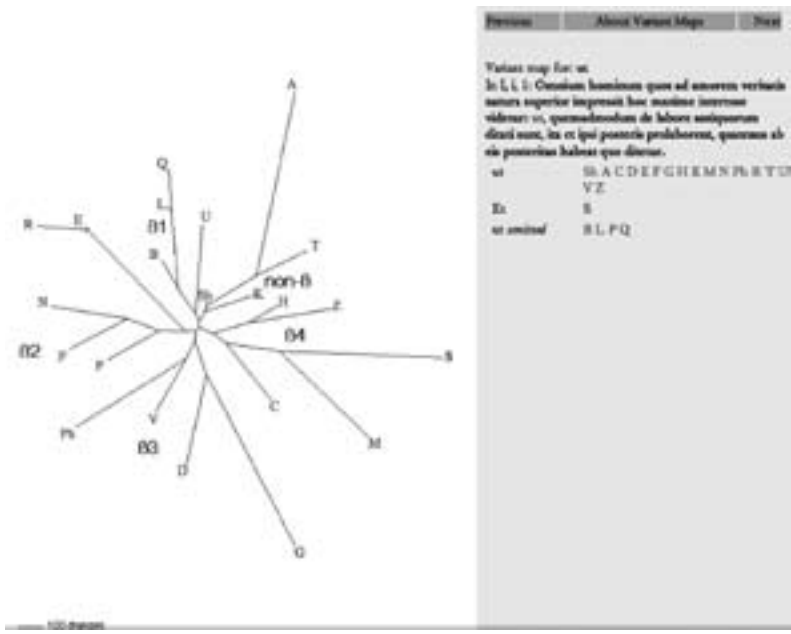


Figure 6 Variant map at ‘ut’

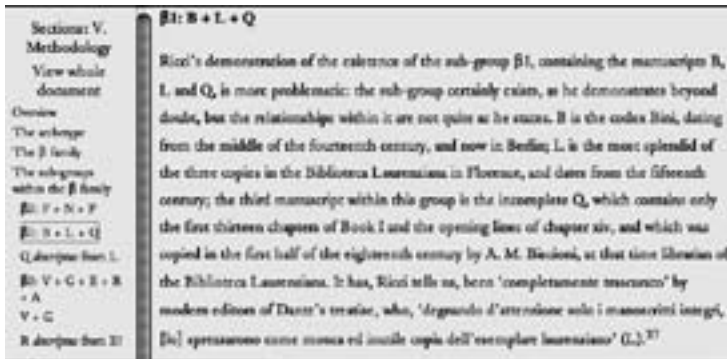


Figure 7 Beginning of Shaw's discussion of the Beta-1 group

These last sections could be presented in print – and indeed, Shaw has already published much of this discussion in print form. But what if we are unsure of some points in Shaw's analysis; what if we want to explore all the information ourselves, to see if we can make our own hypotheses about the tradition. To consider just one case: the omission of 'ut' is found in manuscript P as well as the trio BLQ. Why? Could it be that Shaw is mistaken: BLQ may not be a trio, or maybe P is a member of this group too?

In the days of the print edition, one could only raise such questions by, effectively, redoing all the editor's work. Indeed, Shaw did just this: for almost forty years, since the publication of Ricci's edition in 1965, she has been questioning Ricci's conclusions and slowly marshalling the evidence first to challenge them, and then to erect her own hypothesis. This brings us to the sixth point, of the advantages of the digital edition: that they may let readers test the editor's methods and conclusions using the editors own data and tools, and so without requiring that the reader must remake the whole edition. In the Monarchia edition, we offer the Vbase tool (Figure 8), to allow readers to ask questions such as: are B L Q a real group? Now, if BLQ are a real group, there should be a significant number of readings present in at least two of these manuscripts, and NOT present in more than (say) five manuscripts in total. The theory is, that if the reading is in more than five manuscripts all told, then the reading is so widespread as not to be characteristic of just these three. So we ask the question, and we discover that there are no less than 280 readings which satisfy this test. Looking down the list, they look satisfyingly just the sort of error a careless scribe might make: starting with the omission of

ut, here. On this evidence, Shaw’s assertion that BLQ form a single group, descended from a single copy, looks rather good.



Figure 8 Vbase search for the Beta-1 group

In summary: for a digital edition to be all it can and should be, then it will let the editors include all that should be included, and say all that needs to be said.

I have spoken today of just one edition which we are about to publish. Actually, we have published rather more than this, some of which can be seen on the Scholarly Digital Editions website (Figure 9), and we are currently preparing several more.

