PHILOLOGY AND DIGITAL HUMANITIES

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Introduction

For many practitioners of the diverse traditions of yoga and meditation, the study of texts might not form a significant part of their practice, if at all. The kind of mental training involved in meditation, for example, seems almost impossible to learn from a text. And as B. K. S. Iyengar writes in his preface to Edwin Bryant’s translation of the *Yogasūtra*, ‘Pātañjala Yoga is a practical subject and not a discursive one’ (Bryant 2009: ix). Yet, immediately following that statement, Iyengar shows how deeply he has studied the text, debating the interpretation of various Sanskrit terms and disputing the commentaries of medieval philosophers; it is clear that his yoga practice involves a serious engagement with textual scholarship. Moreover, as David Gordon White has pointed out, no matter how far removed contemporary yoga practices are from the ancient texts that they purport to derive from, teacher training in the United States often still includes mandatory instruction in the *Yogasūtra* (White 2014: 1). It seems that many of today’s yogis still appeal to the authority of a text, and the ongoing conversation between contemporary practitioners and the knowledge of the distant past would be impossible without the work of textual scholars.

Yet as a practitioner, one might not consider some of the fundamental questions that a textual scholar would ask, namely: Where and when does the version of the text that we are reading really come from? How different is the text we have now compared to what the author wrote, hundreds or thousands of years ago? What other versions of the text exist, apart from the one that we consider to be authoritative? Research into these issues, which forms part of the discipline termed philology,1 can give us valuable insights into the intellectual history of yoga as it evolved and diversified in South Asia and beyond.

Reconstructing an ancient text

No quería componer otro Quijote – lo cual es fácil – sino “el” Quijote.
(‘He did not want to compose another Quixote – that would be simple – but the Quixote.’)

*(Borges 1996: 19)*

Typically, when we talk about an ancient text such as ‘the *Yogasūtra* of Patañjali’, we are tacitly referring to an original, unified work by a definite author, composed at a definite point in time. All three of these assumptions are often highly contentious. Many texts are stratified – consisting
of many layers composed at different times. At which stratum should we consider the text to be the *Yogasūtra?* Philipp Maas, for example, has argued that the *Yogasūtra*, together with its *Bhāṣya* commentary, should be considered a single text, which – in manuscript sources as well as in commentaries and later works referring to it – is titled the *Pāñjalayogasūstra* (Maas 2013a). In addition, even if we have an estimate of when the text – in the form in which we have it now – was composed, we usually do not have manuscripts that are that old. But none of these problems have stopped scholars from continuing to study ancient texts. And while the ‘ideal but impossible desideratum’ of reconstructing an original work is out of reach, we can reconstruct a version of the text that is as close as possible to the original, based on the extant manuscript evidence. In this endeavour, we are not strictly limited by the date of the oldest manuscript; that is, we do not simply take the oldest manuscript and consider that to be the best text available to us. By comparing all known manuscripts, we can usually reconstruct a version of the text that is older than any single manuscript. But since each manuscript contains a slightly different version of the text, we need some method to choose between variant readings.

When there is sufficient evidence, perhaps the most common approach used to reconstruct a text from manuscripts is ‘Lachmann’s method’, named after the nineteenth-century German philologist, Karl Lachmann:

To make a long story short, the method of Lachmann, or ‘common errors’ method, as theorized by Paul Maas (Maas 1957), came about in the historicist/positivist context of the nineteenth century, as a way of analyzing the textual variation in manuscripts in genealogical/hierarchical terms: mistakes produced in the course of the copying process are transmitted in the subsequent copies, which add their own mistakes etc.

(Bausi et al. 2015: 336)

In order to do this, we represent the genealogical relationships between manuscripts – that is, our hypothesis of how the text was transmitted through repeated copying – as a family tree, or stemma codicum. For example:

![Figure 26.1 A sample stemma codicum](image-url)
In this stemma, A, B, C, D and E represent manuscripts. α represents the archetype – that is, the hypothetical common ancestor of our surviving manuscripts, the oldest possible version of the text that we can reconstruct based on that evidence. The relationship between this archetype and the original is not clear. In our hypothesis, A and B derive from a common source, as do C and D. E is a direct copy of D, and therefore it is not useful for reconstruction purposes. Theoretically, it contains the text of D, but with additional errors. Having established a stemma, the work of reconstructing the archetype can proceed, resulting in what we call a critical edition of the text.

