

Introduction

Version: 05–03–07, Pre-Alpha.

T_EX has become a very important tool in the preparation of critical editions of texts. In particular, E_DM_AC for PlainT_EX, by Lavagnino and Wujastyk, has come to the rescue of many an editor of texts (myself included). In the last two years the L^AT_EX world has produced at least two general-purpose packages for the preparation of critical editions: L_ED_MA_C (a port of E_DM_AC with even additional features) and ednotes. With its extensive and high-level configurability, typographic flexibility, and database capabilities – not to mention its user-friendly and *consistent* interface –, C_ON_TE_XT is perhaps the most natural typesetting platform for a full-featured and easy-to-use user interface for authors and typesetters who need to produce a sophisticated camera-ready critical edition. With the maturation of projects like LuaT_EX and OrientalT_EX well underway, the capacity of T_EX for even more efficient production and configuration of the highest quality of critical texts in multiple languages is almost at hand.

This document outlines the high-level interface to the critical-text editing module for C_ON_TE_XT, called *critT_EXt*. The module is in pre-alpha status and the entire interface can be expected to undergo extensive changes in the coming weeks.

In what follows: Technical terms are **colored**. The first and/or most illustrative mention of a technical term is emphasized, generally by italics.

I acknowledge the critical comments, suggestions and addenda of my collaborator Thomas A. Schmitz in the preparation of this manual. By the time it's done he may very well be its coauthor :-)

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1 Critical Edition, Critical Apparatus

An edition of a given text is a specific version or representation of that text. A *critical* edition enables its readers and users to reconstruct the transmitted material upon which the editor¹ has based his or her version. In order to make this possible, minimum requirements for any critical edition are

1. a list of the witnesses which transmit the text (e.g., manuscripts, papyri, inscriptions, secondary transmission);
2. the text itself in the version which the editor considers accurate, authoritative and definitive;
3. a summary of *variant readings* as they are found in the textual *witnesses*.

Frequently, the editor will describe the *witnesses* and explain their relation to each other in a preface which often contains an explanation of abbreviations and a so-called stemma, a graphical diagram of the genetical relationship between *witnesses*.

The *variants* and other *classes* of textual criticism of a given *critical* text are placed in the *critical apparatus*, traditionally at the bottom of the page below the *main text*. (These and other highlighted terms in this chapter will be defined in **Chapter 2**.)

For any given *passage*, the *apparatus* provides a succinct summary of the editor's research of the editor on the *variants* as they are found in the transmission, as well as interpretations, or other aspects of that given *passage*. In practice, the following *classes* of *apparatus entry* are common:²

- **Testimonia**
This is a summary where the text in question is transmitted, quoted, alluded to, etc.;
- **Similia**
This is a collection of passages with similar wording, thought, etc.;
- **Exegetica**
This is a commentary on selected passages;
- **Critica**
This is generally the most important part of the *critical apparatus* proper, where *variants*, conjectures etc. are recorded.

¹ Of course, critical editions can be established by a group of editors; the singular will be used for convenience.

² For examples of such complex apparatus, see, e.g., B. Gentili and C. Prato, *Poetae Elegiaci* [5] or E. Diehl, *Anthologia Lyrica Graeca* [3].

On the technical level, preparation of the critical edition involves three things:

1. the **main text**;
2. the **apparatus**;
3. the rest of the book.

The critical edition module we are developing is concerned primarily with preparing and typesetting the **apparatus**. This module is meant to be consistent with the rest of **CONTEXT** so that the integration of the **apparatus** with the **main text** and the rest of the book is seamless.

In preparation of the **apparatus** we distinguish two things, *elemental structure* and *typographic structure*:

1. Elemental Structure

Each building block of the **apparatus**, up to and including the **apparatus** itself and relevant parts of the **main text**, constitutes an *element*. Given an element, it performs a distinct **function**. For example, a textual *variant* of a **passage** is one element of the **apparatus**, the source for that *variant* is another.

2. Typographic Structure

Given an element of the **apparatus**, the editor or typesetter must decide where (layout) and how (style) to place that element on the page. Will we use footnotes, endnotes, marginal notes, or a separate volume entirely for the presentation of the **apparatus**? What symbol will we use to separate the *lemma* of a given *entry class* from its associated *comment*?

EDMAC and other critical edition packages for **T_EX** mix *elemental structure* and *typographic structure*. In what follows we try to precisely identify the various components of the *elemental structure* of the critical edition. Then, when we consider typesetting in **CONTEXT**, one may choose a plethora of options for the *typographic structure*. This allows for much more flexibility as we will see. Another advantage of this approach is that it gives us a framework for easy translation of **apparatus** data to and from XML.³

³ The Text Encoding Initiative (TEI) has defined a special XML schema for critical editions. See

<http://www.tei-c.org/release/doc/tei-p5-doc/html/TC.html>

Parts of **Chapter 2** roughly correspond to aspects of the TEI schema for critical editions. That schema is more detailed and less precise than we need; for us at this juncture it is more useful to have a clearer and more precisely defined *elemental structure*. Then, once the *typographic structure* interface is in place, a user can define those elements of the TEI schema he needs how he needs.

A related matter is preparing and typesetting of **parallel** texts. In a bilingual edition, for example, the **main text** of the edition may appear on one side of a given book, and its translation on another.

2 Elemental Structure

2.1 Apparatus

2.1.1 Defining “Apparatus”

The set of all succinct scholarly comments on *passages* (See [Section 2.3](#)) of the *main text* (See [Section 2.2](#)) of a given edition constitutes the *apparatus*, as explained in [Chapter 1](#). The term ‘*apparatus*’ is ambiguous: It may refer to

- The entire set of all succinct scholarly comments with respect to the set of all selected *passages* (See [Section 2.3](#)) of the text: this is the *apparatus in general*, or *apparatus proper*. Given a *main text*, the *apparatus proper* succinctly summarizes – with respect to the entire set of selected *passages* of the *main text* – the editor’s research on the various manuscripts, readings, variants, orthographies, interpretations, sources or other aspects of each *passage*.
- A specific set of comments – one which serves a specific purpose or function – on a specific *passage* of the *main text*. To distinguish this from the *apparatus in general* we will call it the *apparatus entry* (hereafter called just the *entry*). Note that a single *passage* can have more than one *entry*. For example, one *entry* for a given *passage* can be for variant readings, and a separate one can be for commentary on that same *passage*. Given a *passage* of the *main text* an *entry* of that *passage* succinctly summarizes the editor’s research on either the various manuscripts, readings, variants, orthographies, interpretations, sources or some other aspect of that given *passage*.

Henceforth in this manual we will use the word ‘*apparatus*’ to refer to the *apparatus proper* and ‘*entry*’ to refer to the *apparatus entry*. Thus in our terminology the set of all *entries* constitutes the *apparatus*.

2.1.2 Elements of an Entry

Given an *entry* to a given *passage*, it is composed of three main *elements*:

- **Marker**
Given an *entry*, the *marker* is a string of characters that *connects* that *entry* to the appropriate *passage*. Often the marker consists of at least a *line numeral* or *line numeral range*. So if the

passage spans lines 7–8 of the **main text**, then the marker could be ‘7–8’. If the **passage** is marked by some symbol, say ‘†’, one could also include that in the **entry marker**, e.g., ‘† 7–8’. If the **passage** under consideration is part of a heading (e.g., ‘Scene II’ of a play), then there may be no **line numeral** at all.

- **Lemma**

Given an **entry** to a given **passage**, the **lemma** contains a representation of that **passage**. The **lemma** could be an exact duplicate of the entire **passage**, particularly if the **passage** is short. Or it could be an abbreviation of the **passage**, particularly if the **passage** is long. So if our passage is, say,

‘The Earth, as a habitat for animal life, is in old age and has a fatal illness.’

then the **lemma** could be ‘The Earth. . . illness’.

The **elemental structure** of the **lemma** may include, in addition to the representation of a given **passage**, a **witness** to the source used in the **main text**. This is not always necessary, especially when a single source is consistently used in the **main text**.

- **Comment**

Given an **entry** to a given **passage**, a **comment** is a note to the **passage** that succinctly summarizes the editor’s research on that **passage**. A single **entry** may have a multiplicity of **comments**, each separated appropriately (see **Subsection 2.1.4**).

Given a **comment**, its general **elemental structure** may include a **witness** to that **comment**; this is generally indicated with a simple symbol or very short string called a **siglum** (plural **sigla**). It may also include a secondary note on the substance of the **comment** or that of the **witness** by the editor. We will call such a note a **remark**. Thus the **elemental structure** of a **comment** generally consists of the following **attributes**:

- **Witness**

- **Core Comment**

This is the core of the **comment** which contains the main observation of the editor about the corresponding **passage**

- **Remark.**

Of course, it is not necessary to use all three, and other **attributes** can be defined as well.

In general an **entry** looks like

<marker><lemma><comment>

In general a **comment** has at least one string with the **elemental structure**

<witness><core comment><remark>

Altogether we have, for our general *entry*

<marker><lemma><<witness><core comment><remark>>

Each of these elements may need particular typographic attention, including *punctuation*; perhaps the *remark* will be placed in a footnote to the *entry*; this *remark* would then constitute a *subentry* to the main *entry*, with its own

<marker><lemma><comment>

structure. This raises another distinction, discussed next.

2.1.3 Main Apparatus and Subapparatus

As we will mention in **Subsection 2.3**, a given *passage* in the *main text* may have more than one *entry*. Consider a single *passage* that corresponds to three *entries* in the *apparatus*. Let's call them *entry-A*, *entry-B*, and *entry-C*. The reason for three *entries* is that each *entry* serves a unique *function*. For example, the *function* of

- *entry-A* may be to record *variant readings* of a given *passage*. For example, a given *passage* in the *main text* may read 'as a habitat for animal life'. In the *comment* the *variant reading* could be 'as a home for animal life';
- *entry-B* may be to record source references or *testimonia* for where the *passage* in question is transmitted, quoted, alluded to, etc.;
- *entry-C* may be to provide a commentary or *exegetica* on a given *passage*.

