

J. F. LEVIN

## TOWARD A GRAPHOLOGY OF OLD PRUSSIAN MONUMENTS: THE ENCHIRIDION

Criticism of the orthography of the Old Prussian monuments is not a recent development. Many scholars in the past have noted errors and inconsistencies in the texts, and some have found them to be very deficient indeed<sup>1</sup>. In recent years, however, this criticism has reached the intensity of an assault on the basic validity of the orthography, impugning its character to such an extent that it would seem that nothing intelligent about the phonology of Old Prussian may be deduced from the texts. This attitude can be summarized in Professor Schmalstieg's words:

...I will not count heavily on the evidence of Old Prussian spelling. It seems obvious that the different ways of writing a single word have no significance at all. ...it may well be madness which would lead anybody to believe that he could make anything out of Old Prussian orthography<sup>2</sup>.

It seems to me that Schmalstieg differs from previous scholars in that they assumed an underlying "correct" text overlaid with errors, which could be peeled away, revealing useful material. Since Schmalstieg has said,

Nor do I believe that consistent spelling necessarily points to a correct rendition of a word. A consistent spelling may just as well be an incorrect one...<sup>3</sup>,

there is no "correct" text to be reconstructed, and nothing, indeed, can be learned about Old Prussian. His arguments suggest that the orthography is bad because scribes are inherently incapable of transcribing accurately, hence of course no accurate text can even be imagined, except a phonetic transcription by a contemporary linguist. These views have been convincing to many scholars, and one can scarcely cite an Old Prussian form without a strong disclaimer for the accuracy of the spelling.

<sup>1</sup> See for example G. Gerullis, *Zur Beurteilung des altpreußischen Enchiridions*, — *Streitberg Festgabe*, 96–104; Z. Rysiewicz, *L'accentazione dell' antico prussiano*, — *StB VII* (1940) 88–147. R. Trautmann, *Die altpreußischen Sprachdenkmäler*, also mentions „mangelhafter Orthographie...“, 99.

<sup>2</sup> W. R. Schmalstieg, *The Old Prussian Verb*, — *Baltic Linguistics*, University Park and London, 1970, 127.

<sup>3</sup> W. R. Schmalstieg, *An Old Prussian Grammar*, University Park and London, 1974, 305.

In this paper I would like to come to the defense of the Old Prussian orthography. To do this I must begin with a discussion of the methodology of text analysis.

When a scientist is confronted with a mass of complex, seemingly contradictory data which he must account for, the first step in the process of analysis must be to narrow the focus of investigation so that, as much as possible, phenomena can be examined in isolation. Similarly, faced with the many errors and inconsistencies of the Old Prussian monuments, the first step is to narrow the field of study to individual texts, and further, to natural subsets of those texts. Since we know that spelling systems may often show differing spelling principles for roots and for desinences which carry grammatical as well as phonological information, we must examine the orthography of stems and endings separately. Finally, we must pay especially careful attention to the spellings of single lexemes which have a high-frequency occurrence. In a systematic orthography, for non-linguistic, cultural reasons, the same phoneme may be spelled differently in different lexemes, but identically in all occurrences of a given lexeme. Moreover, the variants which do occur in the repeated occurrences of the same word provide the best "laboratory" control over the environment of the given variation.

For all these reasons most of this paper will deal with one text, the *Enchiridion*, primarily touching on the orthography of stems, and paying special attention to high-frequency vocabulary in the text. Note that such a subset of the corpus of data may be internally consistent, while appearing to be inconsistent with respect to other subsets of the corpus. When one starts from the premise that a good, linguistically informative text is not possible, it is a waste of time to analyze parts of the data<sup>4</sup>.

The next methodological consideration is the goal of analysis. The text is a human artifact, representing human language. As a complex artifact it may be filled with errors, and the first task of investigation must be the reconstruction of an ideal normative text. In performing this task, one must distinguish between

---

<sup>4</sup> The consequences of these two approaches can be seen in Schmalstieg's review of Stang, *Vergleichende Grammatik der baltischen Sprachen* (Language 44/2, 390). Stang, analyzing separately the three Catechisms, notes the spellings for the desinences *\*-kan*, etc., in the texts: I. *-kun*, *-cun*, *-con*; II. *-quan*; III. *-kan*. Stang tries to explain this observed consistency, this pattern, this manifest orthographic development, by proposing differing dialects. That may or may not be correct, but Schmalstieg sees the whole phenomenon as "orthographic vacillation" due to scribal inability to record phonetic labialization. Because he denies the possibility of scribal competence, he ignores the most important fact in Stang's presentation — each text presents a differing orthographic norm for representing the desinences in question. There is no "vacillation". The problem is as much to account for the systematic distribution of the so-called variants among the three monuments, as it is to account for their particular forms.

differing kinds of error; a transcribing error, based on mishearing, must not be thrown in the same heap as a purely text error, a slip of the pen, a misreading of handwriting, or a composing error, made in the print shop. These in turn are not the same as errors due to translator's misapprehension. Taking all errors together without any sensitivity to such distinctions creates a false impression of the validity of the text<sup>5</sup>.

