Digital Wittgenstein Scholarship: Past, Present and Future

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1. Wittgenstein scholarship in the pre-digital era

About twenty five years ago, I began work on a dissertation on the development of Wittgenstein's philosophy. I wanted to know more about how the Tractarian "final solution of the problems" of philosophy unraveled after Wittgenstein's return to philosophy in 1929, and I expected that a close study of his writing on mind, meaning, and self during the 1930s would cast light on the treatment of those topics in the *Tractatus* and *Philosophical Investigations*. The title of the resulting dissertation, "Wittgenstein's 'battle against the bewitchment of our understanding by means of language'", a quotation from *Philosophical Investigations* §109, was meant to indicate my focus on the way that Wittgenstein thought of language as both the means of our bewitchment, and the means by which we could struggle against bewitchment. My aim was to approach that already familiar theme in a fresh way by looking at how that struggle changed and developed as he moved away from the *Tractatus* and toward the *Philosophical Investigations* during the so-called "middle period". I soon found that I needed to look at the manuscript sources of the published material, not only because the relationship between the published text and the *Nachlass* material was controversial, but also because earlier drafts often contained views that Wittgenstein later criticized, and the process of revision – what was included, what left out, and what revised – provided an access to the development of Wittgenstein's philosophy that could not be gained from the published material alone.

As Hacker has observed, the *Nachlass* is "an indispensable tool for the interpretation of [Wittgenstein's] thought. For there one can find the dozens of pages of struggle that lead up to, and shed light on, the one or two sentences constituting the remark that is the final expression of his thought on the matter." (Hacker 2001, viii) However, the precise nature of the relation-

ship between the "struggle" in the *Nachlass* sources and the "final expression" has become one of the principal topics of debate among *Nachlass* interpreters. The first book to make extensive use of the *Nachlass*, Hallett's *A Companion to Wittgenstein's "Philosophical Investigations"* (1977), provided a wealth of references to *Nachlass* sources, including not only earlier formulations of passages in the *Philosophical Investigations* but also passages where Wittgenstein set out views that sharply contrast with his later thoughts. However, Hallett for the most part left it up to the reader to assess the extent of the continuities and discontinuities. Starting with the first volume of Baker and Hacker's *Analytical Commentary on Wittgenstein's Philosophical Investigations* (1980), most of the work on the *Nachlass* published in the 1980s and 1990s turned on identifying the first formulation of "middle period" positions that could be attributed to the *Philosophical Investigations*, and so stressed the continuities between Wittgenstein's writing in the 1930s and the *Philosophical Investigations*. More recently, a number of interpreters, myself included, have challenged this methodology, arguing that a focus on continuities in wording can lead one to overlook deep discontinuities between the use of those words in earlier and later contexts (see Schulte 2002, Pichler 2004, and Stern 2004).

2. Digital Wittgenstein scholarship: a brief history from a personal perspective

Until the late 1990s, with the publication of the Bergen edition of the Wittgenstein papers (Wittgenstein 2000; the first volume was published in 1998) the only public access to the *Nachlass* was by means of microfilm, or transcripts of unpublished sources of the *Philosophical Investigations* produced and circulated by G. H. von Wright, assisted by Heikki Nyman and André Maury. Indeed, it was not until the late 1960s, with the production of the "Cornell" microfilm of the *Nachlass*, and the publication of von Wright's catalogue and guide to "The Wittgenstein Papers" (1969, revised version in Wittgenstein 1993, 480-510, and updated in Wittgenstein 2003, 407-410), that research on the Wittgenstein papers became possible. Despite the difficulties involved in working with this material, the promise it held for a deeper understanding of Wittgenstein's work meant that a remarkably large number of books were written during the 1980s that made extensive use of it. These included the first volumes of Baker and Hacker's

Commentary on the *Philosophical Investigations* (1980, 1980a, 1985 and Hacker 1990; see also 1984) Hintikka and Hintikka's *Investigating Wittgenstein* (1986)*,* Hilmy's *The Later Wittgenstein* (1987)*,* McGuinness's *Young Ludwig* (1988), Monk's *The Duty of Genius* (1990), and a number of essays by Nyíri on the emergence of Wittgenstein's philosophy (1986, 1992)*.*