Now given a *function A* for *entry-A*, that same purpose may be the case for another *entry* to another *passage*. Let *entry-A*=*entry_nA*. Then an *entry* to another *passage* with the same purpose as *entry_nA* will be *entry_{n+1}A*, and so forth.

Now then:

entry_nA, *entry_{n+1}A* and *entry_{n+2}A* belong to *class-A*;

entry_nB, *entry_{n+1}B* and *entry_{n+2}B* belong to *class-B*;

entry_nC, *entry_{n+1}C* and *entry_{n+2}C* belong to *class-C*;

So to be more precise: In normal typesetting of critical editions, each *entry_nA* belongs to *apparatus class-A*, and so forth.

Together, *class-A* *class-B*, and *class-C* (and more perhaps), each with respect to *passages* of the *main text*, form what I call the *main apparatus*.

A classical way of setting this up typographically is to give each *class* its own footnote *series* (see [Chapter 3](#)).

Let's consider another scenario. It may be that, within a given *comment* of a given *entry*, the editor may want to make a *remark* about something particular to something in that *comment*. If, as alluded to above, that *remark* also has a

<marker><lemma><comment>

structure, then the original *comment* itself now becomes a *subpassage* to a *subentry*. The set of all *subentries* to *comments* I call the *subapparatus*.⁴

To summarize, we distinguish *main apparatus* and *subapparatus*:

- **Main Apparatus**

Each *entry* in the *apparatus* whose *lemma* is taken from a *passage* of the *main text* we will call a *main entry*. The set of all *main entries* in the *apparatus* minus any *subentries*, constitutes the *main apparatus*.

- **Subapparatus**

Each *remark* with its own

<marker><lemma><comment>

structure we will call a *subentry*. The set of all *subentries* in the *apparatus* constitutes the *subapparatus*.

The *subapparatus* forms a distinct typographical unit, whose *subentries* could take the form of footnotes to *entries* in the *main apparatus*.⁵

2.1.4 Classification of Entries

The *entries* to the *main apparatus* may be classified in different ways. The classification of a particular *entry* is generally a function of the *class* of *comment* it contains. The *class* is generally reflected directly in the *core comment*. An editor can define any number of *classes*; we mentioned three types of *class* in [Subsection 2.1.3](#). It is up to the editor to define the most appropriate typology for his purposes.

⁴ We could also say *metaentry* or *metaapparatuses*, in analogy with the object-language/metalinguage (or use-mention) distinction.

⁵ If the *main apparatus* takes the form of footnotes to the *main text*, then such a *subapparatus* would employ footnotes to footnotes.

Given a *comment class*, it may also have one or more *groupings*. For example, the difference between a *variant reading* and the *main text* may be just a matter of *variant* orthography, or it could be quite substantial, perhaps even involving a change in meaning. In a given *entry* corresponding to a distinct *class*, the *comments* for that *entry* may be organized into separate *groupings*. Each *grouping* contains at least one *subcomment*, with elemental structure

<witness><core comment><remark>

just like that of *comment*.

It is up to the editor to decide whether the research material is best served by listing two or more *groupings* separately under a single *reading-class entry* for a given *passage*, treating them as distinct *groupings*, or organizing them some other way. For example, a single *comment* with three *groupings* may look like

<comment>=<<groupingA><groupingB><groupingC>>

If each *grouping* has, say, two *subcomments*, then the following is equivalent:

<<comment1A comment2A><comment1B comment2B><comment1C comment2C>>

where A stands for *grouping A* and so forth. Recall that each *subcomment* may also have a three-part structure as well.

Another way of organizing is to treat *subcomments* like *remarks* (see [Subsection 2.1.2](#)). So, say, *grouping B* could be treated as a *subentry* in the *subapparus*.

2.1.5 Placement of the Apparatus

Each *entry class* of the *apparatus* is usually placed in a *footnote series*, but it may be placed in a margin, an endnote, or collected and printed as a separate volume. We discuss this kind of matter in [Chapter 3](#). The point for now is to consider the *elemental structure* independent of layout and typographical considerations.

2.2 Main Text

The *main text* is the version of the text that has been determined by the editor to be accurate, authoritative and definitive in some sense. It is the text that is intended by the editor for the perusal of the general reader of the text. It is also the text subject to textual criticism in the *apparatus*.

2.3 Passages

We distinguish between *passage* and *transpassage*:

- **Passage**

A given *passage* of the main text is a single, continuous selection of the *main text* subject to textual criticism in the *apparatus*. Each *entry* in the *apparatus* corresponds to exactly one *passage*, although one *passage* may correspond to any number of *entries*, usually one *entry* per *comment class* (so one entry for *variants*, one for *testimonia*, etc.).

Given a *passage*, either its exact copy or abbreviation is passed to the *apparatus entry*.

- **Transpassage**

Sometimes a given *passage* for one *entry* may overlap with the *passage* for another *entry*. In some cases a given *passage* may completely overlap a second one (nested). In other cases neither *passage* completely contains the other (unnested). This can create problems for future typesetting, where it is not trivial to write macros with overlapping but unnested arguments. In anticipation of this issue we introduce the notion of *transpassage*. A *transpassage* is a continuous, complete string of possibly unnested *passages*, within which the individual *passages* can be identified and operated upon in through the typographical interface.

This is just an idea; maybe Hans (or Taco, or Thomas. . .) has a better one.

2.4 Source Details

2.4.1 Sigla

As we mentioned in **Subsection 2.1.2**, the *elemental structure* of a *comment* normally includes a *witness*. The *witness is usually* represented by a symbol or short string of symbols called a *siglum*. The *siglum* is basically a kind a citation (as in a traditional bibliography).

2.4.2 Source-text Witness Lists

Usually the front matter of a critical edition includes a *witness list*. The *witness list* is analogous to a bibliography, though its format is somewhat different.

As in the bibliography module, we want a *witness* database that both specifies the *siglum* as well as contain the bibliographic information about the *witness*.

Given a *witness list*, it may contain more than one *type* of *witness*. There may be *fragmentary witnesses*, *witnesses* in a particular library, and so forth. The *witness* entry in the database should include a *type attribute* such that the typeset *witness list* will be organized according to that type.

Future developments of `critTEXt` may attempt to define a database format which would allow us to treat the *witness list* like a list of bibliographical references. However, it is difficult to think of such specifications in advance: different philological and scholarly traditions have vastly differing requirements for such lists, and editions of different texts demand special considerations. Hence, we wish that such specifications will arise out of concrete editions prepared with `critTEXt`, but will not discuss this matter here.

2.5 Summary

Here is a summary of the *elemental structure* of the main parts of a critical edition:

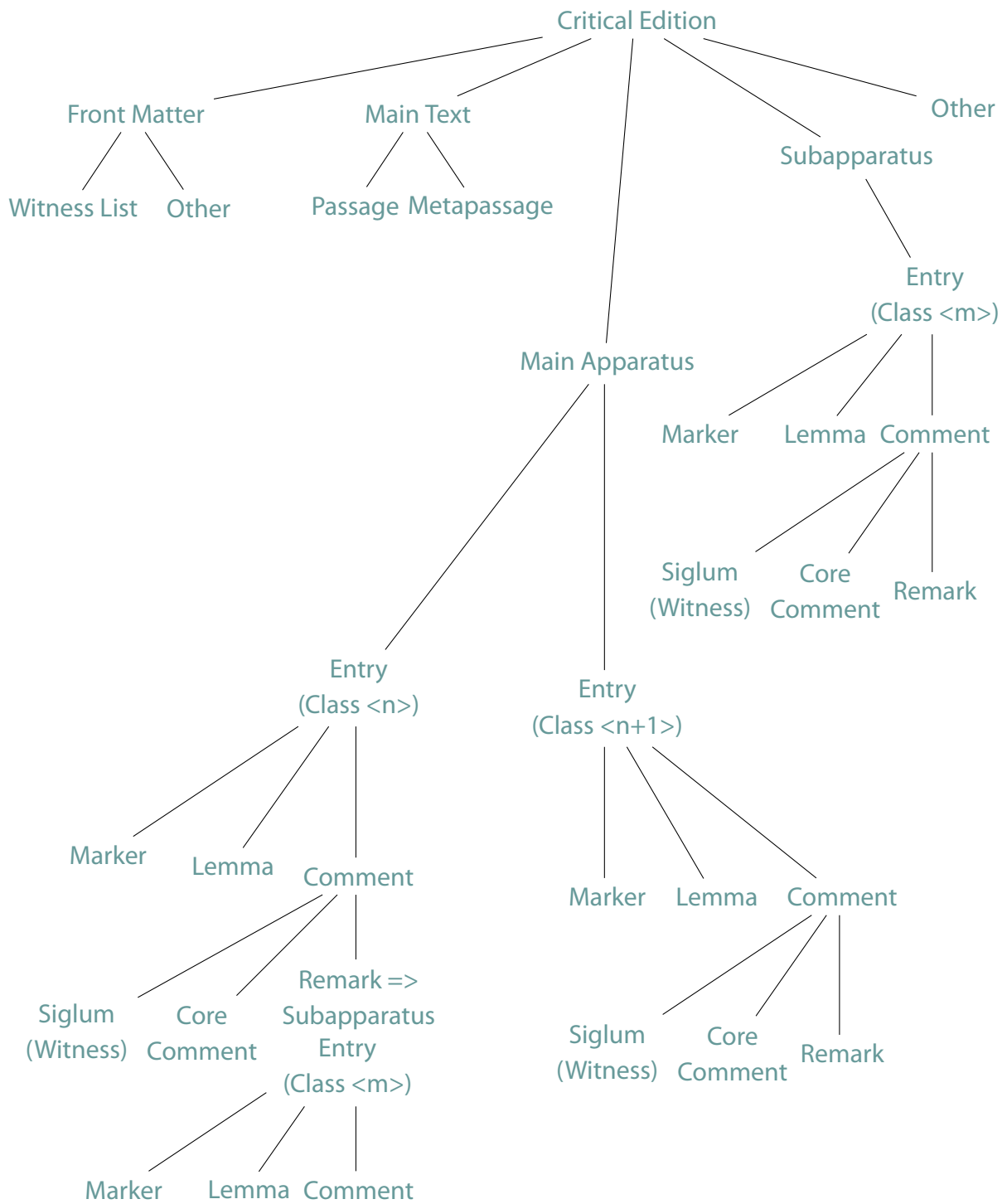


Figure 2.1 The Elemental Structure of a Critical Edition.