Instead of concerning themselves with the problem of a normative text, some scholars have proceeded directly to underlying (morpho-) phonological reconstructions. Abandoning the text, they posit Old Prussian forms based on the "comparative method", i. e. comparing the grammars of the attested East Baltic languages for clues to the original Old Prussian forms. Such an approach is fallacious and leads to many distortions. One can see its error by considering the extinct Baltic language(s) to the East. What was the verb system in that language? Let us look at Lithuanian and Latvian and "reconstruct" an appropriate verb system for this unattested language. Why is such a procedure pointless? It seems to me that an unknown Baltic language is linguistically interesting precisely in how it differed from attested languages. Apart from its basic frivolousness, reconstructing a case ending for such a language is useless because the result is inherently biased in favor of similarity with the attested languages. Similarly, all we know of Old Prussian is in the monuments. What was this language really like? That can only be answered by analyzing the data that we have. How did Old Prussian differ from Lithuanian and Latvian? That is the interesting question. If we abandon the orthography and reconstruct Old Prussian on the basis of Lithuanian and Latvian, we are introducing a methodological bias in favor of similarity which distorts the actual identity of the Old Prussian language.

The distortions caused by abandoning the task of normative text reconstruction in favor of "etymologizing" reconstruction can be seen in recent treatments of the active verb desinences and of the third person personal pronouns. In the case of the verbs, the 1st person plural ending has been reconstructed as \*(-*ma*) on the basis of the "comparative method", even though the only 1st person plural desinence attested in the *Enchiridion*, occurring in fifty-five different verbs, is *-mai*. It is even considered that the ending could have been \*(-*me*), parallel with the 2nd person plural \*(-*te*), since one of the variants for this desinence is *-tai*, along with *-ti*, *-tei*, and *-te*<sup>6</sup>. Only the conviction that the orthography is utterly meaningless could allow such speculation, since in fact the odds against such a random distribution of spellings for identical vowels for the 1st and 2nd person plurals are

---

<sup>5</sup> My work on the *Elbing Vocabulary*, for example, convinces me that that monument incorporates a good orthography, but was poorly copied.

<sup>6</sup> W. R. Schmalstieg, *OP Verb*, 130.

astronomical. Note that this has nothing to do with a theory of scribal competence; the odds against the endings being identical would be astronomical even if Prussian had been recorded by trained apes or parrots.

Similarly, this "comparative method" reconstructs the stem *\*(tan-)* for the 3rd person pronoun, dismissing as orthographic vacillation the two variants attested in the Enchiridion, *tan- / t̃an-* and *ten-*. However, these variants have a systematic distribution: *tan- / t̃an-* occurs in the masculine Nominative sg. fifty-three times, *ten-* occurs in other cases fifty-six times, with but two deviations – one masc. Acc. pl. *tannans*, one fem. Nom. sg. *tannā*. Clearly the Old Prussian of the Enchiridion had a systematic stem alternation *tan ~ ten*, whatever its origin. In a normative text reconstruction I would correct the two exceptions to *\*tennans*, *\*tennā*; presumably a "comparative" reconstruction would "read" the fifty-six occurrences of *ten-* as *\*(tan-)*.

In arguing that the orthography of the Enchiridion is "good", I must discuss the question of how the text was made, the competence of the transcriber, and the nature of the data that linguists can expect to gather from a "good" orthography. Let me start by saying that I have no a priori assumptions about scribal abilities or linguistic motivations. Arguments based on the spelling abilities of American college students are no more relevant than their architectural abilities are relevant to the question whether the cathedrals of the 16th Century Königsberg were well-built. Rather, I start with the text which we have, searching for patterns, for consistencies, and I attempt to construct hypotheses which will account for what we observe. The evaluation of the ability of the scribe is made after studying the text; it is not an assumption which we allow to color our study<sup>7</sup>.

I will begin with what the text is not. It is not a phonetic or phonemic transcription of Old Prussian. This would seem obvious, but apparently there is a misconception that earlier scholars interpreted the text as though the spelling were phonemic. This is not correct. I am not aware of any treatment of the Old Prussian texts which assumes or states that the spelling was phonemic. The earlier writers in the field, Berneker, Trautmann, Bezenberger, even Endzelins, were pre-phonemic in their approach, which was either "philological" or neo-grammarian. This leaves the question whether a spelling system can be non-phonemic or non-morphophonemic (or rather, not consistently phonemic or morphophonemic) and still be "good", structured, systematic, and linguistically informative. I think the

---

<sup>7</sup> I do make one assumption which is at the basis of any scientific approach. I assume that all phenomena have causes. This is not to claim that all causes can be discovered, which is obviously not true in the case of the historical human sciences. Nevertheless, I cannot imagine any observable manifestations of human behavior, including so-called "random" vacillations in spelling in a text, to be truly causeless.



answer is yes. I would offer as an example the spelling of English, which is inefficient and difficult to learn, but which is in fact a highly complex system. A thorough analysis of English based on a large corpus in the standard spelling would be very linguistically informative, both synchronically and diachronically. Fortunately for Balticists, the spelling system of the Enchiridion is "better" than English spelling...