But I am not going to say: you should all go out and give forty years of your life to make an edition like this. Actually, I don't think the digital editions of the future will look much like the *Monarchia* I have been showing you; nor will they be made in the same way, by the heroic efforts of a single individual scholar. As some of you know, for some time now I have been working with various scholars on the digital Nestle-Aland greek New Testament. In late 2005, we decided we did not like the interface we had made. So we rebuilt it: now it looks like Figure 10:



Figure 9 Some editions published by Scholarly Digital Editions



Figure 10 Draft interface for the Nestle-Aland digital edition (as of 6 March 2007)

You see here that this differs from earlier editions. Up to now, we have presented our readers with a rather fixed interface, or series of fixed interfaces. Thus, in the *Monarchia* examples: you could choose to have the text and translation; or a manuscript transcription and image; or the collation; or the editorial commentary. But each interface presented a fixed screen, with limited choices as to how the user could arrange it, you could not mix the various elements from various interfaces (for example, putting a transcription alongside the collation, or commentary alongside the text). But this new interface (actually modelled on the customizable Google personal pages) allows the reader to select what they want to see on the page (here, the Nestle-Aland overtext, three different apparatus views, and a dictionary), and allows the reader to move these elements around the screen, or resize them, at will.

Now what is interesting about this interface, is this: as soon as we showed it to scholars, half said: we would like to grab that bit there and include that in our edition/commentary/discussion of X. The other half said: we would like to add our bit – our discussion, annotation, etc – here! I have elsewhere described such editions as ‘fluid, co-operative, distributed’ (‘Where We Are with Electronic Scholarly Editions, and Where We Want to Be’). Each scholar might contribute separate pieces: a transcription, a collation, a commentary, an annotation, an emendation, a new set of images. For the *Monarchia*, Shaw did all this herself. Imagine an edition where many people contribute, which grows in use. Further, imagine an edition where each reader might build their own edition, by pulling together various pieces from different places: an edited text there, variants from selected manuscripts here, commentaries there, images from particular manuscripts here. Already we are seeing digital objects – libraries, collections of texts and images, which are moving in this way: the latest version of Perseus, for example. This can be done.

To me, this points the way where I think electronic editions must go. Many textual traditions are too big for a single scholar, even for a single team, even for a single group of teams. But if lots of individual people, some within universities, but many everywhere else, can add their piece: their transcription, their new and better images, a new collation or a commentary – then we might really get somewhere. For me, the reason few electronic editions are now being made is rather simple: the task is too large for any one scholar or group. Hoyt Duggan realized this long ago, when constructing the cast of thousands working on the electronic *Piers*

Plowman (Piers Plowman Electronic Archive) If we build them so many hands can work together, and so many people can read them just as they want, then we might make progress.

This is an exciting, and demanding, prospect. How will we get there? I think we need two things.

First, we need a new set of tools for making scholarly editions. Many of the editions I have referred to today were made with *Collate*, a software tool I started writing twenty years ago. When I designed it, I had no other model of editing than this: a scholar working on his own. And so *Collate* is designed for one scholar with one computer. Now, groups of scholars work together: we need systems for file handling, version control and coordination built into the software. And we do not need one system that claims to do it all: we need a constellation of systems which work together. A great start towards such a system has been made by Kevin Kiernan, and we will be hearing about that this afternoon. We have been sketching our own system, which we call EDITION. (Note: March 6, 2003. Since giving this talk, I have been moving further towards co-operative tool development. See www.sd-editions.com/blog).

The second problem, I think, is much more difficult. I have had, I think, more experience making and publishing scholarly editions in electronic form than anyone on the planet. In twenty years of work in this area: what is the greatest problem I have faced. I can tell you: it is not the lack of training, it is not the lack of longterm support, it is not the lack of software, it is not even the reluctance of people to buy the editions we make. It is this:

The expense and difficulty of negotiating capture and permissions rights for high-quality digital images of original materials.

It is this, more than anything, which is preventing us doing the work we want to do, and can do, and which other people need from us. If we can work our way past this, suddenly, all things are possible. And we can: the mass digitization projects of Cologne (<http://www.ceec.uni-koeln.de/>), St Gall (<http://www.e-codices.ch/de/index.htm>) and the National Library of the Czech Republic (<http://www.manuscriptorium.com/>) show what can be done. Ever faster high-resolution full-colour single-shot digital cameras make it conceivable to photograph manuscripts as quickly as ana-

logue photography. The UK is some way behind these European efforts, though several of us would like to move faster on this: see <http://www.canterburytalesproject.org/massdigit/index.html>. Here, as elsewhere, digital scholarship must follow developments elsewhere. But when we can, we should move.

References

- Duggan = H.N. Duggan, *The Piers Plowman Electronic Archive*, at www.iath.virginia.edu/piers/
- Robinson 2003 = P.M.W. Robinson *Where We Are with Electronic Scholarly Editions, and Where We Want to Be*, in «Jahrbuch für Computerphilologie», 5 (2003), pp. 125-146, available online at: <http://computerphilologie.uni-muenchen.de/jg03/robinson.html>
- The Digital Nestle-Aland Edition of the Greek New Testament: see <http://nestlealand.uni-muenster.de/>
- Shaw 2006 = P. Shaw (ed.), *Dante's Monarchiai*, Scholarly Digital Editions, Birmingham, 2006.