3 Typographical Structure

In this chapter we discuss the **typographic structure** of the **elements** of the edition. Based on our previous discussion we can divide the typographical task into three areas:

1. Main Text

Under this heading we consider the layout and typographical configuration of the **main text** insofar as it relates to keying **passages** of the **main text** to the **entries** of the **apparatus**.

2. Entry

Under this heading we consider the layout and typographical configuration of the **elements** of the **entry**, viz., the **marker**, **lemma**, **comment**, **siglum**, **core comment**, and **remark**.

3. Apparatus

Under this heading we consider the layout and typographical configuration of the **apparatus** as a whole, including the layout of each **entry class** as a whole.

Let us consider each of the above in turn.

3.1 Main Text

3.1.1 Marginal Numerals

The relationship of the **main text** to the **apparatus** is generally accomplished through **marginal numerals**. Consider **Figure 3.1**. There are three general **classes** of **marginal numeral**:

1. Line Numeral

These are the numerals on the inside-right of the left margin of **Figure 3.1**.

2. Paragraph Numeral

These are the numerals in the middle of the left margin of **Figure 3.1**.

3. Critical-Section Numeral

Finally, the **critical-section numerals** are towards the left of the left margin of **Figure 3.1**.

The immediate function of **line numerals** and **paragraph numerals** is obvious: each **class** counts lines and paragraphs respectively. As for **critical-section numerals**: Note that we distinguish **critical section** and **text-section**:

1	1	1	The Earth, as a habitat for animal life, is in old age and has a fatal illness.
		2	Several, in fact. It would be happening whether humans had ever evolved
		3	or not. But our presence is like the effect of an old-age patient who smokes
		4	many packs of cigarettes per day . and we humans are the cigarettes.
	2	5	The Earth, as a habitat for animal life, is in old age and has a fatal illness.
		6	Several, in fact. It would be happening whether humans had ever evolved
		7	or not. But our presence is like the effect of an old-age patient who smokes
		8	many packs of cigarettes per day . and we humans are the cigarettes.
2	3	9	Had our solar system included two suns, the problem would have involved
		10	three bodies (the two suns and each planet), and chaos would have been
		11	immediately obvious. Planets would have had erratic and unpredictable
		12	orbits, and creatures living on one of these planets would never have been
		13	able to perceive the slightest harmony. Nor would it have occurred to
		14	them that the universe might be ruled by laws and that it is up to man's
		15	intellect to discover them. Besides, it is not at all obvious that life and
		16	conscience could even emerge in such a chaotic system.

Figure 3.1 Line, Paragraph, and Margin-Section Numerals

- **Margin Section**

The **critical section** divides the main text but there is no paragraphed heading and it can occur anywhere inside of a paragraph without disturbing the linespacing etc. You could even call it a *virtual* section heading.

The **critical-section numerals** may be used to count certain aspects of the **main text**, e.g, **folios** of the primary manuscript used to establish the base of the **main text**.

- **Text Section**

These are just the usual text headings (part, chapter, heading, etc.).

These three classes of **marginal numeral** should cover the needs of the bulk of critical editions. The editor, however, will also be able to define his own **class** of **marginal numeral**. For example, classical critical editions often provide section numbers, pagination, or foliotation of earlier, canonical editions, for which more than one **critical-section numeral** may be necessary. In general, then, let's analyze the **typographic structure** of **marginal numerals** in terms of *marginal numeral classes*.

Each **marginal numeral class** will need its own setup. This includes configurations of things such as

- **Location**
This includes options for placing the entire **marginal numeral class**. It can be in the left margin, the right margin, and the inner or outer margins of a double-sided document. For screen documents one may want to use the left or right edge, and so forth.
- **Criterium**
What are we counting? A **marginal numeral class** may count lines, paragraphs, or **critical sections** (as we have already described), so that's three options.
- **Stanza**
In cases like poetry we need an option to count lines differently. Given a means of distinguishing and tagging lines of poetry, the stanza mode will count each tagged line.
- **Way**
Given a **marginal numeral class**, how often do we want to automatically reset the counting? Every page, every paragraph, every **critical section**, or every **text-section**? We should also be able to manually reset as well when necessary.
- **Increments (Stepping)**
We do not usually want to count every, e.g., **line numeral**. So we can count in increments of, say, every five lines instead of every line.
- **Conversion**
For example, we may want to use Arabic numerals for **line numerals**, Roman for **paragraph numerals**, and a manually defined conversion (e.g., XY1a, XY1b, XY2a, XY2b. . .) for **critical-section numerals**.
- **Auto**
In accordance with the criterium, `CONTEXT` will *automatically* number lines, paragraph, or text sections. One can also define a marginal that is counted as though it were a line, paragraph, etc. (For example, an editor could typeset each **critical section** as a single paragraph). But sometimes one needs to do things manually, and set `auto` to `none`. In the latter case the user has to declare each occurrence of the marginal numeral (though not necessarily each numeral) manually. One example is **folios**: You have to tell the **main text** where they must occur but the numeral increment will be done automatically. In some cases the editor may need to override the automatic mechanism.
- **Font Style**
Choose your numeral **class'** font and style. Useful for selecting, independent of the **main text**, things like superior, inferior, **bold**, **italic**, upright, or oldstyle numerals.
- **Width**
Each **marginal numeral class** has its own **margin space**; each **margin space** has a particular width. See **Figure 3.2**
By default we have three margin spaces

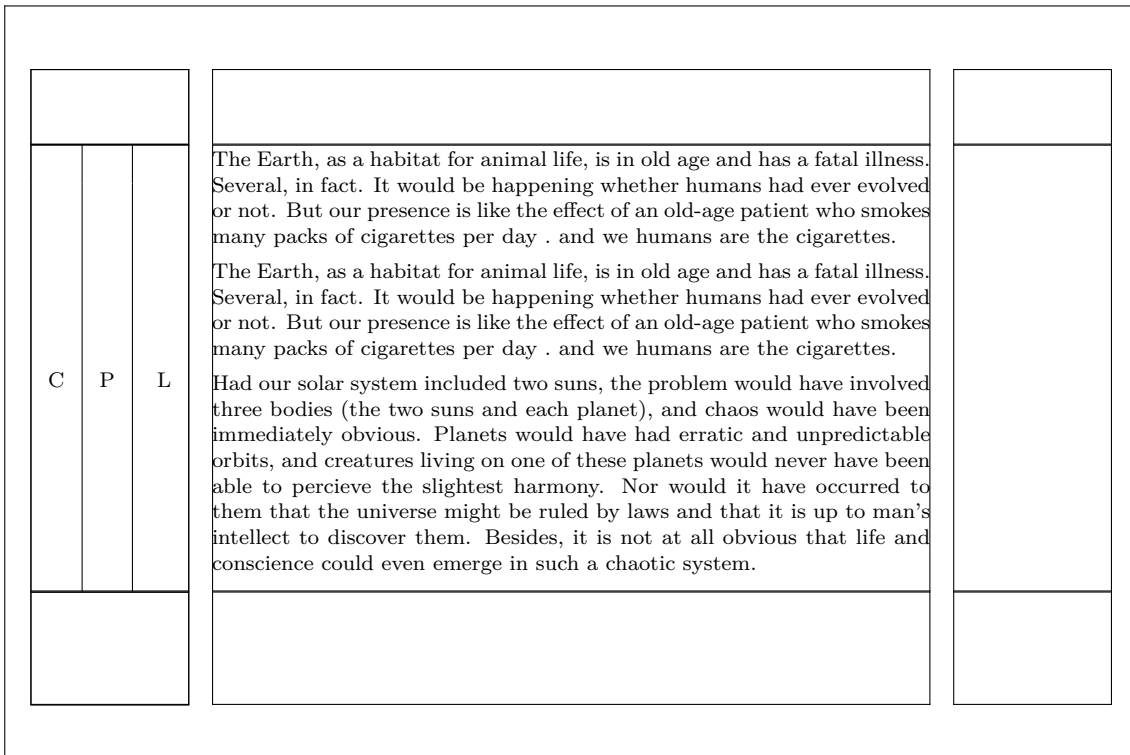


Figure 3.2 Margin Spaces: Critical (C), Paragraph(P), and Line (L).

- **Distance**

This gives us the distance of the **margin space** from the closest edge of the **main text**. Among other things this option allows us to control the relative distances of the different **margin spaces** from one another. Of course spaces can (and often do) overlap as well.

(Maybe there is a way to, given a set of **margin spaces**, set up their relative distances more directly.)

- **Alignment**

Within a given **margin space**, the numerals may be aligned in the middle, right, or left of that space.

- **Prefixes And Suffixes**

Given a numeral, it may be given a prefix or suffix, e.g., '-2-'.