My next negative hypothesis is that the Enchiridion was not recorded by a German scribe with a limited knowledge of Old Prussian. Those who accept this model of transcribing, in which the sounds of an alien tongue are set down as best they can be associated with familiar sounds, have not carefully thought through the implications of such a procedure, nor have they studied models which are known to have been recorded that way. Some of the characteristics (not found in the Enchiridion) of such a transcribing procedure are: surface only — no evidence of linguistic structure not found on the surface can be detected; ignorance of word boundaries — separate words are written together and long words are falsely divided; no textual "memory" — the same word may be spelled in two radically different ways in the same line, because the transcriber did not perceive them as the "same" word; native conventions — the transcriber uses entirely the orthographic conventions of familiar languages, and as a consequence one finds foreign imitations — similar sounding words or syllables are falsely identified with words in familiar languages, e. g., Latin, and spelled accordingly.

On the other hand, there is much in the Enchiridion which is absolutely consistent with the model of a language being set down by scribes entirely familiar with it, using a unique, developed spelling tradition. Many of the consistencies found in the text are difficult to account for except as learned scribal behavior; i. e., they represent conventions unknown in contemporary German scribal practice, which must have been learned by the scribe(s) before starting to record the Enchiridion.

How is this model of a sound, systematic orthography which is being defended in this paper consistent with the known facts and presumptions about the Old Prussian monuments? It is well known that the syntax of the Old Prussian is virtually a word-for-word translation of the German. This need not have been the work of German scribes; it is likely that a "high-style" Old Prussian had developed based on the preaching style of the German-speaking clergy. It is well known that the slavish imitation of foreign syntax was common in the vernacular translation of holy scriptures. The German of Martin Luther also received the honor of this imitation.

It is also true that there seems to be more variation in the spellings of grammatical endings, especially verbs, which may suggest poor perception of the language.

There was also grammatical "reduction" in the paradigms. These developments are also consistent with a living language undergoing grammatical simplification in a bilingual, mixed dialect environment, cf. Bulgarian and English. The spelling variants for some endings, especially verb endings, can be explained by assuming a language undergoing reduction and loss of many endings, such as we even find in some East Baltic dialects. It seems likely to me that final stress was disappearing in the Old Prussian of the Enchiridion (cf. the absence of macrons in final diphthongs, as noted by Fortunatov<sup>8</sup>), and there was a general final vowel reduction.

As for the claim of a developed spelling tradition, it might be argued that there is not enough evidence to support such an assumption. But a "tradition" need not be a long development; it could be the product of a single "school", a handful of scribes, developing an orthography over the time spanned by the three monuments (i. e., sixteen years). In these monuments we do have concrete evidence of a developing orthographic tradition and an interest in "correct" language, contrary to some opinions. The II Catechism is as we all know "gecorrigit", but we must accept this as applying also to the spelling changes, for example,

I Cat.: Acc. <i>kun/cu/on</i>	→	II Cat.: <i>quan</i> .
I Cat.: Acc. <i>-in</i>	→	II Cat.: <i>-ien</i> .
I Cat.: <i>-a-</i>	→	II Cat.: <i>-æ-</i> (for * <i>e</i> , <i>bha</i> → <i>bhæ</i> ).
I Cat.: <i>-e-</i>	→	II Cat.: <i>-i-</i> (for * <i>i</i> , <i>lemtwei</i> → <i>limtwei</i> ).

Whether or not these examples represent different "dialects" or different "ideolects", they definitely constitute orthographic development – attempts to solve problems of transcribing Prussian, for which German orthography did not provide a solution. The Enchiridion represents a further development of these same spelling problems: II Cat.: *-quan* → III Cat.: *-kan*, II Cat.: *æ* → III Cat.: *-e-*.

Of course, if we recognize these changes as manifestations of an evolving spelling tradition, we cannot dismiss the motivation of the scribes. Will and his helper(s) were interested in setting down the language "properly", as well as transmitting the message. This is clearly proven in the introduction to the Enchiridion, where the reader is warned to pronounce correctly the vowels marked with a long sign. We cannot deny them this motivation merely because they lacked our definition of "correct" spelling.