However, in practice, for any given text, the situation is rarely so simple or straightforward. The extant manuscripts might be fragmentary, or ‘contaminated’ – that is, one manuscript may be copied from more than one source – or a scribe may have actively tried to ‘correct’ the text they were copying. It may be impossible to construct a stemma. Moreover, a stemma is only a hypothetical model to help guide the reconstruction; it usually does not represent a true, complete and historical account of how the text was transmitted, simply because we usually do not have access to every single manuscript of the tradition. For example, in reality, E could have been copied from another, lost, manuscript which was copied from D, but in the absence of evidence for that lost manuscript, the stemma presents the most parsimonious hypothesis of how the text was transmitted – that is, it hypothesises the lowest possible number of lost intermediate copies between the archetype and the surviving manuscripts.

Another common issue is that the archetype itself may already contain many errors. Depending on the age of the surviving manuscripts, the oldest reconstructible archetype might be hundreds of years younger than the original text, and, in many cases, the archetype may be so corrupt that a careful editor will need to emend it. This is where the ‘positivist’ ideal of Lachmann’s method gives way to the expert judgement of the editor, who must be well-versed in the language and culture of the presumed original as well as how that language and culture are transformed each time the text is transmitted into a new context, e.g. as it crosses boundaries of script, dialect, religion, polity, etc. Moreover, we can also look to quotations and references in later texts as ‘secondary’ witnesses, which may quite possibly preserve a version of the text that is older than the manuscripts of the text itself. Although there are many handbooks to the work of editing a text in general, each particular case ultimately requires careful consideration of the evidence at hand and its historical, cultural and material context.

Against reconstruction

For a long time people have been aware of differences in local recensions or traditions but it has not occurred to them that these differences should be accounted for in terms of historical change. … The only conclusion which suggests itself is that any locally accepted version is authoritative in its own right.

(Biardeau 1968: 122)

Against this method of textual genealogy are scholars who believe that a critical edition gives a false sense of authority to the text as reconstructed by the editor. As opposed to a reconstructed text, we know that the text of any given manuscript was really read by someone – at the very least, by the scribe in the act of copying. The manuscript also has a temporal, geographical and cultural context, whereas the reconstructed text exists in a nebulous, hypothetical past. Some critics have gone so far as to describe a critical edition as ‘the invention of the editor’ (Schoening 1995: 180; see the reply in Adriaensen et al. 1998: 39). Moreover, as Biardeau has pointed out, different versions of a text are authoritative in their own right – that is, people
base their practices and beliefs on them – without referring to any hypothetical original. Biardeau considers these versions to be different recensions. The recension of the Yogasūtra that Iyengar studied, for example, contains fifty-six sūtras in the third chapter, whereas medieval commentators accepted fifty-five sūtras (Bryant 2009: xi). Even if, in the process of producing a critical edition, an editor concluded that Iyengar’s extra sūtra was a later addition, it does not make Iyengar’s version any less important. For a scholar studying contemporary yoga practices, Iyengar’s version is likely to be much more relevant than any presumed original.

Along with a shift from print publishing to online publishing, this critique of critical editing has given rise to what Elena Pierazzo terms ‘digital documentary editions’:

> an edition of a text based on a single document, which attempts to reproduce a certain degree of the peculiarities of the document itself, even if this may cause disruption to the normal flow of the text presented by the document.

(PIerazzo 2014: 2)

This impetus to reproduce a document rather than to edit it is not new; especially in the case of texts that exist in a single manuscript witness, scholars have produced ‘diplomatic editions’ which simply reproduce the text as it is found. However, with a structured format like TEI XML, scholars can now easily encode much more information about a document than before, such as page and line breaks, additions and corrections, marginal annotations, changes of the scribal hand, etc., in a machine-readable format. A number of digital editions of multi-witness texts also take this approach – that is, they reproduce, in as much detail as possible, the text of the physical documents themselves, rather than attempt to reconstruct a hypothetical text based on those documents, resulting in an archive of careful transcriptions rather than a single, authoritative text.