In some case one may want to temporarily pause marginal numbering and then resume it (see **Figure 3.3**). This should be automatic, that is, when marginal numbering is turned back on it should remember from where it left off.

1	1	The Earth, as a habitat for animal life, is in old age and has a fatal illness.	
	2	Several, in fact. It would be happening whether humans had ever evolved	
	3	or not. But our presence is like the effect of an old-age patient who smokes	
	4	many packs of cigarettes per day . and we humans are the cigarettes.	
		Had our solar system included two suns, the problem would have involved	
		three bodies (the two suns and each planet), and chaos would have been	
		immediately obvious. Planets would have had erratic and unpredictable	
		orbits, and creatures living on one of these planets would never have been	
		able to percieve the slightest harmony. Nor would it have occurred to	
		them that the universe might be ruled by laws and that it is up to man's	
		intellect to discover them. Besides, it is not at all obvious that life and	
		conscience could even emerge in such a chaotic system.	
2	5	The Earth, as a habitat for animal life, is in old age and has a fatal illness.	
	6	Several, in fact. It would be happening whether humans had ever evolved	
	7	or not. But our presence is like the effect of an old-age patient who smokes	
	8	many packs of cigarettes per day . and we humans are the cigarettes.	

Figure 3.3 Line Numbering: Pause and Resume

3.1.2 Passages

When marking a given **passage** for an **entry**, we need to configure whether and how that **passage** is marked. Now it may be that just giving the **marginal numeral** range in the **entry marker** is enough (so there is no mark in the **main text** at all). But one could also get fancy. For example, if the **passage** in question is entered in **entry class-A**, maybe we want to mark it (and each other **passage** in **entry class-A**) with a dagger ('†'); for **entry class-B**, use a star ('*'). If we want to get really fancy, use an entire conversion per page per **entry class**. So if a single page has four **passages** entered under **entry class-A**, we mark them with 'i', 'ii', 'iii', and 'iv' respectively; for **entry class-B** we use '*', '†', '‡', and '**'; and so forth.

We will call the (optional) mark used for the **passage** a **passage symbol**, or **symbol** for short. When 'symbol' is colored we are using it to mention the **passage symbol**.

3.1.3 Utilities

On any page of the **main text** one can declare the **marginal numeral** range. This gives the value or value-range of the **critical-section numerals**, the **paragraph numerals**, and/or the **line**

numerals. This is useful for things like endnotes or header information (above the translation block bilingual text for example). This utility should be configurable, for example:

- **Criterion**
Which **marginal numeral** range(s) do we want?
- **Separator, Prefix and Suffix**
How do we punctuate the range?

3.2 Entry

3.2.1 Individual Entry

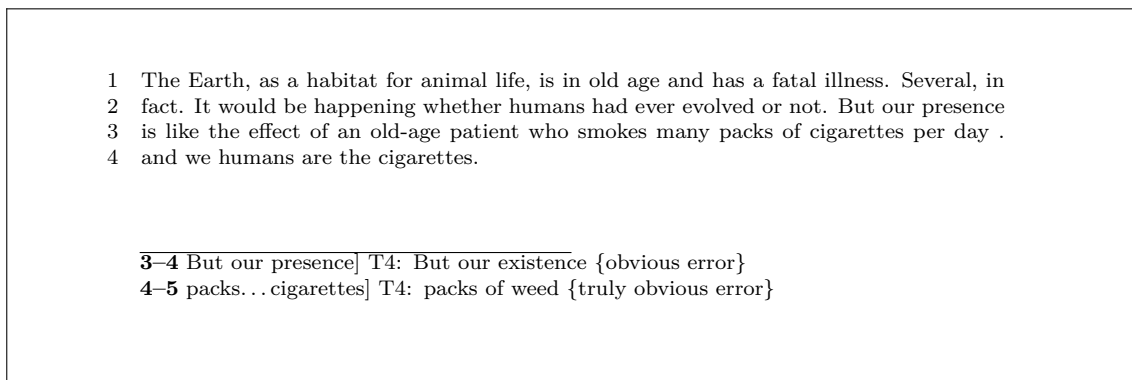


Figure 3.4 Basic Entry Structure

We now consider the **entry**. **Figure 3.4** illustrates the basic structure we discussed in **Chapter 2**. There are two entries in this example:

In the first entry we have a **marker** ('3-4'), a **lemma** identical to the **passage** of the **main text** ('But our presence'), and a **comment** ('But our existence {obvious error}'). The second example is structurally identical to the first except that the **lemma** in this case is an abbreviation of its respective **passage**.

The **comment** in each example contains a **siglum** ('T4', plus a symbol separating the **siglum** from the following **core comment** (':')); a **core comment** ('But our existence', 'packs of weed'); and a **remark** ('{obvious error}', '{truly obvious error}', which each include a prefix and suffix (left and right braces)). Let us discuss some typographical niceties of each element:

- **Marker**

This is the device that keys the **passage** of the **main text** to the **entry**. The **marker** can use a number of the configuration options listed on **page 17**, such as

- **Location**

In this case, do we want the marker flush with the block edge, in the margin, indented?

- **Criterion**

Do we want the **passage symbol** reproduced? Which **marginal numeral** range do we want to reproduce? Sometimes `none`. The **line numeral** range should be the default.

- **Font Style**

- **Distance**

This is the distance between the **marker** and the rest of the **entry**.

In addition we need the option

- **Direction**

In right-to-left documents we need the numeral range typeset from right-to-left, e.g. 12–13 **Umm, shouldn't that be 13–12?**

- **Lemma**

Important options include

- **Criterion**

Here `CONTEXT` should automatically create the **lemma** by gobbling, say, everything after the second word in the passage, everything before the last word, in the passage, and placing a separator (configurable of course) in between. Of course the **lemma** may also be identical to the **passage**.

- **Separator**

See above. The ellipsis '...' is usually standard; will be the default.

- **Font Style**

- **Prefixes and Suffixes**

The suffix ']' is usually standard; will be the default.

- **Distance**

This is the distance between the **lemma** and the **comment**.

It should also be noted that the **lemma** can be empty; this is the tradition of the so-called "negative **apparatus**". Consider the **passage**,

'The Earth, as a habitat for animal life, is in old age and has a fatal illness.'

Given the sentence above, a negative apparatus could record a **variant reading** thus (this is configurable): "sickness A: B" The user would read as "manuscript A has the variant 'sickness,' the reading 'illness,' which was adopted into the text, is found in manuscript B."

- **Comment**

We treat the configuration of each **element** of the **comment** in turn:

- **Siglum**

This is a special form of citation; its configuration is mainly a bibliography-module issue. Of course it can typeset naïvely, but for demanding editions it makes more sense to tie it into a bibliographic database with which one can generate a complete bibliography, and perhaps for other purposes as well.

- **Core Comment**

Basic configuration of this **element** includes

- ★ **Font Style**

- ★ **Prefixes and Suffixes**

Maybe a simple period suffices. But the default should be empty.

- **Remark**

Unless the **remark** is a **subentry**, it uses the same configuration options as **core comment**. Otherwise it is treated like a regular footnote. More on this point in our discussion of the typographical configuration of the **apparatus** as a whole.

3.2.2 Entry Class

For each **entry class- $\langle n \rangle$** , the set of all **entries** per page per **class** should form a list, much the way the set of all **text-sections** of a normal document form a list, which may then be placed. This is not a typographical issue per se but this notion of list will be used in our discussion of the **apparatus** and its configuration.

3.3 Apparatus

3.3.1 Considering the Main Apparatus as a List

The **main apparatus** (see **Subsection 2.1.3**) for a given page of the **main text** consists of all **entries** to that page of **main text**. These **entries** are organized according to **entry classes**.

In this model, the **main apparatus** for a single page is like a book with parts: each part contains a set of several chapters. Let each part have its own table of contents. Then the table of contents for a given part is constructed from the set of chapter headings unique to that part.

So each part corresponds to an **entry class**; each chapter heading corresponds to an **entry** within that **class**; and each table of contents (one per part) corresponds to the **main apparatus** for a given page.

Put another way, the **main apparatus** for a given page is like a set of tables of contents. If there is one **entry class** on the page, there will be one table of contents. If there are three **entry classes**, there will be three tables of contents.

single column	<p>1 The Earth] T4: The Moon {truly obvious error}</p> <p>1-2 Several... fact] T3: A few... fact {Reflects earlier draft of the author}</p> <p>3-4 But our presence] T4: But our existence {obvious error}</p> <p>4-5 packs... cigarettes] T4: packs of weed {truly obvious error}</p>	
paragraph	<p>1 The Earth] T4: The Moon {truly obvious error} 1-2 Several... fact]</p> <p>T3: A few... fact {Reflects earlier draft of the author} 3-4 But our</p> <p>presence] T4: But our existence {obvious error} 4-5 packs... cigarettes]</p> <p>T4: packs of weed {truly obvious error}</p>	
double-column centered column-width=4cm	<p>1 The Earth] T4: The Moon 3-4 But our presence] T4: But</p> <p>{truly obvious error} our existence {obvious error}</p> <p>1-2 Several... fact] T3: A 4-5 packs... cigarettes] T4: packs</p> <p>few... fact {Reflects earlier draft of weed {truly obvious error}</p> <p>of the author}</p>	

Figure 3.5 Typesetting the Main Apparatus

The **apparatus** for the entire book, then, corresponds to a general set of sets of tables of contents. Just as one may typeset a table of contents in different ways, one may set the **main apparatus** for a given page in different ways. See **Figure 3.5**. Here we have three **entry classes**, each typeset in a different way.

The **main apparatus** for a given page may be placed anywhere on the page. Following the standard, by default it is placed in the footer, although in principle it can be placed anywhere on the page. For example, in a screen document one may want to place it in the right edge.