What about Will's competence? His letter to Funck claiming he would be unable to continue the translation without the help of a translator cannot be taken as convincing evidence; Will would naturally write such a letter on behalf of a

<sup>8</sup> Ф. Ф. Fortunatov, Об ударении и долготе в балтийских языках, – РФВ 33 (1895) 269.

loyal servant or assistant to save him from statute labor. In any case, I consider the question of Will's ability to be moot, since I assume that he would be using one or more professional scribes to write down the translation made orally by an informant. I would assume that such informants and scribes were bilingual speakers — Koenigsberg must have been filled by that time with the descendants of mixed German-Prussian marriages. Will's name was associated with the translation as the "director" of the project.

Let us turn to the actual details of the text.

As Schmalstieg points out, it is naive to expect consistent spelling from scribes; the modern notion of rigorously consistent spelling is a product of the age of printing. But even in modern spellings there are at least two kinds of consistency — an "etymological" consistency which spells according to phonemic and / / or morphophonemic principles, such as we find in Lithuanian and Latvian spelling, and a word-level consistency, which does not require that phonemes and morphemes be spelled the same way, only that words be spelled the same way. English is an example of the latter type. In the century after the invention of printing, when the *Enchiridion* was published, the modern notion of consistency was only just being developed. The spelling system of the *Enchiridion* does not represent phonemic or morphophonemic consistency, but it does represent a spelling system which was striving towards word-level consistency. Here the spelling of very high frequency words is quite instructive. For example we find the stem *ain-* spelled identically sixty-eight times, with three "errors" corrected by Trautmann: *ans*, *aīnan*, *einan*. The word *as* is spelled the same way forty-three times. No other variants occur. The verb stem *mukin-* is spelled identically ten times, without other variants. The stem *deiw-* is spelled the same way one hundred six times, with no other variants in the *Enchiridion*, no *\*deyw-*, no *\*deiu-*, and no macron! The word *bhe* occurs scores of times. The word *beggi* is etymologically *\*be + gi*, and occurs twenty-five times spelled without *-h-*. *Bh-* occurs only in *bhe*. Such consistency can only be the product of deliberate behavior, in the same way that Stonehenge is the product of deliberate behavior, and not a random pile of boulders.

In measuring the texts against modern standards of spelling consistency, and finding them lacking, one overlooks the function of a writing system as a sign system which incorporates non-linguistic as well as linguistic reality; a writing system is a cultural artifact which has a life of its own, apart from the speech it makes visual. One example of this are the words for "baptise" in the *Enchiridion*: the root (*krikst-*) (cf. Lith. *krikštyti*), reshaped from Slavic *krbstiti*, is spelled twenty-six times with *crixt-*. No other spellings occur. Yet we find the words *krūt*, *kraw-* (four times) with the same initial (*kr-*). Inconsistent, vacillating, "illiterate"? Not at all, here the letters simply have a non-linguistic symbolic function: *cr-* is an echo

of *cristiān-*, *christian-*, *cixtian-* "Christian" (although *kixtiāniskan* occurs once), which in turn is an echo of *Christus* in the text. This deliberate but non-linguistic distribution of the graphs *k* and *c* is not found in the first two Catechisms. Its presence in the Enchiridion is evidence of a developing codification of spelling, not scribal incompetence.

Striking evidence for the independence of the Old Prussian Enchiridion spelling system is revealed by a close comparison with the German text. A very brief, unsystematic inspection uncovered the following especially noteworthy differences:

1) *ie* is never used in the Enchiridion for /ī/. It was used in the German, and in the second Catechism. Its absence in the Enchiridion is further evidence for orthographic evolution in the texts.

2) The German phoneme /c/ is spelled either *z* or *tz* in the German text. The Old Prussian sequence /ts/, which would have sounded identical to /c/ to a German scribe (compare English *cats*, German *Katze*) is normally spelled *ts*; *tz* occurs only exceptionally. This is especially striking in the German borrowing *ganz*, where we find *gāntsas*, *gāntsan* twice, but one time *gantzei*, clearly due to German influence. Elsewhere *ts* occurs virtually without exception. I submit that such behavior would have been literally impossible for "German scribes copying down Old Prussian".

3) *-h-* is used in the German text as an allograph for length in vowels, compare *jrer*, *ihre* (III 25). This is entirely unknown in the Old Prussian of the Enchiridion.

4) *-j* is used for (long?) /i/ in the German text. This is unknown in the Old Prussian of the Enchiridion.

5) *th* is an allograph of *t-* in the German text. This is unknown in the Old Prussian of the Enchiridion.

6) German words are conscientiously spelled in an un-German way, which would have required superhuman forbearance on the part of German scribes: for German *oder* we find in the Enchiridion *adder* seventy-two times, *ader* once.