Another recent development, also linked with the use of new technologies, is the conceptualisation of text-genealogical relationships not as hierarchical trees but as unrooted trees, without the presumption of an original text from which all others descend. This is an approach inspired by the application of phylogenetic software, used in evolutionary biology, to the study of texts. A phylogenetic approach – in which relationships between manuscripts are inferred from their common traits – typically suggests a hierarchical tree, and, indeed, phylogenetic software has been used to reconstruct textual archetypes (See Maas 2009; Maas 2013b; Graheli 2015; Apple 2019). But, as Wendy Phillips-Rodriguez has argued, there may be cases where the textual transmission is so complex that it would be too presumptuous to reconstruct an archetype; instead, an unrooted tree – which shows the relationships between text versions without suggesting which version is closer to the original – can help us understand each version as ‘separate interpretations, each with its particular history of evolution’ (Phillips-Rodriguez 2012: 228).

Another way of representing relationships between texts – the split network – is also useful for detecting contamination: whereas in a tree each manuscript is only connected by a single branch, a split network uses sets of parallel edges to represent ‘incompatible and ambiguous signals in a data set’ (Huson and Bryant 2006: 255). These edges can be used to infer situations in which one manuscript has been copied from more than one exemplar (Phillips-Rodriguez 2007: 102ff).

Both the rise of documentary editions and the tendency towards a less hierarchical understanding of the relationship between text versions can be understood as part of an umbrella movement termed ‘New Philology’, in which ‘the wickedly complex, seemingly endless textual variations engendered by manuscript copying and circulation […] suddenly became not a jungle to be tamed but the source of critical fertility’ (Cohen 2017). In Lachmann’s method
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of reconstruction, the copying mistakes that a scribe makes are considered only in as much as they provide evidence for what the original text might be. But the variation that an editor encounters, the accumulated errors that one tries to correct when reconstructing the text, are important pieces of information that can also help us to piece together the history of the text’s transmission and reception, hundreds of years after its composition, as in the case of Iyengar’s Yogasūtra. As Peter Robinson writes, this could redefine what an edition is: ‘a narration of the whole history of a work, from its conception, through its production and first and later publication, and then its reception among all its readers right to the present’ (2016: 198).

**Having your cake and eating it too**

Yet there is no necessary opposition between critical editions and diplomatic, documentary editions; in fact, they can be mutually supportive endeavours. Critical editions can benefit from the meticulous documentation and diplomatic transcription of its manuscript witnesses. Documentary editions, on the other hand, can benefit from the connections that a critical text draws between multiple documents, placing a single manuscript in a broader context. Ideally, a digital edition would be critical, diplomatic and documentary, comprising a digital archive of carefully transcribed documents as well as one or more critical texts, which make an argument about the genealogical relationship of those documents to one another. With such a wealth of information, the digital edition should also provide tools to help the reader make sense of that data, to analyse the distribution of textual variation and test scholarly hypotheses about it. In this way, we can address some of the concerns around the opacity of critical, editorial decisions: every reading in the critical text can be easily traced back to its source.

**Interpreting manuscripts**

It’s a little like reading – the bedrock reality is black marks on a page, and those marks are nothing like the world, but your mind insists on making sense of them. The illusion is seamless, and thus hard to escape. Every inconsistency gets explained away.

*(Mason 2017: 276)*
The amount of detail that a digital edition contains depends, essentially, on the degree of diplomacy that the editor employs in the transcription of the source documents. This can range from, on the one hand, ‘ultra-diplomatic’ transcription (D’Iorio 2010: 52) – taking care to reproduce, typographically, the placement of each character on the page – to, on the other hand, the regularised spellings often found in a critical apparatus, without any reference to where a reading occurs on the page at all. In any case, some amount of interpretation is inevitable; transcription is, at its most fundamental, the mapping of a messy, material reality to a fixed set of characters in a writing system. Every transcription, no matter how diplomatic, embodies some assumptions about what the text is and how it was meant to be used. But, generally speaking, the more diplomatic the transcription, the more useful it will be as data.