While various electronic transcriptions of large parts of the *Nachlass* were produced in the 1980s, none of this material was freely available.[1] During the early 1990s, I did, however, have access to the first digital edition of Wittgenstein's published work, a package based on the published texts, running in MS-DOS and supplied on a dozen or so floppy disks, that permitted sophisticated statistical analysis of word frequencies, produced by Alastair McKinnon. While the statistical analysis struck me as an excellent example of what Jaakko Hintikka characterized as "the clear danger that Wittgenstein research, or part of it, will be directed by the increased reliance on computers into philosophically unimportant directions" (Hintikka 1991, 197), it was an exciting step forward to be able to search the published materials for key terms. The Intelex edition of that transcription of Wittgenstein's published work, the first published digital Wittgenstein text, was released in 1993, packaged with Folio Views. Because Folio Views has been used in the Past Masters series of electronic editions of the works of many of the most important figures in the history of philosophy, which have been bought by many scholars and university libraries, it is a familiar environment for many philosophers. A later version of that software was also used in the Bergen electronic edition of the *Nachlass*.

Like many other researchers in the humanities in the early 1990s, I became an enthusiastic evangelist for the coming digital turn. I first visited the Bergen Wittgenstein Archives in the summer of 1993, just as I was proof-reading the book based on my dissertation, *Wittgenstein on Mind and Language* (Stern 1995), one of the last books on the Wittgenstein *Nachlass* written before the Bergen edition of the Wittgenstein papers became available. I gave my first talk on "Computer based research on Wittgenstein" in 1992, and presented a paper discussing the prospects for a "complete edition of the Wittgenstein papers" at the Kirchberg symposium the following year (Stern 1994). In my Kirchberg paper, I predicted that the "electronic edition of the Wittgenstein papers will make it possible to look at his writing as an interconnected whole, rather than as a discrete number of self-contained texts. Electronic text is not merely a new way of reading traditional texts; as a hypertext, it belongs to a new medium that is as dissimilar from

printed text as a printed text is to a manuscript or conversation" (Stern 1994, 266-7). Having spent much of the previous ten years acquiring the knowledge and expertise needed to explore the connections between Wittgenstein's unpublished writings, I could see that an electronic edition would soon enable anyone with a serious interest in this material to carry out comparable research far more rapidly and efficiently. With such researchers in mind, I wrote a guide to the Wittgenstein *Nachlass* for the *Cambridge Companion to Wittgenstein*, under the title, "The Availability of Wittgenstein's Philosophy." There, I summed up the promise of the digital turn for Wittgenstein scholarship in the following terms:

> While the links that animate hypertext are familiar, and can, at least in principle, already be followed by a sufficiently skilled reader, in practice, it promises to change our understanding both of Wittgenstein's way of writing and his philosophy. Readers of the electronic edition will be able to compare different stages of Wittgenstein's revisions, systematically review his use of key terms, or search customized concordances. Questions that could not have been answered before will be answered in less time than it takes to ask them. Readers will approach Wittgenstein's writing in new ways, exploring connections and relationships that have received little attention in the past. (Stern 1996, 468)

In addition to providing an introductory guide to the terrain of the *Nachlass*, I provided a number of examples of the kinds of connections that a digital edition can facilitate, arguing that Wittgenstein's published works become "more accessible if one approaches them as selections from a larger body of work. Looking at this larger body of work makes it easier to grasp the problems that occupied his attention" (Stern 1996, 446.)

3. Digital Wittgenstein scholarship: the present

The first part of the Bergen edition of the Wittgenstein papers was published in 1998, with the entire edition available in 2000. Even by the relatively slow-moving standards of academic publishing, one might well expect that by 2007 we should be able to assess the impact of this "digital turn" on Wittgenstein scholarship. The available evidence suggests that its

impact has not, so far, been as large as early reviewers hoped — or feared. While many Wittgenstein experts, myself included, regard it an invaluable resource, the vast majority of work on Wittgenstein published since the turn of the millennium makes little or no use of the digital turn. Indeed, as Hrachovec (2005, 365) has pointed out, quite a few of the monographs and collections of papers on Wittgenstein published since the Bergen edition became available, including a pair of German-language readers on the *Tractatus* and *Philosophical Investigations,* do not even list the Bergen edition in their bibliography.