One of the strongest proofs that the Enchiridion text was not set down by a German scribe ignorant of Old Prussian is the morphophonemic spelling of stem-final consonants<sup>9</sup>. This is not a haphazard spelling; it is so predictable that one must regard it as a rule of Old Prussian orthography which was in some way operative at the conscious level in the scribe(s). The principle of morphophonemic spelling of stem-final consonants takes the form of preserving both voiced and voiceless consonants before /s/ and /t/, i. e., *undan*, *unds* (seven times), *gerbaite*, *gerbt* (four times), Adj. suffix *-ingan*, *-ings* (many times), *waikan*, *waix* (three times),

---

<sup>9</sup> Noted by V. Mažiulis, *Prūsų kalbos paminklai*, 41.



-wierpons, -wierpt (several times)<sup>10</sup>. Rather than list all the many cases, it would be more significant to examine the few exceptions. Their rarity underscores the accuracy of the morphophonemic orthographic principle. In a preliminary search I have found only *lubnigs* (once), *lūbenix* (twice) and *sups*, *supsai*, *supsmu* alongside *subs*, *subsai*, *subsas*, *subsmu*, *subban* etc. (pointed out to me by Professor Schmalstieg).

Other evidence of either morphophonemic spelling or a careful transcription of phonological detail are the consonant doublings at prefix / stem boundary. For example, the verb *attrātwei* (etymological \**et*+*tra*) occurs fifty-one times with *-tt-*, never with one *t*! The prefix *et-* occurs at least twenty-five times with other stems and is never doubled elsewhere in the Enchiridion. One may also note *perreist*, but *perarwi*, *perreit*, *perōni*.

In spite of these many and important consistencies, it is undeniable that the text of the Enchiridion has many variant spellings. Most of the variants which have been so disturbing to scholars, convincing them that the text is inadequate, have been in the spelling of vowels. Nevertheless, I shall argue that the bulk of variants in the text are linguistically significant, and do not diminish the Enchiridion as a "good" text.

If the spelling of stem-final consonants is morphophonemic, and the tendency toward word-level consistency is a development of the age of printing, the spelling of many vowels in the Enchiridion represents an earlier, prephonemic manuscript tradition, whereby a limited set of vowel graphs<sup>11</sup> was made to serve a much larger number of vowels, many with a large number of differing allophones. To complicate matters, it is likely that the Old Prussian vowel system was undergoing change, or at least more than one linguistic code were competing in the language of the Enchiridion.

Given the fact that there were far fewer vowel graphs available than there were sounds perceivable to the scribes (and I use the word "sound" deliberately, since there can be no question of distinguishing between phonemes and perceivable allophones, especially allophones which are stylistically functional), it is reasonable that the same graph would have to serve for several different sounds; what is amazing is how well the scribe(s), making use of supplemental graphic

---

<sup>10</sup> The only other explanation is that Old Prussian preserved voicing contrast in final position. If that were true we would have supposedly German scribes accurately transcribing phonological details which were alien to their native tongue. Thus, even the counter-explanation supports the integrity of the spelling.

<sup>11</sup> I use the term *graph* as a parallel with *phone*, for a letter, or combination of letters, without regard to its function in the orthography.

devices, and a controlled use of allophonic variants, was able to distinguish a large number of contrasting syllables.

A rigorous analysis of variants, with detailed study of environments and careful calculation of statistical distributions, can yield valuable information on the phonological structure of the Old Prussian of the Enchiridion. This work ideally should be done with the aid of the computer, and I am planning to undertake this project in the near future. In this paper I can only set forth some of the principles of classifying variations with tentative conclusions on the meaning of some of the spelling variants in the text.

Types of variation include the following:

**Free variation of graphs for a single underlying phoneme.** The word "free" is meant precisely. In other studies words like "random" and "vacillation" have been used unscientifically. These terms should be understood to mean "distributed as though by a throw of the dice." Any variant which is conditioned in any way, linguistic or non-linguistic, is not "random". I have so far not found a clearcut example of this type of variation in the Old Prussian of the Enchiridion (apparent cases such as *e / a* for \**e* involve other vowels; see below), although the variants *t-* and *th-* for \**t* in the Enchiridion German text would serve as an example.

**Conditional variation of graphs for one phoneme.** One may distinguish two types: graphic / symbolic, and phonological / distributed. The first type would be represented by the variants (*b, bh*) for \**b*, and (*c, k*) for \**k*. The conditions of their variation in the text have already been noted.

Examples of the second type are the variants for consonants: *t, -tt-*; *b, -bb-*; *n, -nn-*; *k, -ck-*; etc., whose distribution is partially determined by the length of a preceding vowel (see below).

**Free variation of graphs for more than one phoneme.** Two or more graphs are used randomly for two underlying phonemes, for example in the Elbing Vocabulary the graphs *o, oa* are distributed randomly among the reflexes of both \**ā* and \**ō*. (It is not clear to me if the Enchiridion text has a similar distribution.) This type of variation implies a merger of underlying segments.