3.3.2 Options for the Main Apparatus

Once the options for the **elements** of each **entry** of the **main apparatus** have been determined (see **Section 3.2**), global options for each **entry class** as a whole remain to be determined:

- **Rule, Separator**

By default, each **entry class** is prefaced with a one-half text-width horizontal rule. This may be turned on and off. In addition one may define one's own separator.

- **Repeater**

In a given **entry class**, if two or more succeeding entries have the same **line numeral** range, then the redundant occurrences of that range will be replaced with a '||' (default) or whatever symbol desired. Of course, this behavior can be turned off entirely (so redundant ranges will be typeset).

- **Before and After**

One can specify, e.g., the amount of whitespace needed before or after each **entry class**.

- **Alternative**

See **Figure 3.5** for examples. One may choose single column **entries** (the default), paragraphed **entries**, or $\langle n \rangle$ -column **entries** ($n=2$ shown here).

- **Width**

The width of the **entry class** may be greater or less than the textwidth of the **main text**.

3.3.3 Options for the Subapparatus

The **subapparatus** consists mainly of footnotes to the **main apparatus**. All of the options that apply to footnotes may apply to the **subapparatus**. A few default defined footnotes will be available. See **Figure 3.6** for examples.

For more fancy applications an **entry class** can have **line numerals** and hence the **subapparatus** will need a full

$\langle marker \rangle \langle lemma \rangle \langle comment \rangle$

structure. Consider an **entry class** that consists of a line-numbered commentary on the **main text**. Notes on that commentary will be handled just like notes on the **main text**.

3.4 Parallel Texts: a Consideration

Finally we can briefly consider *parallel* texts. In addition to a **main text** and an **apparatus** (main and sub), there is now an added **element**, which we will call the **bi-text**. Given, e.g., a

	<p>1 The Earth] T4: The Moon {truly obvious error}</p> <p>1–2 Several. . . fact] T3: A few. . . fact*</p> <p>3–4 But our presence] T4: But our existence {obvious error}</p> <p>4–5 packs. . . cigarettes] T4: packs of weed[†]</p> <hr/> <p>1 The Earth] T4: The Moon {truly obvious error} 1–2 Several. . . fact] T3: A few. . . fact {Reflects earlier draft of the author} 3–4 But our presence] T4: But our existence {obvious error} 4–5 packs. . . cigarettes] T4: packs of weed*</p> <hr/> <p>* Reflects earlier draft of the author</p> <p>† A truly obvious error, though I do not know whether or not Ward smoked weed</p> <hr/> <p>* A truly obvious error, though I do not know whether or not Ward smoked weed</p>	

Figure 3.6 Typesetting the Subapparatus

bilingual critical edition, we may have, e.g., the **main text** on the left page and the **bi-text** on the right. The **bi-text** may also have a **biapparatus** and so forth.

This issue needs more consideration and we will save that for later. One thought: Although the number of line numerals of the **main text** and the number of line numerals of the **bi-text** will hardly ever precisely match, the number of paragraphs or **critical sections** could. This could provide a basis for comparing and setting the **main text** and **bi-text** side-by-side.

4 Proposed High-Level Interface for CONTEXT

Based on the above analysis we propose a user interface consisting of a small set of commands. These should prove sufficient to handle the bulk of the relevant **typographic structure** of a critical edition. We classify the interface into five components:

- **Marginal Numerals**
- **Individual Entry**
- **Entry Class**
- **Apparatus**
- **Utilities**

4.1 Marginal

A **marginal numeral class** is defined by

```
\definemarginal[name]
```

which produces the commands

- `\startnamenumbering \stopnamenumbering`
- `\namemarginspace`

This may be used for, e.g, to declare a **critical section**, with each numeral incremented automatically;

- `\setnamenumber \advancennamenumeral`

This may be used to override the automatically generated **margin space** numeral.

So `\definemarginal[line]` produces the commands

```
\startlinenumbering \stoplinenumbering
```

And `\definemarginal[folio]` produces

```
\foliomarginspace, which allows one to declare a new manuscript folio page.
```

Marginal numbering is set up with

```
\setupmarginal[name] [...] [..., ..., = ..., ...]
```

or

```
\setupnamenumbering [...] [..., ..., = ..., ...]
```

For our list of options see **Table 4.1**. Most of these will be clear, especially with reference to **Subsection 3.1.1**. Let's explain a few of the not-so-obvious options:

...	reset pause resume lock unlock, first, last, all, none
location	rightmargin leftmargin <u>outermargin</u> innermargin intext rightedge leftedge outeredge inneredge insideedge
criterium	<u>line</u> subline paragraph criticalsection textsection [more?]
stanza	<u>latin</u> arabic
way	<u>page</u> paragraph criticalsection textsection
step	<i>number</i>
conversion	<u>numbers</u> characters Characters romannumerals Romannumerals text <i>userdefined</i>
auto	<u>on</u> off
increment	<u>yes</u> no
style	<u>normal</u> bold slanted boldslanted type cap small... <i>command</i>
width	<i>dimension</i>
distance	<i>dimension</i>
align	left right middle outer <u>inner</u>
prefix	<i>text</i>
suffix	<i>text</i>
start	<i>number</i>
color	<i>color</i>

Table 4.1 Options for `\setupmarginal`.

- **Lock and Unlock**

For example, `\setupmarginal[line][lock]` or `\setuplinenumbering[lock]` locks the current line number in place so each subsequent typeset line carries the same line numeral until `unlock` is declared.

If we do

```
\setuplinenumbering[lock,all]
```

the locked line numeral will be repeated on every line; if we do

```
\setuplinenumbering[lock,first]
```

only the first will be typeset;

```
\setuplinenumbering[lock,first,last]
```

both first and last will be typeset. There is also a `none` option.

- **Subline**

Sublines: 1.1, 1.2, 1.3, 1.4 etc.

Instead of defining separators, etc. it's better to have predefined conversions that may be modified and redefined if necessary.

- **Stanza**

For, e.g., a Latin poetry line that spans more than one typeset line and which ends in `\verseline`, that poetry line will be counted as one line;

Arabic-script poetry is generally counted as one line spanning two equal-width columns, e.g.

Here is the first line 1a

Here is the first line 1b

Here is the second line 2a

Here is the second line 2b

So with `stanza=arabic` and a `\verseline` at the end of each column `CONTEXT` will count columns in addition to line numerals.

To set automatic 2-column stanza counting you can declare

```
\autoverseline[on,arabic],\autoverseline[off]
```

- **Auto**

If `auto=none` then the editor must manually declare each occurrence, and the numbers will be incremented automatically (just like text-section headers). For example

```
\foliomarginspace[X1a]
```

will place 'X1a' in the folio **margin space**; the next declaration

```
\foliomarginspace
```

(with no optional argument) will automatically place 'X1b' in the folio **margin space** (where the appropriate conversion has been defined by the user).

If one sets `increment=off` then every `\foliomarginspace` numeral would have to be declared manually.

Further, we can use `\namemarginspace` like a sectioning command for marginal notes:

```
\foliomarginspace[X1a]{text}
```

One could leave out the folio and just make a marginal comment:

```
\foliomarginspace[X1a]{text}
```

- **Prefix and Suffix**

'prefix' and 'suffix' are more neutral than 'left' and 'right'. The problem is that, when `TEX` switches to right-left mode, all left options become right and all right options become left. Thus we need more abstraction in our definitions so that RL or mixed LR-RL typesetting does not get too confusing.

Sometimes you may want to override the numeral placed in the **margin space**: for this you have

```
\setnamenumeral[]
```

```
\advancenamenumeral[]
```

e.g., `\setlinenumeral[],\advancelinenumeral[]`

These change both the marginal numeral as well as the numeral passed to the **entries**. To change only the line number or line-number range passed to the notes, see [Section 4.4](#).

4.2 Entry Class

4.2.1 Tagging the Passage

In the course of the **main text**, one enters a command sequence to tag the **passage** and operate upon it in the **main entry**. The basic form of the **passage-main entry** command sequence is

```
\startpassage
  passage
  \entryclass [class-m] [lemma] [siglum] {corecomment} [remark]
\stoppassage
```

There may be more than one class of entry per **passage**, e.g.

```
\startpassage
  passage
  \entryclass [class-m] [lemma] [siglum] {corecomment} [remark]
  \entryclass [class-n] [lemma] [siglum] {corecomment} [remark]
\stoppassage
```

To explain: Given a **passage** in the **main text** it is tagged by

```
\startpassage
\stoppassage
```

such that typing, e.g.

```
Here is some text.
\startpassage
  Here is a passage.
\stoppassage
Here is some text.
```

in the **main text** produces exactly

```
Here is some text. Here is a passage. Here is some text.
```

in the **main text**.

4.2.2 Main Entry Class

An **apparatus main entry class** is defined by

```
\defineentryclass [name]
```

which produces the commands

- `\nameclass`
- `\entryclass [name]`

These two commands are equivalent.