There are, of course, a number of reasons why a substantial fraction of Wittgenstein's interpreters will never make use of the *Bergen Electronic Edition*. Many Anglophone philosophers do not read German, and many of those who do have the command of the language needed to make use of the digital edition are simply not interested in taking on the project of exploring such a voluminous and extensive archive. Indeed, many philosophers consider the *Tractatus* and *Philosophical Investigations* to be Wittgenstein enough, and are reluctant to even avail themselves of the remainder of his published (and translated) works. Such philosophers often draw a sharp distinction between philosophy as argument and philosophy as history of ideas, and consider a philosopher's secondary and preparatory writings as only relevant to the kind of genetic study that they regard as the business of the history of ideas.[2] But in addition to these very general reasons why many philosophers are unwilling to take even the first step beyond Wittgenstein's early and late masterpieces, there is also a considerable reluctance to make use of this kind of archival material. While that reluctance rarely finds it way into print, it should not be underestimated. In a seminar on Nietzsche, another philosopher with a complex and problematic *Nachlass*, Bernard Williams gave glancing expression to this sentiment:

> I have a lot of trouble with the concept of the will to power, particularly in the Heideggerian emphasis: this sort of metaphysical force in the *Nachlass*. I belong to the Anglo-American view that those things are best left where Nietzsche left them, just like a lot of Wittgenstein's *Nachlass* actually. (Williams 1999, 257)

This reluctance to make use of digital archival resources is not a phenomenon restricted to philosophy, although it does seem to be particularly strong among philosophers in the analytic tradition. Sadly, it is precisely this kind

of prejudice that prevents a wider appreciation of the significant results that have been achieved by researchers at the Wittgenstein Archives at the University of Bergen and the Nietzsche Project,[3] results which serve to correct the misguided interpretations Williams simultaneously alludes to and promulgates.

Furthermore, there is the additional factor of resistance to digital editions, which are often approached by scholars with considerable caution, if not outright distaste. In a recent piece on "Current issues in making digital editions of medieval texts," with the provocative subtitle "Do electronic scholarly editions have a future?" Peter Robinson, a distinguished medievalist and editor, observes that "many scholars are not persuaded of the advantages of digital editions" (Robinson 2005, §8). Like Hrachovec, Robinson notes that scholars in his field that he would expect to cite and use definitive digital editions do not always do so. He also provides some useful perspective on the outlook of the principal academic publishers, observing that both Cambridge and Oxford University Press

> have stopped publishing scholarly editions in digital form. This is the more remarkable given that, in the first half of the 1990s, both publishers made considerable investments in electronic publication of scholarly editions. OUP was first, with the massive project that eventually published some 20,000 pages of Wittgenstein's Nachlaß in digital facsimile and transcripts. But even before this was published, the press had decided to pull back from digital publication of scholarly editions. ...At one point, around late 1994, we all became rather excited about the prospects for digital editions (then called electronic editions): proposals were flowing in for electronic editions from so many scholars, that CUP even issued a prospectus for a Cambridge Electronic Editions series. The excitement soon faded, however, as CUP discovered what OUP had already learnt: that electronic editions cost no less than print editions to produce and require staff to be educated in the new possibilities. (Robinson 2005, §7)

Even among those enthusiastic about the ultimate value of work on the Wittgenstein papers, there is considerable scepticism about the philosophical results that have been achieved. For instance, in an article on "Wittgen-

stein's *Nachlass*" published in *Philosophical Investigations* in 1998, Beth Savickey claimed that "To date, no manuscript material has significantly altered the reading or interpretation of Wittgenstein's later philosophy" (Savickey 1998, 348, n. 50.) This claim, however, is demonstrably false: we need look no further than the volumes that make up the first edition of the Baker & Hacker commentary (1980, 1980a, 1985, 1990, and 1996; cf. 1984) undeniably one of the most influential contributions to the interpretation of Wittgenstein's philosophy. Their close reading of the sources of the remarks in the *Philosophical Investigations* makes essential use of the *Nachlass*, and has had an enormous impact on subsequent work on that book. It set a new standard for a thorough and systematic reading of the text of Part I of the *Philosophical Investigations* as a whole, and has effectively laid to rest the once widely held view that the *Philosophical Investigations* cannot be read as a single sustained series of arguments.