**Skewed distribution of variants for two or more phonemes.** In this type the same variants are found for two or more underlying phonemes, but in a significantly different distribution for each. For example, in the Enchiridion, the graphs *ij* and *ī* are both used for \**ē* and for \**ī*. Their distribution in stems with five or more occurrences was calculated, revealing significant differences. For \**ē*, *ī* is written approximately sixty-eight percent, *ij* approximately seventeen percent of the time. For \**ī* these figures are turned around; *ij* is written sixty-one percent of the time,

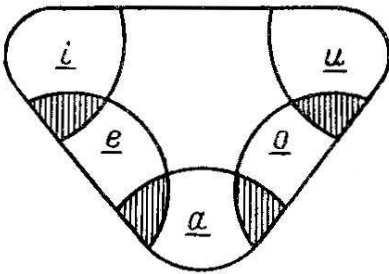
*i* occurs twenty-seven percent of the time (these graphs are discussed in greater detail below). These figures are based on three hundred seventy-nine occurrences of the segments in question. The striking difference in distribution cannot be due to chance. Here the differing percentage of distribution is accounted for by assuming contrasting underlying segments. The / *i* / which developed from \**e* was not identical with the original \**i*. This does not mean that the graphs were perceived differently by the scribe, i. e., that *ij* for \**e* was perceived as different from *ij* for \**i*, although that is certainly not impossible. It merely claims that the differing distribution of graphs for the two underlying segments can only be accounted for by assuming the synchronic contrast of the two underlying segments.

Due to the neogrammarian tradition, these percentage distributions have been ignored in Old Prussian studies. Strong claims for sound changes, such as the correlation of *ū* diphthongization with acute accent, have been "disproven" by discovery of a counterexample with diphthongization on a circumflex accent. Taking into account the discoveries of modern sociolinguistics, it may be simply that acute accent favored the development; that it arose first under acute accent and then began to spread to circumflex accented syllables. It might be the case that sixty or eighty percent of acute syllables show diphthongization, but only twenty percent of circumflex. Such a result would be entirely in harmony with the known facts of ongoing sound change as revealed by many recent studies in sociolinguistics, and would be extremely interesting for Old Prussian. Another example is the problem of doubling consonants after stressed short vowels. This was first noted many years ago, but after many scholars have cited exceptions, the observation is being abandoned. Schmalstieg notes merely that consonants were probably doubled after short vowels in the German tradition<sup>12</sup>. Actually if we merely revise the statement so that it reads, stressed short vowels almost always are followed by doubled consonants; unstressed short vowels tend to be followed by single consonants, we still have a powerful description which will prove very useful, together with other criteria, in extending considerably our knowledge of Old Prussian stress.

**Overlapping distribution of variants for two or more phonemes.** Each graph symbolizes a range of sounds perceivable to the transcriber. The extremes symbolized by a given graph may overlap with the signatum of another graph, leading to an overlapping distribution of graphs. For example, we may find for underlying \**a* – (*a*, *o*); for underlying \**e* – (*e*, *a*); for underlying \**i* – (*i*, *e*). Here the contrasting sets of allographs prove the scribe was perceiving contrasting phonemes: (*a*, *o*) ~ (*e*, *a*) ~ (*i*, *e*), three sets, three underlying segments.

<sup>12</sup> W. R. Schmalstieg, *Grammar*, 25.

If we represent the overlapping range of vowel graphs on a vowel triangle, we can observe the significance of the overlapping variants. The shaded areas represent allophones that can be spelled ambiguously. They may also focus on the loci of the phonemes in question.



In reality we find complex combinations of the above types. This will be seen clearly when we examine two problems of vowel graph variants below.

How are we to evaluate the complex patternings of graphs, especially for the vowel system? Is the presence of variation, the lack of consistency, evidence for a non-native, incompetent transcription? The variation which we find is not evidence for a "bad" text, for several reasons. For one thing, such variation is typical of many contemporary manuscripts, including those written by native speakers. It is clear, for example, that Old Prussian was written better than contemporary English, including the text of Shakespeare's work. The scribes were not writing according to a "phonemic" principle; rather, they attempted to record as many perceivable distinct sounds as they encountered. These perceived distinctions may or may not have been phonemic in the structural sense. Many subphonemic differences are quite noticeable to native speakers. This includes normal distributional variants, such as [y] and [i] in Russian, but it is especially true for variants arising in ongoing change and appearing under different conditions of style, sentence-level intonation, and stress. Thus the distribution of graphs, especially in the last two types discussed above, can yield valuable information on the allophonic range of Old Prussian phonemes, the changes that were taking place, and the conditions of those changes. The vowel variations recorded in the text imply phonological developments unknown in German, involving sounds unfamiliar to Germans, and they are recorded in a spelling convention differing from the coterritorial German. Finally, the distribution of allophones, and the sound changes implied by the spelling variants, are reasonable phonological patternings which are familiar in other languages. This also argues for the integrity of the spelling.