So, for example, `\defineentryclass [variant]` produces the equivalent commands

```
\variantclass
```

and

```
\entryclass [variant]
```

The `\nameclass` command takes up to four arguments. So for `\variantclass` we have, by default:

```
\variantclass [lemma] [siglum] {corecomment} [remark]
```

We can also do

```
\entryclass [variant] [lemma] [siglum] {corecomment} [remark]
```

If the **lemma** option is omitted or left blank, it may be created automatically (as configured in our setups; the default is to just reproduce the respective **passage**). If the **siglum** or **remark** option is omitted or left blank, it is ignored. So a minimum declaration is

```
\variantclass {corecomment}
```

For example:

The Earth, as a habitat for

```
\startpassage
```

```
    animal life\variantclass {human life}
```

```
\stoppassage%
```

```
, is in old age and has a fatal illness. Several, in fact.
```

This will leave the **passage** as is, use an exact replica of the **passage** as the **lemma**, and, after the **marker** and **lemma**, produce the comment:

1 animal life] human life

The `lemma` option takes priority over the `siglum` option. So

```
\variantclass [T] {corecomment}
```

will make the 'T' a `lemma`. If you want the `siglum` you must at least do

```
\variantclass [] [T] {corecomment}
```

If you want a `lemma` that does not correspond to any specific `passage`, then you can, e.g.

```
\startpassage
  \variantclass [lemma] {corecomment}
\stoppassage
```

The `main entry class` is setup by

```
\setupentryclass [...] [...,...=...,...]
```

with the most relevant options described in [Table 4.2](#). See [page 21](#) for explanation of these options.

...	<i>class</i>
entry	flush indent
entrysize	<i>bodyfont command</i>
passagesymbol	yes no
symbolconversion	<u>numbers</u> characters Characters romannumerals Romannumerals text <i>userdefined</i>
markerlocation	inmargin margin <u>intext</u> edge indent
marker criterium	all <u>line</u> paragraph criticalsection textsection
markerstyle	<u>normal</u> bold slanted boldslanted type cap small... <i>command</i>
markerdistance	<i>dimension</i>
direction	<u>rl</u> lr
lemmacriterium	<u>passage</u> first <u>firstlast</u> second secondlast firstsecond secondfirst <i>userdefined [a la conversion] negative</i>
lemmaseparator	text {default:...}
lemmastyle	<u>normal</u> bold slanted boldslanted type cap small... <i>command</i>
lemmaprefix	text
lemmasuffix	text {default: '[' in lr, '[' in rl mode}
lemmadistance	<i>dimension</i>
commentstyle	<u>normal</u> bold slanted boldslanted type cap small... <i>command</i>
commentprefix	text
commentsuffix	text
remarkstyle	<u>normal</u> bold slanted boldslanted type cap small... <i>command</i>
remarkprefix	text
remarksuffix	text

Table 4.2 Options for `\setupentryclass`.

The `main entry-class` commands can be nested:

```

\startpassage
Here is a
  \startpassage
    passage of text
    \entryclass
      [class-m] [lemma] [siglum] {corecomment} [remark]
  \stoppassage
with nested entries.
\entryclass[class-m] [lemma] [siglum] {corecomment} [remark]
\stoppassage

```

For example:

```

The Earth, as a
\startpassage
  habitat for
  \startpassage
    animal life,%
    \variantclass[animal life]{human life}
  \stoppassage
  is in old age
  \variantclass
    [habitat\dots age]
    [T4]
    {dwelling for animal and human life, is aging}
    [obvious error]
\stoppassage
and has a fatal illness. Several, in fact.

```

These commands are used so often it's good to have abbreviations to make editing easier. For example, we can abbreviate

```

\startpassage
  passage
  \entryclass[class-m] [lemma] [siglum] {corecomment} [remark]
\stoppassage

```


by

```
<{passage} [class-m] [lemma] [siglum] {corecomment} [remark]>
```

So nested entries could look like

```
<{Here is a
  <{passage of text}
  [class-m] [lemma] [siglum] {corecomment} [remark]
  >
with nested entries.}
[class-m] [lemma] [siglum] {corecomment} [remark]
>
```

For example

```
The Earth, as a
  <habitat for
    <animal life, [variant] [animal life] [human life]>
  is in old age
    [variant] [habitat\dots age] [T4]
    {dwelling for animal and human life, is aging}
    [obvious error]
  >
```

and has a fatal illness. Several, in fact.

In my experience this kind of alias makes life easier (less unmatched delimiters, easier reading). In `\setuppassage` we can activate the abbreviation:

```
\setuppassage[abbr=angle]
```

Sometimes we may have overlapping but unnested **entries**. Here we can use **metapassages**:

```
\startmetapassage
  Here is some overlapping and unnested text.
  \startpassage
    is some overlapping\variantclass{are a few overlapping}
  \stoppassage
  \startpassage
```

```

        overlapping and unnested\variantclass{overlapping, unnested}
    \stoppassage
\stopmetapassage

```

Abbreviations could look like:

```

<{metapassage}
  <{passage1}
    [class-m] [lemma] [siglum] {corecomment} [remark]
  >
  <{passage2}
    [class-n] [lemma] [siglum] {corecomment} [remark]
  >
>

```

4.2.3 Subentry Class

Given a **subentry**, it is generally merely a footnote to the **comment**. For any given purpose one can define a note with a unique conversion and use that for a specific **class** of **subentry**.

In some cases it may be useful to be able to define a footnote series with a **marker-lemma-comment** structure. Consider a **main entry class** consisting of a running commentary. That commentary could be marked with **line numerals** and its text could have variants, etc.

4.3 Apparatus

As we discussed in **Figure 3.3.1** we consider each **apparatus entry** command to be analogous to a section-head entry. Together, the **apparatus entries** form a combined list. This can happen in one of three ways:

- **Per Page**
In this case all **entries** to **passages** on a single given page are collected into a list.
- **Per Main-Text Section**
All **entries** to **passages** within a single given section of the main text are collected into a list.
- **Per Entire Text**
All **entries** to **passages** within the entire **main text** are collected into a list.

The list of entries is defined by

```
\defineapparatus [name] [options]
```

Configuration is setup by

```
\setupapparatus [name] [options] [...,..=...]
```

Finally, placement is determined by

```
\placeapparatus [name] [options] [...,..=...]
```

The configuration options largely mirror those of `\setupcombinedlist` on page 185 of the `CONTEXT` manual. Some of the most relevant options to `\setupapparatus` are given in **Table 4.3**.

...	<i>name</i>
criterium	<u>text</u> <i>section page</i>
alternative	<u>normal</u> <i>paragraph column a b c ... none command</i>
column	<i>n</i>
location	<u>footnote</u> <i>manual</i>
rule	<u>on off</u> <i>command</i>

Table 4.3 Options for `\setupapparatus`.

For example: We want all **variants** to go in an appendix in the back of the book, and all commentary and source references to go in footnotes to the main text. We define two apparatuses. First, lets define the **variant apparatus**:

```
\defineapparatus [appendix] [variant]
\setupapparatus [appendix] [criterium=text,
                             alternative=normal,
                             location=maual]
```

This will create a list of all the `\variantclass` **entries** throughout the text, line them up one by one, and allow you to declare

```
\placeapparatus [appendix]
```

in your appendix.

For the **exegetica** layer of the **apparatus**:

```

\defineapparatus [main] [exegetica, source]
\setupapparatus [main] [criterium=page,
                        location=footnote]
\setupapparatus [main] [exegetica]
                        [alternative=column,
                        column=2]
\setupapparatus [main] [source]
                        [alternative=paragraph]

```

This will create, for each page, a list of all the

```
\entryclass [exegetica], \entryclass [source]
```

entries for each respective page and place them in two layers below the main text, with the **exegetica** layer first and the source layer second. If one decides to typeset the source layer first, then simply reverse the order:

```
\defineapparatus [main] [source, exegetica]
```

The **exegetica** will be typeset in 2 columns and the source references will be done in paragraph format.

Although we have been explicit in the above example: If `location` is set to `manual`, then the default `criterium` is `text`; if `location` is set to `footnote`, then the default `criterium` is `page`.

4.4 Utilities

Finally, we have a few utilities:

- `\currentmarginalrange [. . . , . . .]`

See **Subsection 3.1.3**. This records, for a given page, the value or value-range of the **critical-section numerals**, the **paragraph numerals**, and/or the **line numerals** on that page. For example: If a given page ranges over **folio's** X1a and X1b, paragraph numerals vii–x, and line numerals 1–17, then

```
\currentmarginalrange typesets
X1a–X1b; vii–x; 1–17
```

This can be configured. So

```
\currentmarginalrange [section, line] typesets
```

X1a–X1b; 1–17

without the paragraph numerals.

When declared in `\setupheadertexts` this command will typeset the info for the respective page. This is especially useful if a part of the **apparatus** has been placed at the back of the book, for example. So our earlier (see [Section 4.3](#))

```
\placeapparatus [appendix]
```

could be combined with `\setupheadertexts` and `\currentmarginalrange` to produce headings that relate the **entries** back to the **main text**.

`\currentmarginalrange` is set up with

```
\marginalrange
```

See [Table 4.4](#).

```
...                criticalsection paragraph line subline all page
rangeseparator    text {default: -}
separator         text {default: ;}
```

Table 4.4 Options for `\currentmarginalrange`.

- `\verseline`
See heading [Stanza, at page 27](#)
- `\autoverseline`
See heading [Stanza, at page 27](#)
- `\marginalmarker` [*passagesymbol*] [*line1, line2*] [*subline1, subline2*]
[*paragraph*] [*criticalsection*]
[*textsection*] [*page*]

Each line numeral pair marks the beginning and end of a range, e.g., [12, 14] produces 12–14 in the **entry marker**.

`\setupmarginalmarker` uses the six relevant options from `\setupentryclass` (from `passagesymbol` through `markerdistance`).

Usage:

```
\startpassage
  \marginalmarker [] [] [] [] [] [] []
  \variantclass [lemma] {corecomment}
\stoppassage
```

Used in conjunction with the **lemma** option of the **entry** command one can work around the (hopefully very few) sticky situations where the automatic mechanism does not work.⁶

4.5 Conclusion

We believe that the above constitutes a very rich and flexible interface for typesetting the **apparatus** of a critical edition. This manual remains a work in progress, and we expect many improvements in the days and weeks ahead. Please contact myself or Thomas A. Schmitz (`thomas.schmitz@uni-bonn.de`) with any suggestions, improvements, or clarifications.