However, I believe that the various prejudices that stand in the way of making the best use of digital editions are not the principal problems that hold us back from making the best use of the digital turn, not only in Wittgenstein studies, but for scholarly editions in general. Rather, the leading difficulty faced by such editions is that for all the starry-eyed talk of the possibilities opened up by electronic text, and the claims about the deep and fundamental changes accompanying the shift from print to the digital medium, we have failed to appreciate the full practical consequences of the change. In moving to the digital medium, we are not simply working with a different kind of text, as the expressions hypertext, electronic text, and digital edition suggest. Rather, we have moved to a quite different medium: software. In the remainder of this section, I discuss some of the difficulties that arise out of the mismatch between the present needs of scholarly researchers making use of digital editions and the nature of the software industry. In the section that follows, I consider some of the reasons we should still be optimistic about the prospects for the digital edition of the Wittgenstein papers.

Software development is a multi-billion dollar industry, in which humanities software is inevitably marginal, and so required to exist within a context determined by much broader market conditions and developments almost entirely beyond our control; the appropriate comparison is not to the tail wagged by the dog, or even to the fleas on the dog, but to the smaller fleas that live on the bigger fleas. Both the CD-based and web-based versions of the *Bergen Electronic Edition* are, in various ways, highly unsatis-

factory media in which to present the coding and transcription work that is the core achievement of the Bergen project. The distinction between the underlying coding achievements of the Bergen project in producing a machine-readable version of the *Nachlass* on the one hand, and its multiple realization in a variety of different software packages is usually lost on end-users, but is crucial for appreciating why there is much more to the Bergen project than the OUP and Intelex editions that have been released so far.[4]

Hrachovec (2005) has recently published a detailed and revealing discussion of the great technological difficulties involved in keeping the *Bergen Electronic Edition* available to faculty and students at the University of Vienna, as the support staff there moved to a server model that was incompatible with making use of a local CD-ROM copy of that edition. At the University of Iowa, we do own the online Intelex editions of a number of Wittgenstein databases, but I have so far told our library staff that we should not buy the online version of the *Bergen Electronic Edition* because it only provides access to transcriptions of the *Nachlass*, and does not include online access to the facsimiles of the corresponding manuscripts that are part of the OUP CD-based edition. Until now, this has been impossible, because of the bandwidth that would have been needed to facilitate access to those images, but I understand an upgrade will soon be available to the online Intelex edition that will make facsimiles easily available.

A few years ago, I corresponded with a researcher who was belittled at his PhD defense for what an examiner claimed was a serious mistake in his quotations from Wittgenstein – because he had relied on my published edition of that text, rather than the supposedly authoritative transcription online. After re-checking my transcription against the facsimile, it was clear to me that this was due to a mistake in the *Bergen Electronic Edition*, a fact that was later confirmed by the Bergen editors, who have since duly noted the correction to their transcription in their online list of corrections.[5] In my work for a review of the *Bergen Electronic Edition* (forthcoming in the *European Journal of Philosophy*), I asked my research assistant, Tuomas Manninen, to carefully check a number of selected passages from the *Nachlass* against the Bergen transcription. While we were impressed by the overall quality of the work, we did find errors on most of the pages we reviewed.

At first, I was simply able to install our departmental copy of the OUP CD of the *Bergen Electronic Edition* on a shared computer, where it was easily available to students and faculty. However, not so long afterwards,

our university initiated new security policies that required locking down public computers to prevent unauthorized software installation, and so I had to train our support staff to install and reinstall it on a regular basis. Unlike most recent commercial and educational software, installing the OUP version of the *Bergen Electronic Edition*, software designed for installation under Windows 3.1 or Windows 95, is a relatively long and complicated procedure. Five CDs, containing the images of facsimiles of approximately 20,000 pages of manuscripts and typescripts, must be copied over to a directory that satisfies the archaic convention that its name, and the name of any directory in its path, is no longer than 8 characters: it cannot be placed in a location such as "My Documents". The image viewer provided with the program no longer works in Windows XP; while it can easily be replaced by whatever contemporary image viewing program one would like to use, this requires that the person doing the installation knows how to edit the file that provides the necessary information to the program. When I tried to install the *Bergen Electronic Edition* on the state-of-the-art rental computer I used to attend the 2007 Wittgenstein Symposium, I repeatedly received error messages telling me that the path was inaccessible. Late on a Friday afternoon, I called up the support staff at our rental program, who had no idea why this was so, but were ready to rush me a fresh machine if that would fix the problem. After half an hour's frantic web searching, I learned that recent models of the make of computer in question no longer support the installation of Windows 95 era software, but that with some judicious uninstalling of the software in the operating system that produced the conflict, a workaround would be possible. While these are relatively minor technical challenges for someone used to this kind of work, the skills need to run the OUP CD-ROM, like any software designed to run on the operating systems of the early 1990s, are rather like those needed to run a car from the middle of the last century. One always has to be ready to get out the toolkit and tinker with the machinery, in situations where most of today's drivers, or software users, would either call for technical support, or simply give up altogether. More generally, today's users expect the ease of a Google search, and the ability to transfer text files, without any loss of data, into a Word-compatible document. While Folio Views provides an unusually powerful search engine, it takes some work to become familiar with its conventions, and while an arcane system of "shadow files" in the CD edition does enable one to edit and copy text without the extensive copy-protection restrictions built into the online version, casual users are unlikely to master