I would like to discuss two problems of orthographic variation in the Enchiridion in the light of the methodological and theoretical considerations presented in this paper. This discussion will be tentative, in that the statistical data were compiled by hand, and some figures may not be quite exact. Eventually this research will be based on computer analysis.

The first problem is the interpretation of *quo, qua-*, for *ka*. Professor Schmalstieg is the latest to deal with this question. He interprets this as the inconsistent scribal rendering of phonetic consonant labialization, which occurred in Old Prus-



sian after the supposed establishment of palatalization. In his "Old Prussian Grammar" Schmalstieg states,

This phonetic labialization of consonants was misinterpreted by various German-speaking scribes who tried to mark it in a rather haphazard fashion by writing *-u-*, *-ua-*, *-wa-*, *-o-* where one might not expect these letters otherwise<sup>13</sup>.

Schmalstieg's remark applies to the entire body of texts and to all consonants before *\*a*. My own discussion is confined to a subset of his generalization — the Enchiridion, and primarily the consonant *k*. It is necessary to isolate two problems, "haphazard" distribution of graphs, and phonetic labialization. Given this framework, I can state categorically that for etymological *ka-*, the supposed environment of this vacillation, there is absolutely no haphazard distribution of graphs in the Enchiridion. If another page of text were discovered tomorrow, one could predict with a fair chance of accuracy the distribution of *ka-*, *quo*, and *qua-*. Thus, the scribe was not haphazardly recording some allophonic variation, but operating according to spelling rules,

Let us consider the forms which have *qu-* for *k-* in the given context. The first fact is that this variant is associated with the *-ai-* diphthong. Accepting for the sake of argument Schmalstieg's reconstruction of the verb "want" as (*kait-*) Lith. *kaitėti*, we find the verb stem *quoit-* spelled this way twenty-four times, the auxiliary / modal verb *quoi* written six times, the noun *quāits* written eight times. This spelling is also found in the interrogative and relative pronoun: Nom. fem. *quai* occurs four times, *quoi* once, Nom. pl. m. *quai* occurs seventeen times, *quoi* twice. These are the only occurrences of *qu* for *k* in the Enchiridion. (*Quei*, *isquendau*, etc., have *\*kv-*.) There is nothing in the particular environment *ai* which promotes phonetic labialization, as opposed to *-a#*, *-as*, etc., and yet all other forms of the interrogative, *ka*, *kas*, *kasmu*, *kan*, etc., are spelled only with *k*, and occur over one hundred times! Thus we have, not haphazard spelling, but rule-governed behavior: the Nom. case f. and m., is spelled *qu-*, other cases are spelled *k-*.

It is not even possible to save the variation as a phonological development associated with / ai /; the conjunction *kai* occurs with that spelling about sixty times; *kaigi* occurs another fifteen times. Although Schmalstieg phonemicizes *quoi* and *kai* both as / kai /, the odds against a non-systematic, haphazard distribution of these supposed spelling variants are enormous<sup>14</sup>. Either they represent clearly different phonological surfaces to the transcriber, or else he learned very well a spelling rule — / kai / "will" is written *quoi*, / kai / "as" is written *kai*. The latter implies a developed spelling tradition for Old Prussian independent of German.

<sup>13</sup> Ibid., 9.

<sup>14</sup> In fact, less than 1 in 1,000,000.

In arguing for a clear, motivated, non-random distribution of spelling variants in this case, I have not offered any explanation for what we find. In the case of the verb, the etymology may be with Lith. *kviesti*, rather than *kaitėti*, although Schmalstieg's connection with *an / enkaitītai*, "tempted", is a good one. On the basis of the pronoun I believe that under certain conditions the sequence / kai- / developed an epenthetic *u* which had become phonemic in the language of the Enchiridion: hence the interrogative / relative pronoun had two stems, / ka- / and / kva- /, and the verb stem for "want" was / kvait- /. There is much to be said about the possible conditions for this development, but this will be the subject of another paper.

The second problem to be considered is the interpretation of the graphs for etymological *\*ē*, *\*ī*, *\*ei*. I am convinced that the facts of distribution both support the view of the orthography as fundamentally sound, and provide valuable information on an ongoing sound change in the Old Prussian of the Enchiridion.

The following graphs are used for the underlying segments in question: *i*, *ī*, *ij*, *ej*, *ey*, *ei*, *ēi*, *eī*. Each underlying segment is represented by a unique set of graphs, proving that at least three different segments were perceivable. For *\*ē* we find (*i*, *ī*, *ij*); for *\*ī* (*i*, *ī*, *ij*, *ei*, *ey*, *ej*, *ēi*, *eī*); for *\*ei* (*ei*, *ēi*).