However, for a digital edition, it is perhaps more useful to think in terms of specificity rather than diplomacy. In transcribing documents, it is often preferable to make some undiplomatic, editorial interventions to specify how the text should be interpreted, since these can easily be ignored at the data analysis stage. For example, Sanskrit manuscripts are usually written in scriptio continua, with no spaces between words. While an ultra-diplomatic transcription would reproduce this, for the purposes of a digital edition, it is much more useful for the editor to add spaces; this adds a layer of interpretation that makes it much easier to compare manuscripts. Moreover, it is simple to remove those spaces automatically at the data analysis stage, but very difficult to add them in. Another example: some manuscripts do not distinguish between va and ba, writing both of them as va. Diplomatically, one would transcribe this as va in all cases; however, it is much more useful for the editor to transcribe this as va or ba depending on how one interprets it. Again, it is simple to change all ba-s to va-s at the data analysis stage, if one does not want to use this information. For a human reader, these undiplomatic gestures also make it much easier to use the text; it gives some indication about how the transcriber has understood the text, and does not burden the reader with the work of, for example, splitting up a line into individual words.

Once the documents – containing different versions of the same text – have been transcribed, they can be compared in order to come up with a hypothesis about the relationship between the versions. Since the documents have been transcribed diplomatically, taking care to reproduce orthographic variations (e.g. patañjali could also be written patanjalī), the transcriptions first need to be processed in order to filter out variants that we do not consider to be informative. In the past, when text versions were collated by hand, an editor would discard such variations at the collation stage: that is, the editor would simply go through each manuscript, comparing it to some vulgate text, and note down ‘substantial’ variant readings, ignoring, for example, the difference between patañjali and patanjali. However, working with diplomatic transcriptions, we can do this work automatically, expressing our text-critical principles – our rules for deciding whether or not a variant is substantial – as computer algorithms.

**Case study: a quotation from the *Pātañjalayogaśāstra***

In my work on Helārāja’s *Prakīrnāprakāśa*, a tenth-century commentary on Bhartṛhari’s *Vākyapadiya*, I came across a quotation from the *Pātañjalayogaśāstra* that was significantly different from the text as printed in the 1904 edition of K. S. Āgāse. I hypothesised that Helārāja had falsified the quotation, changing it to fit the argument that he was trying to make (Li 2018: 43ff). But in order to be sure that my understanding of Helārāja’s text was not merely due to a scribal error, it was important to critically edit the passage in question. Thus, I diplomatically transcribed this passage from sixteen manuscripts and three printed editions of the *Prakīrnāprakāśa*. No significant
variation was found. But what about variant readings that would, traditionally, be considered insignificant? One particularly important phrase from this quotation is, in the Āgāśe edition, 

\[ \text{ṣaḍ viśeṣapariṇāmāḥ} \] (1904: 85), ‘the six unparticularized transformations’. Helārāja’s reading, according to all manuscripts and printed sources, is \( \text{ṣaḍ viśeṣapariṇāmāḥ} \), ‘the six particularized transformations’. In the printed editions, this is printed as \( \text{ṣaḍ viśeṣapariṇāmāḥ} \), with a virāma – here represented by an underscore ( '_' ) – applied to the \( d \). In a Devanāgarī manuscript, it is very easy for a scribe to misinterpret this: a virāma is very small, and could easily have crept into the text through careless copying. On the other hand, if the manuscripts use a conjunct character rather than a virāma, it would look like this: \( \text{षष्ठि} \). It is much more difficult to go from Āgāśe’s reading, \( \text{षष्ठि} \), to \( \text{षष्ठि} \), unintentionally.

Traditionally, a critical edition would not record this type of orthographic variation, i.e. the use of a virāma versus a conjunct character. And in my digital edition of this passage, the default behaviour is to ignore such differences. However, since the digital edition is built on diplomatic transcriptions of the manuscript sources, we can easily ask the software not to ignore virāmas and display an apparatus which considers a virāma as a variant reading. Sure enough, the resulting display shows that only the printed editions use the virāma; all manuscripts use a conjunct character.

This becomes even more significant when we take into account the fact that the manuscript sources are in Devanāgarī, Malayālam and Telugu script. Like Devanāgarī, both Malayālam and Telugu have a distinct conjunct character for \( ḍvī \), which is what we find in the manuscripts. This small, previously insignificant variation – which a scholar, only a few decades ago, would have ignored – lends some support to the hypothesis that the reading in Helārāja’s text is intentional, rather than a scribal error. Naturally, this is only one piece of a larger body of evidence that points to Helārāja’s intentional misquotation. But the more carefully we document our sources, the better equipped we are to answer these questions, and we have shown how diplomatic transcriptions can work together with the flexibility of the digital edition in order to facilitate our scholarly investigations into the history and transmission of a text.