the procedures involved. While perfectly functional for the serious researcher willing to become familiar with the software's design, these capacities are as inaccessible to most of today's students as anything else from the far-off era of Windows 3.1.[6]

4.   Digital Wittgenstein scholarship: the future

However, as Chou En-Lai is supposed to have said in response to a questioner who asked him to assess the impact of the French Revolution, it is too soon to tell the extent to which the availability of digital transcriptions and images of the Wittgenstein papers will alter the reading or interpretation of Wittgenstein's philosophy. Hallett (1977) was the only book based on extensive use of the microfilm of the Wittgenstein papers to be published during the 1970s. Indeed, apart from the volumes co-authored by Baker and Hacker, it was not until the second half of the 1980s, over fifteen years after the production of the microfilm, that a number of books based on extensive *Nachlass* research were published. If we take into account the fact that it took two decades for a significant body of scholarly literature on the Wittgenstein *Nachlass* to emerge, and consider that the *Bergen Electronic Edition* was only published in 2000, it is surely much too soon to judge the nature of the impact of that edition on Wittgenstein scholarship. Like all major revolutions, the greatest impact of the digital turn will probably be on those who arrive on the scene afterwards and take its achievements for granted, rather than on those who witness its arrival.

Furthermore, as we have seen, the Bergen "edition" is not a book, but a piece of software, and must be evaluated in those terms. We frequently overestimate the short-term effects of technological changes while underestimating their longer-term impact. The version of the Folio Views software package employed by the *Bergen Electronic Edition* was developed in the first half of the 1990s, when Windows 3.1 was the standard operating system and only computer experts knew how to use a web browser. Because the customer base is so small, it is sold at a price that only well-endowed institutions can afford.[7] Nor has it been upgraded, although it has been repackaged as a web-based software package for university libraries, and plans are now underway for a new version that would make use of current software standards. In other words, the market for such technology has, so

far, guaranteed it a "niche" role where it is only accessible to relatively few researchers.

However, as the results of the work of the first generation of users of this software reaches a broader audience, and as the software becomes both easier to use, and more widely disseminated via initiatives such as the *Discovery* project, which will make some 5000 pages of the *Nachlass* freely available on the Web, we can expect that the digital turn in Wittgenstein studies, like the web browser in the 1990s, will eventually reach a wider audience.[8] Another promising development is the publication of the Innsbruck electronic edition of Wittgenstein's correspondence (Wittgenstein 2004), which includes hyperlinks to a substantial and informative commentary, biographical information about people, places and literature mentioned in the letters, and a timeline of Wittgenstein's activities.

5.   Conclusion

While relatively few books and articles have been published to date that make extensive use of the digital edition of the Wittgenstein papers, digital research on Wittgenstein has flourished in recent years. Crucially, the Bergen Archives have not only developed and disseminated a variety of digital editions of Wittgenstein's papers, but have also provided research facilities and fellowships, and pursued a variety of collaborative enterprises with other organizations, that have enabled a steady stream of researchers to visit the archive and create an informal international network of Wittgenstein *Nachlass* researchers. As one observer has put it, there is "a vibrant research community dedicated to the exposition and criticism of Wittgenstein's work, including the vast *Nachlass*" (Martin 2008, p. 1). For instance, between January 2002 and August 2004, 32 research projects, involving over a thousand days of on-site research, were carried out at the Bergen Wittgenstein Archives, addressing issues in Wittgenstein studies, philosophy, scholarly electronic publishing and text encoding.[9] There has been a great deal of work on the *Nachlass* materials, much of it not yet published, or only available in the form of theses and dissertations.