An additional conclusion emerges from the data. Because of their significantly different distribution in the two underlying segments *\*ē* and *\*ī* (discussed above), it is highly improbable that the graphs *ī* and *ij* did not have different phonetic values; *ī* represented a long monophthong, *ij* represented a diphthong<sup>15</sup>. (I assume that *i* was an unmarked variant of the long monophthong *ī*.) The strongest evidence for the distinct values of *ī* and *ij* is the spelling of *rikijs*, where we can reconstruct a /j/ in the underlying stem: *\*/rīkīj-/\**. This stem occurs forty times in the Enchiridion with a following vowel (i. e., *rikijan*), and is always spelled *-ij-*. (Incidentally, NB *biātwei*, occurring twelve times, for *\*/bijā-/\**!) The word also occurs twenty-eight times in the Nominative case, spelled *rikijs* twenty-seven times, *rikeis* once. The graph *ī* does not occur at all. Thus, where there is an underlying *\*/īj-/\**, we find only the spelling *ij*. Compare this with a high-frequency *\*ē-* word *grīk-*, where *ī* (twenty-eight times) and *i* (twice) are written thirty out of thirty-seven occurrences (*ij* seven times), or more than eighty percent of the time. This cannot be a random distribution. Either the two spellings reflect a surface phonological contrast, or a transcriber has learned very well a subtle spelling rule for Old Prussian. Neither possibility is consistent with a notion of German scribes casually recording a poorly understood language.

<sup>15</sup> Mentioned as a possibility by Mažiulis, op. cit., 48 (citing Endzelins?).

Another revealing distribution is found with the *ei* diphthongs. Just as the skewed distribution of *ī* and *ij* proves they had distinct values, one cannot overlook the skewed distribution of spellings for *ei* diphthongs. Among the high-frequency stems examined, there are only twelve occurrences of *ei* spelling for underlying *\*ī* in the Enchiridion, little more than four percent of the total, yet we find among these twelve spellings the four variants *geijwas*, *malneyks*, *ainaweydi*, *malneijkans*. Turning to underlying *\*ei*, in seven different high-frequency stems (*dein-*, *geit-*, *seili-*, *prei-*, *deiw-*, and *teis-*) there are two hundred seventy-three occurrences of the *ei* diphthong, yet the only variants we find are *ei* and *ēi*.

The obvious conclusion is that the *ei* from *\*ī* was not identical with the original *\*ei* diphthong. It also seems clear that in its rare appearances in the Enchiridion the letter *y* was not a random variant of *i*, as bizarre as that may seem to some.

It is not necessary to offer a satisfactory linguistic explanation for the variants in question in order to establish their systematic character. In this paper I have hoped merely to demonstrate that the spelling of the Enchiridion represents structured, systematic, scribal behavior, that it is distinct from coterritorial, contemporary German orthography, and is interesting and linguistically informative. In the future I intend to investigate much more extensively the orthography of the Old Prussian monuments, using the computer. However, I cannot resist commenting on the phonological significance of the variants just discussed. The spellings seem to represent an ongoing sound change, a push-chain, in which *\* / ē /* is raised to *\* / ī /*, while *\* / ī /* is diphthongized. This change does not proceed according to a neogrammarian sound law, but is more advanced for some lexemes than for others, and is more frequent in some contexts than in others. Actual occurrences of the segments are strung out along a spectrum of realizations from */ ī /* to */ ei /*. Some occurrences of underlying *\*ē* have been raised so high that they are diphthongized; hence the seventeen percent occurrence of *ij* for *\*ē*; some occurrences of *\*ī* lag behind, remaining monophthongal. Nevertheless, the total areas of the vowel triangle encompassed by the individual realizations of each underlying segment remain distinct, with reflexes of *\*ī* more advanced than those of *\*ē*. Such an explanation for spelling peculiarities in a sixteenth century manuscript could not have been taken seriously before the research discoveries of modern sociolinguistics. The spectrographic data analyzed by Labov, Yaeger and Steiner for American dialects shows that ongoing change can proceed in just this fashion<sup>16</sup>. However, a

---

<sup>16</sup> W. Labov, M. Yaeger, R. Steiner, A Quantitative Study of Sound Change in Progress, NSF-GS-3287, U. Penn., 1972.

pioneering paper in analyzing this phenomenon in the Old Prussian texts is Schmalstieg's work on the Old Prussian vowel system, where he proposes two codes, to account for the variants, an archaic and an innovating code<sup>17</sup>. Further analysis of the texts will yield more interesting and important data on this change, which had a parallel in the English Great Vowel Shift.

## SMULKMENOS

### I

#### Old Prussian *manga*, *mangoson*

To complete the Baltic dossier on *mañglyti*, clarified for us by A. Sabaliauskas, *Baltistica* VII (1971) 65–66, we should note Grunau 81 *manga* 'hure' and 96 *mangoson* 'hurenkindt'. These register an indication of the social connotations carried by this etymon in certain areas during the period of our source documents.

*Eric P. Hamp*

---

<sup>17</sup> W. R. Schmalstieg, *The Phonemes of the Old Prussian Enchiridion*, – *Word* 20/2, 216–217.