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⁶ EDMAC uses this kind of solution for overlapping, unnested notes. Hopefully our **metapassage** approach solves that but there may other, unforeseen, situations.

We include a few examples of pages from critical editions with comments. These examples are meant to demonstrate the various requirements and specifications which have been outlined on the preceding pages; they provide the practical examples for the theory. They correspond, almost line for line, to pages from actual editions. We have simply copied the design and will point out what would actually be needed to have this typeset automatically.

ΣΟΛΩΝ 7, 2–7, 6

ὀρώμεν, αὐτῷ τε Θαλῇ μὴ γήμαντι πλέον οὐδὲν εἰς
 ἀφοβίαν, εἰ μὴ καὶ φίλων κτήσιν ἔφυγε καὶ οἰκείων καὶ
 πατρίδος. ἀλλὰ καὶ παῖδα θετὸν ἔσχε ποιησάμενος αὐτὸς
 5 τὸν τῆς ἀδελφῆς ὡς φασὶ Κύβισθον. ἐχούσης γάρ τι 3
 τῆς ψυχῆς ἀγαπητικὸν ἐν ἑαυτῇ, καὶ πεφυκυίας, ὥσπερ f
 αἰσθάνεσθαι καὶ διανοεῖσθαι καὶ μνημονεύειν, οὕτω καὶ
 φιλεῖν, ἐνδύεταιί τι τούτῳ καὶ προσφύεται τῶν ἐκτὸς οἷς
 οἰκείον οὐδὲν ἔστι, καὶ καθάπερ οἶκον ἢ χώραν γνησίων
 10 ἔρημον διαδόχων τὸ φιλόστοργον ἀλλότριον καὶ νόθοι καὶ
 θεράποντες εἰσοικισάμενοι καὶ καταλαβόντες, ἅμα τῷ φι-
 λεῖν τὸ φροντίζειν καὶ δεδιέναι περὶ αὐτῶν ἐνεποίησαν. 4
 ὥστ' ἴδοις ἂν ἀνθρώπους στερροτέρῃ τῇ φύσει περὶ γάμου 82
 καὶ γενέσεως παίδων διαμαχομένους, εἶτα τοὺς αὐτο-
 97L ὤς ἐπὶ παισὶν οἰκοτρίβων ἢ θρέμμασι παλλακῶν νοσοῦσι
 16 καὶ θνήσκουσι παρατεινομένους πόθῳ καὶ φωνὰς ἀγεν-
 νεῖς ἀφιέντας. ἔνιοι δὲ καὶ κυνῶν θανάτῳ καὶ ἵππων
 161 S αἰσχυρῶς καὶ ἀβιώτως ὑπ' ὀδύνης διετέθησαν. ἀλλ' ἕτεροί
 20 γε καὶ παῖδας ἀγαθοὺς ἀπολέσαντες οὐδὲν ἔπαθον δεινὸν 5
 οὐδ' ἐποίησαν αἰσχυρόν, ἀλλὰ καὶ χρώμενοι τῷ λοιπῷ βίῳ
 κατὰ λόγον διετέλεσαν. ἀσθένεια γάρ, οὐκ εὐνοια, λύπας
 ἀπεράντους ἐπάγεται καὶ φόβους ἀνθρώποις ἀνασκήτοις
 ὑπὸ λόγου πρὸς τύχην, οἷς οὐδ' ἀπόλαυσις ἐγγίνεται
 25 τοῦ ποθουμένου παρόντος, τοῦ μέλλοντος ὠδίνας ἀεὶ καὶ b
 τρόμους καὶ ἀγωνίας, εἰ στερήσονται, παρέχοντος αὐτοῖς.
 δεῖ δὲ μήτε πενία πρὸς χρημάτων πεφράχθαι στερῆσιν, 6
 μήτ' ἀφιλία πρὸς φίλων ἀποβολήν, μήτ' ἀπαιδία πρὸς
 τέκνων θάνατον,

I cf. Diog. L. I, 26

[S(UMA=)Y] I οὐδὲν «ἦν» Zie. || 3 «οὐ μὴν» ἀλλά Zie. || 9 ἦ S: καὶ Y || 10
 τὸ SU: τὸν AM || II καὶ om. Y ||

The preceding page is taken from Konrat Ziegler's edition of Plutarch [14]. The design of **main text** and **critical apparatus** is not overly complex. The text is a simple running text. The **apparatus** consists of three parts:

1. The topmost part is the **similia** apparatus. It is keyed to the line numbers of the **main text**.
2. The second part is a **testimonia** apparatus. It consists of a list of manuscripts (= **witness list**) which is included in square brackets. This list is repeated at the beginning of every page. Typographically, it is integrated into the third part, the
3. **critical** apparatus. Again, it is keyed to line numbers of the **main text**. The separation of single **entries** is done via the symbol ||. If there is more than one **entry** to a line, these single **entries** are separated via a single |. As you can see, the **apparatus** is not entirely consistent: the **entries** to lines 9 and 10 have the **lemma**; the entries to lines 1, 3, 11 do not repeat the **lemma** from the **main text**, they are examples of a negative **apparatus**.

What makes this specimen interesting is the multitude of marginal numberings. I have added color keys to make this easier to follow:

- Left margin, small black numbers: these are the line numbers. They restart at every page; both **testimonia** and **critical** apparatus are keyed to these numbers.
- Right margin **blue** numbers: the subparagraphs of the current edition. These are used as markings for the page headers.
- Right margin, **red** numbers and letters: pages and sections in Estienne's edition.
- Left margin, **green** numbers: pages in the edition by Lindskog;
- Left margin, **magenta** numbers: pages in the edition by Sintenis.

Only the line numbers can be calculated automatically; all other numbers have to be entered manually. Ziegler's edition has all these different numbers share the same margin space – I don't know if this was a conscious decision or just for lack of better typographical solutions. Idris has suggested to have differently nested marginal spaces for such cases. This may very well be the best solution, but we need to take into account that editors may wish a scenario such as this one: use the same space for different levels. One interesting thing is happening in line 15: since the line number would fall on the same line as the Lindskog page number, it is postponed for one line. I have no idea if this can be done automatically.

- 36** Tzetz. in Ar. *Pl.* 87 p. 30^{b1} Massa Positano
 τυφλὸν δὲ τὸν Πλούτων φησιν ἐξ Ἰππώνακτος τοῦτο σφετερισάμενος.
 φησὶ γὰρ οὕτως Ἰππώναξ·

ἔμοι δὲ Πλούτος—ἔστι γὰρ λίην τυφλός—
 ἐς τῶικί' ἐλθὼν οὐδάμ' εἶπεν “Ἰππώναξ,
 δίδωμί τοι μνέας ἀργύρου τριήκοντα
 καὶ πόλλ' ἔτ' ἄλλα”. δείλαιος γὰρ τὰς φρένας.

- 37** Choerob. in Hephaest. p. 195. 22 Cronsbruch (quae praecedunt v.
 ad fr. 43–4)
 εἶτα πάλιν ὁ αὐτός·

ἐκέλευε βάλλειν καὶ λεύειν Ἰππώνακτα,
 τὴν λευ τετάρτῳ ποδί· λεύειν δέ φησιν ἀντὶ τοῦ λιθοβολεῖν.

- 38** Tzetz. in Lyc. 690 (p. 227. 25 Scheer)
 ἢ δὲ λέξις ὁ πάλμυς ἐστὶν Ἰώνων, καὶ χρῆται ταύτῃ Ἰππώναξ λέγων·

ὦ Ζεῦ, πάτερ <Ζεῦ>, θεῶν Ὀλυμπίων πάλμυ,
 τί μοῦκ ἔδωκας χρυσόν, ἀργύρου †πάλμυ;

36 1 δ' ὁ Marzullo *λίαν* cod. 3 *μνᾶς* cod.: corr. R. Meister, *Abh. sächs. Ges.* 13, 1893, 830 *ἀργυρίου* cod.: corr. Bergk 4 *τὰς φρένας γὰρ δείλαιος* Sauppe, *Phil.* 30, 1870, 234

38 1 *πάτερ*: *πρῶν* A Ζεῦ alterum add. Meineke cl. Archich. 177. 1 Ὀλυμπίων θεῶν P 2 *πάλμυ* PH

Figure 4.2 Page from West's edition [13]

The preceding page is taken from Martin West's edition of the fragments of Greek elegy and iambus [13]. Editions of fragmentary texts are frequent in classical scholarship. The design is straightforward, yet a couple of points merits attention:

- There are two active numbering systems which are referred to in the **apparatus**: number of fragment (in bold, in the margin); line within single fragment (which is only shown if there are more than 5 lines to a fragment, yet used in the **apparatus**). The fragment numbers are also used for the running header; both set of numbers is also used for cross-references.
- The **apparatus** is typeset as a single paragraph for each fragment; every new paragraph is indented. The **apparatus** is separated from the **main text** by a narrow black rule.
- The separator for **entries** referring to separate lines is a large horizontal blank space, for **entries** referring to the same line a smaller horizontal blank.

ALCMAN 168, 169, 170, 171

DORICA EX AP. DYSC., ETYMOLOGICIS, AL.
OMNIA SINE NOMINE AUCTORIS**168** Ap. Dysc. *Synt.* β̄ 77 (p. 183 Uhlig)

καί τῷ φίλιππον ἔθηκεν

id. paulo inferius (p. 184 Uhlig) et rursus *Pron.* p. 54 Schn. καὶ—ἔθηκε(ν)

καί τῷ: καὶ τοῖ *Pron.*

Alcmani tribuit Ahrens, *Rh. Mus.* 6 (1838) 234

cf. M. Landfester, *Das gr. Nomen 'Philos' und seine Ableitungen* (Spudasmata 11 (1966)), p. 123**169** Ap. Ap. Dysc. *Pron.* Gr. Gr. 2.1.1 p. 54 Schn. (de eo quod est τῷ apud Dorienses usurpato)

καὶ τὸν Διὸς θύγατερ μεγαλόσθηνες.