Furthermore, the editorial work on Wittgenstein's manuscripts and typescripts, and the composition studies that this work has made possible, have led to new ways of reading Wittgenstein. In the 1990s, it seemed likely that the digital edition of the *Nachlass* would lead to a new focus on the

details of the revision of Wittgenstein's remarks from first drafts to final formulation, and the comparison of his use of key terms at different stages of the development of his thought, as it was clear that computer searching would make this kind of research far easier. However, the first, pre-digital generation of *Nachlass* scholars had already done a great deal to illuminate connections and continuities between the *Nachlass* and the finished work. Indeed, this research had, for the most part, led to readings of the positions Wittgenstein sets out in the preparatory work as early formulations of the leading ideas of the *Philosophical Investigations*. Consequently, while recent research has certainly made use of the opportunities provided by digital search, such editorial and philological questions have not, for the most part, been at the centre of attention. Instead, the principal contribution of the digital edition, in terms of new approaches to understanding Wittgenstein, is the way it has made his work as a whole much more accessible, now that it is no more difficult to read his manuscripts and marginalia than the published works. Now that the entire Wittgenstein *Nachlass* can be easily surveyed by anyone with access to the digital edition, the pitfalls of the pre-digital strategy of casting light on the published work by looking back at the earliest sources and the history of their revision have become apparent. If one focuses on those source texts in isolation, it is only too easy to construe Wittgenstein's manuscripts as a record of the gradual emergence of his final considered views, and to take the early formulations of remarks in the *Tractatus* and *Philosophical Investigations,* passages that are often longer and more detailed than the final, published version, as a reliable guide to what their author really meant when he made use of those words many years later. On the other hand, digitally informed research on Wittgenstein has made possible a broader perspective on the development of his work as a whole, and has facilitated an appreciation of the great distance that often separates the forceful statement of philosophical theses in Wittgenstein's manuscripts from the 1930s and the nuanced placement of those words within a larger dialogical framework in the *Philosophical Investigations*. Thus, while the first, pre-digital, stage of research on the *Nachlass* in the 1980s and 1990s tended to interpret the *Tractatus* and *Philosophical Investigations* as restating and further articulating positions that Wittgenstein had arrived at in the source manuscripts, recent work on the *Nachlass* has led to a new appreciation of the distinctive style and character of Wittgenstein's masterpieces.[10]

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Notes

1. For further information, see Hintikka 1991 and Stern 1996.

2. See Stern 2004, p. 59 ff. for further discussion of immanent and genetic approaches to Wittgenstein's writing.

3. See http://www.hypernietzsche.org/.

4. For a detailed discussion of this topic, see Part II of Pichler 2002.

5. See http://wab.aksis.uib.no/bee-errors.htm.

6. The CD edition runs on Folio Views 3.x; the software's publisher has recently stopped supporting Folio Views 4.x.

7. As of spring 2007, over 250 copies were sold (Wittgenstein Archives Bergen, oral communication).

8. Further information on these developments is available at http://wab.aksis.uib.no/wab_discovery.page and http://www.discovery-project.eu/ . For an example of the various formats in which it will be possible to display the text, including an "interactive edition" of a sample Wittgenstein manuscript (MS 139a) and typescript (TS 212) that allows the reader to choose between a wide variety of editorial options, see http://wab.aksis.uib.no/wab_hw.page/ and http://wab.aksis.uib.no/transform/wab.php?modus=opsjoner. Those interested in the challenges and prospects involved in migrating the machine-readable version of the Wittgenstein Nachlass from the customized coding that was developed in the early 1990s to the current XML-TEI standard will also want to learn about a pilot project, to be found at http://wab.aksis.uib.no/wab_sept1914.page . For further discussion of related issues, see Hrachovec 2000 and 2005, McEwen 2005, Pichler 2002, 2005 and 2006.

9. For details, see http://wab.aksis.uib.no/wab_eu-ari-wab.page .

10. For further discussion, see Schulte 2002, Pichler 2004, and Stern 2004.