**Artefacts in time and space**

Ideally, we would also have a digital, critical and diplomatic edition of the *Pātañjalayogaśāstra* to work with, comprising both diplomatic transcriptions of the available manuscript witnesses
and printed texts, as well as a critically edited reconstruction. With more and more texts edited this way, the possibilities for new avenues of research become enormous: we can begin to investigate the relationships not only between different texts, but also between different versions of different texts. Is Helārāja’s peculiar quotation of the Pātañjalyogasāstra attested in any of the Pātañjalyogasāstra manuscripts themselves? If so, can we then begin to hypothesise a stemma codicum that spans across the manuscripts of both the Pātañjalyogasāstra and the Prakīṇapatnākaśa, understanding their evolution not as two isolated traditions, but rather, perhaps, as texts embedded within broader philosophical trends evolving over time?

Apart from variations in the text itself, we can also begin to look at the temporal, geographical and cultural contexts in which these variations arise. A diplomatic transcription should – in addition to transcribing the text – document the particular material features of each manuscript. By correlating the genealogy of the text itself with metadata on the provenance of the manuscripts, features of their format and any information about the scribes and scribal practices that we have, what more could we discover? How does cultural contact shape the transmission of a text across time and space? What kind of intellectual networks existed to transmit knowledge across those boundaries, and how do they correlate with trade routes or migratory patterns? We absolutely have the technology to wrestle with these questions; now, as ever, we need scholars to do the careful, meticulous and unglamorous work of diplomatic transcribing and documenting manuscripts.

Notes

1 Many scholars have offered definitions and re-definitions of this term; for examples, see Nichols 1990, Said 2004 and Pollock 2009. Michael Witzel has defined philology as ‘the study of a civilization based on its texts’, with the aid of other disciplines such as history, anthropology, religious studies, palaeography, zoology, etc. (Witzel 2014, 16).
2 Federico Squarcini, on the other hand, argues for the Yogasūtra as an independent text (Squarcini 2015: cxii onwards).
3 As V. S. Sukthankar puts it; his critical edition of the Mahābhārata has been one of the most monumental works of textual reconstruction ever attempted. See Sukthankar 1933: cii–ciii.
4 However, see the criticisms below, as well as Joseph Bédier’s method of ‘best-text’ editing (Trovato 2014: 77ff).
5 The term archetype has been used to mean slightly different things by textual scholars; for details, see Trovato 2014: 63ff.
6 For examples of these issues in yoga texts, see the stemmata of the Pātañjalyogasāstra (Maas 2006: lxiii) and the Khecarīvidyā (Mallinson 2007: 11).
7 For an interesting example of this, in which editors have posited that the author himself revised the text, see Coulson and Sinclair 1989: xxx.
8 See, for example, Katre and Gode 1941, West 1973, or Trovato 2014.
9 As Trovato writes, ‘Actually, almost all existing manuals of textual criticism are useful, because they reflect the experiences of different scholars’ (Trovato 2014: 29).
10 See Robinson 2016: 196.
11 This strange proverb has been traced back to 1546, in which, originally, it states: ‘Would you both eat your cake, and have your cake?’ (Zimmer 2011)
12 For texts with very meagre manuscript evidence, this is also possible in a print format; for example, see Steinkellner and Krasser 2016.
13 As Peter Robinson has noted, few digital editions actually offer such tools, and thus are not so differentiated from print editions (2016: 193).
14 For a discussion of this ideal, see Buzzetti and McGann 2007.
15 Transcribing a manuscript assumes that the text was meant to be read; this is not necessarily true. For example, consider the practice of sealing manuscripts inside Buddhist statues.
16 See Li 2017 for an overview of this technique; Li 2018: 151ff contains a full list of filtering rules for Sanskrit texts.
17 Apart from a couple of sources which read yad.
18 For more information on how the software works, and for a digital edition of one chapter of the Prākīnaprakāśa, see https://saktuniva.org/.

Bibliography

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