Alcmani tribuit Ahrens, *Rh. Mus.* 6 (1838) 234

The preceding page is taken from Malcolm Davies's edition of the fragments of Greek lyrics [2]. This is another solution to the problem of editing fragmentary material. The editor has chosen to append the *apparatus* directly to each fragment. There are up to four kinds of *apparatus*: *testimonia*, *critical*, *exegetica*, and bibliographical. It is rare, however, to have all four kinds with one single fragment. The different *apparatus* are separated by a rule.

Only the line numbers within every fragment is referred to in the *apparatus* (not in our example, where the fragments have only one line). The fragment number (in bold, in the margin) is used for internal cross-references and in the header.

1233^a3–26

15 *ἑαυτὸν τούτων, καὶ τοιοῦτός ἐστιν οἶος ἀξιοῦν ἑαυτόν. οὗτος*
ἐπαινετός καὶ μέσος τούτων. 4
ἔπει οὖν περὶ τιμῆς αἴρεσιν καὶ 4
χρήσιν καὶ τῶν ἄλλων ἀγαθῶν τῶν ἐντίμων ἀρίστη ἐστὶ δι- 5
άθεις ἢ μεγαλοψυχία, καὶ τοῦτ' ἀποδίδομεν, καὶ οὐ περὶ τὰ
 16 *χρήσιμα, τῷ μεγαλοψύχῳ, ἅμα δὲ καὶ ἡ μεσότης αὕτη ἐπαι-*
νετωτάτη· δῆλον ὅτι καὶ ἡ μεγαλοψυχία μεσότης ἂν εἴη, τῶν
δ' ἐναντίων, ὥσπερ διεγράψαμεν, ἡ μὲν ἐπὶ τὸ ἀξιοῦν ἑαυτὸν
ἀγαθῶν μεγάλων ἀνάξιον ὄντα χαυνότης (τοὺς τοιούτους γὰρ 10
χαύνους λέγομεν, ὅσοι μεγάλων οἶονται ἀξιοὶ εἶναι οὐκ ὄντε-
ς), ἡ δὲ περὶ τὸ ἀξίον ὄντα μὴ ἀξιοῦν ἑαυτὸν μεγάλων μικρο-
ψυχία (μικροψύχου γὰρ εἶναι δοκεῖ, ὅστις ὑπαρχόντων δι' ἃ
δικαίως ἂν ἠξιοῦτο, μὴ ἀξιοῖ μηθενὸς μεγάλου ἑαυτόν), ὥστ'
 17 *ἀνάγκη καὶ τὴν μεγαλοψυχίαν εἶναι μεσότητα χαυνότητος* 15
καὶ μικροψυχίας. ὁ δὲ τέταρτος τῶν διορισθέντων οὔτε πάμ-
παν ψεκτός οὔτε μεγαλόψυχος, περὶ οὐδὲν ἔχον ὧν μέγεθος·
 18 *οὔτε γὰρ ἀξιος οὔτε ἀξιοὶ μεγάλων, διὸ οὐκ ἐναντίος. καίτοι*
δόξειεν ἂν ἐναντίον εἶναι τῷ μεγάλων ἀξίῳ ὄντι μεγάλων τὸ
μικρῶν ὄντα ἀξίον <μικρῶν> ἀξιοῦν ἑαυτόν. οὐκ ἔστι δ' ἐναν- 20
τίος οὔτε τῷ μὴ

1233^a 9–30 = EN 1125^a16–34; cf. 1122^b30–1123^a18

3 οἶον ἀξιοῖ ἑαυτόν· Richards: οἶος ἀξιοῦν ἑαυτόν, codd. 6 <περὶ
 suppl. Walzer 7 τὰ post οὐ suppl. Fritzsche, τὸ Ross τὸν μεγαλόψυχον
 codd.: τῷ μεγαλοψύχῳ Fritzsche 8 αὕτη secl. Rackham 10 ἐπὶ
 codd. (cf. 22^a23): ἔπει Ald.: περὶ Ross (cl. 33^a12) τὸ] τῷ L

Figure 4.4 Page from Walzer's and Mingay's edition of Aristotle [11]

The preceding page shows a philosophical prose text, Aristotle's *Eudemian Ethics* edited by Walzer and Mingay [11]. Most of the phenomena have already been shown: the bipartite apparatus (*testimonia* and *critical*). Editors for Aristotle always show the pagination and line numbers of the Bekker edition in the margin; here in the right (= outer) margin. Line 4 is split into two physical lines to emphasize the section; that's why the number is repeated in the margin. The Bekker line numbers and pages are also displayed in the page header. The left (= inner) margin shows the traditional paragraphs.

One thing that is worth pointing out is that the editors here, as in most critical editions, use a mixture of negative and positive *apparatus*: the last entry has a *lemma*, a separator (|), and a critical comment, yet no *witnesses* for the *main text*. Editors usually have good reasons for choosing one alternative, and the module should not try to impose homogeneity where traditionally, it has always been the editor's good judgment which decided.

89

LES GRENOUILLES

de préférence à Euripide, si tu dois ramener quelqu'un de là-bas ?

DIONYSOS. — Non, pas avant qu'ayant pris Iophon tout seul j'aie éprouvé ce qu'il peut composer sans Sophocle.
80 D'ailleurs Euripide, en débrouillard qu'il est, fera tout pour s'évader ici avec moi. L'autre, accommodant ici, est resté accommodant là-bas.

HÉRACLÈS. — Et Agathon¹, où est-il ?

DIONYSOS. — Il m'a quitté, il est parti; un bon poète, regretté de ses amis.

85 HÉRACLÈS. — En quel pays, le malheureux ?

DIONYSOS. — Au banquet des Bienheureux².

HÉRACLÈS. — Et Xénoclès³ ?

DIONYSOS. — Qu'il périsse, par Zeus.

tragédies aidé par son père.

¹ Poète tragique et comique. Voir le *Banquet* de Platon où la scène se passe chez Agathon. Cf. aussi *Thesmophories* v. 39–265.

² C'est-à-dire il est mort. Cf. *ἐς μακαρίων Cavaliers* 1151, *εἰς μακάρων ἐνδαιμονίαν* Platon, *Phédon* 115 c.

³ Médiocre poète tragique, fils du poète tragique Carcinus. Cf. *Nuées* 1261–5, *Paix* 790–95, *Thesmophories* 168 et la note.

ΒΑΤΡΑΧΟΙ

89

- μέλλεις ἀνάγειν, εἴπερ <γ> ἐκέϊθεν δεῖ σ' ἄγειν;
ΔΙ. Οὐ, πρὶν γ' ἂν Ἴοφῶντ', ἀπολαβὼν αὐτὸν μόνον,
 ἄνευ Σοφοκλέους ὃ τι ποεῖ κωδωνίσω.
 Κἄλλως ὁ μὲν γ' Εὐριπίδης πανούργος ὦν 80
 κἂν ξυναποδρᾶναι δεῦρ' ἐπιχειρήσειέ μοι·
 ὁ δ' εὐκόλος μὲν ἐνθάδ', εὐκόλος δ' ἐκεῖ.
ΗΡ. Ἀγάθων δὲ ποῦ 'στιν;
ΔΙ. Ἀπολιπὼν μ' ἀποίχεται,
 ἀγαθὸς ποητῆς καὶ ποθεινὸς τοῖς φίλοις.
ΗΡ. Ποῖ γῆς ὁ τλήμων;
ΔΙ. Ἐς μακάρων εὐωχίαν. 85
ΗΡ. Ὁ δὲ Ξενοκλέης;
ΔΙ. Ἐξόλοιτο νῆ Δία.

77 ἀνάγειν RV : ἀναγαγεῖν Φ || <γ> Bentley : om. RVΦ || 78 γ' VΦ : om.
 RΣ^{Rλ} || 80 γ' RΦ : om. V || 81 κἂν Dobree : καὶ RVΦ || ἐπιχειρήσειέ (-ί-
 R) μοι RVMU : ἐπιχειρήσειεν ἂν Λ

Figure 4.6 ... and text of Coulon's edition of Aristophanes [1]

Despite the fact that bilingual editions are out of the direct scope of what we are trying to achieve with `critTEXt`, we show one example of such an edition to make readers aware of what is needed. The preceding pages are from Victor Coulon’s edition of the comedies of Aristophanes; they provide a good example of the typographical conventions of the “Budé” series, an important collection of Greek and Latin classical texts (see Irigoin’s rules for establishing such editions [6]). We want to emphasize the following aspects:

- Of course, translation and `main text` face each other. The `streams` module already provides some utilities for synchronization of output streams, but first attempts with it have also shown how complex this sort of setup is; a fully automated solution may well be impossible.
- One specialty of the “Budé” editions (that most bilingual editions do not follow) is the page numbering: even and odd pages which contain the same text and translation have the same pagenumber.
- Both pages have their own sets of notes: the translation (left side) has a series of footnotes; they can be carried over to the next left (even) side. The text (right, odd side) has a `critical apparatus`.
- One important aspect which has been mentioned in chapter 4.1: in dramatic texts, many lines are split between speakers. The convention is to have these parts typeset on different physical lines, but with the same linenumber (which will be used for references in the `critical apparatus`).
- Both `main text` and translation have the linenumbers in the margin. While it is imaginable that a complex solution for automatic linenumbers can be found for the text, this will be impossible for the translation: no algorithm can tell how many physical lines of translation will correspond to how many physical lines of text. Since the linenumbers of the translation are not used for referencing, they can and will have to be set manually.

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