"Mr. A. J. Ellis – the pioneer of scientific phonetics in England" (Sweet 1877, vii): an examination of Ellis's data from the northeast of England.

Abstract

Appraisals of Ellis's 'The Existing Phonology of English Dialects' (1889) have been both negative (Wright (1892), Dieth (1946), Wakelin (1972)) and positive (Anderson (1977), Shorrocks (1991)). Typical criticisms are directed at Ellis's method of data collection (via intermediaries), the inaccuracy of the data collected, and the impenetrable nature of the phonetic script employed (the palaeotype). Conversely, it has been pointed out that, regardless of the method of collection, Ellis's data is often considerably more accurate than has been claimed, and that the palaeotype is much less obscure than it first appears.

In view of these contradictory opinions, this paper examines Ellis's data for Northumberland and north Durham in light of the detailed data provided by the Orton Corpus (Rydland (1998)). This comparison enables us to do two things:

1) to check the accuracy of Ellis's data for the region;
2) to shed more light on the exact values of the palaeotype symbols used.

My research suggests that in many cases Ellis's data is remarkably accurate, confirming the importance of Ellis (1889) as a unique contribution to the history of English dialectology, in terms of the data he collected and the methodology he employed. Additionally, comparison with the Orton Corpus data indicates more exactly the way in which the palaeotype has been used. This enables a more precise definition of its phonetic values than is possible in a study such as Eustace (1969), and of the extent to which it encodes both phonological and phonetic information, as suggested by Local (1983).

Introduction

In his 1877 *A Handbook of Phonetics* (p.vii), Henry Sweet describes Alexander J. Ellis as "the pioneer of scientific phonetics in England." Ellis is most well known for his vast *Early English Pronunciation* in 5 volumes, of which Volume 5 (in two parts), *The Existing Phonology of English Dialects Compared with that of West Saxon* (henceforth referred to as Ellis (1889)), is concerned with the regional dialects of English spoken in Britain in the second half of the 19th century. This volume presents a huge amount of primarily phonetic and phonological data from over 50 years before the Survey of English Dialects, and the purpose of this paper is to determine the value of this data for the English dialectologist, and the importance of Alexander J. Ellis in the history of English dialectology.

Why I'm interested in Ellis

My own research interests lie in the historical phonology of the dialects north-east of England. In particular, my PhD research examines the origins and history of the merger of the NURSE and NORTH lexical sets in Tyneside and Northumberland English. In an attempt to reach even further back into the history of this phenomenon, I examined first the relatively accessible Wright (1905), but soon realised that most (perhaps all) of Wright's data for the north-east is derived from Ellis (1889). On examining Ellis (1889), I was immediately amazed at the amount of data contained therein. Using this data was another matter, hidden as it was in a dense mass of text and veiled by the an esoteric phonetic script called the *palaeotype*, so that immediate results where impossible. When I finally began to get to grips with Ellis's data, I was initially impressed that it seemed to match the more recent data at my

disposal, but being aware of the negative comments of a number of notable dialectologists, I was concerned as to the accuracy of Ellis's data. In this paper, I examine a small part of Ellis's data for the dialects of north-east England in an attempt to determine how accurate the data really is.

Views on Ellis

Appraisals of Ellis's *The Existing Phonology of English Dialects* (1889) have been both negative and positive. I'm not going to rehearse these views in detail here, since they are easily retrieved from the references, and Anderson (1977) and Shorrocks (1991) in particular give surveys of the various opinions of Ellis's work. Suffice to say that some very important names in the history of English dialectology were scathing in their remarks about Ellis's work. Wright (1892) famously states of Ellis that

"If his rendering of the dialect test of other dialect speakers is as inaccurate as that of the Windhill dialect, the value of these tests for phonetic and philological purposes is not very great." (p.174),

and Dieth (1946) states that

"This book may well be termed a tragedy: a stupendous piece of work lasting fourteen years, born of a great vision, but carried out with inadequate means; a huge store of information which every dialectologist consults, but, more often than not, rejects as inaccurate and wrong" (p.76).

Criticisms are directed at Ellis's method of data collection (via intermediaries such as local vicars and other speakers who did not speak dialect themselves), the inaccuracy of the data collected (either as result of the use of these untrained intermediaries or by Ellis himself), and the impenetrable nature of the phonetic script employed (the complex *palaeotype* invented by Ellis for the representation of the sounds of English). Despite their criticisms, both Wright and Dieth use Ellis's data to good effect: Wright by incorporating a large part of it into his own Dialect Grammar, and Dieth by using Ellis's data to create dialect maps which compare favourably with the later maps based on the SED data.

Other dialectologists have found the data presented in Ellis (1889) to be more reliable. Again I refer you to the original articles by Anderson (1977) and Shorrocks (1991), where they argue that although there are problems with Ellis's data, the situation is by no means as dire as described by Wright and Dieth. They point out that, regardless of the method of collection, Ellis's data is often considerably more accurate than has been claimed, and that it frequently compares favourably with their own and others' more recent data. Similarly, they find that the palaeotype is much less obscure than it first appears (Shorrocks (1991:323) states that "the palaeotype is certainly not the completely impossible system that some have made it out to be").

I'd like to test Ellis's data for the north-east of England (my own area of interest) to see how good or bad it is

So those are the (often contradictory) opinions of a variety of dialectologists on the usefulness of the palaeotype in understanding the history of the English dialects.

Given my present time restrictions, it is not possible for me to dwell any further on the relative merits or demerits of Ellis's methods of data collection and transcription, and what various people have said about them. Rather, I'm going to look at some of Ellis's data more closely in comparison with data gathered by others in order to determine whether Ellis's data is accurate or not, and whether his palaeotype is interpretable or not.

In order to do this, I have done a number of things – I'll talk about each of them in more detail shortly.

1) Firstly, I have selected 2 geographic locations in the north-east from Ellis (1889) for which there is a substantial amount of data, and for which there are more recent data collections to which they can be compared.

2) I have then translated Ellis's palaeotype transcriptions for these two locations into IPA using the system outlined in Eustace (1969), in order to facilitate comparison with the later data.

3) I have then compared the data from Ellis (1889) with data from two more recent sources on the phonetics and phonology of the dialects of the north-east: the Orton Corpus (OC) (Rydland 1998), and the Survey of English Dialects (SED) (Orton, Sanderson, and Widdowson 1962-71).

Having completed these three steps, it will be possible to make a comparative study of Ellis's data with the data from the later collections. If it is to be described as accurate, Ellis's data must closely compare with the later data phonetically, and perhaps more importantly, where there are phonetic differences, some reasonable explanation must be available for these differences. Even if the precise phonetics are not identical, it is desirable that there be systematic correspondences between Ellis's data and the later data from the Orton Corpus and the SED.

It is hoped that this comparative study will allow us not only to assess the accuracy of Ellis's data for the given locations, but that it will also allow us to better understand the nature of the palaeotype and the success of Eustace's (1969) translation of it.

If it is discovered that Ellis's data does compare favourably with the later data, this will reinforce the opinion expressed by Anderson (1977) and Shorrocks (1991) that Ellis's place in the history of English dialectology has not been fully appreciated. On a more specific point, the discovery that Ellis's data does compare favourably with later data would enable me to take my analysis of the NURSE and NORTH merger back to the second half of the 19th century, more than 50 years earlier than the next earliest data allows. Not only would data of such an early date allow for a fuller understanding of the history of the NURSE and NORTH merger, it would also give us a much longer time-frame in which to view the development of the English dialects, helping us to understand more clearly how these dialects have changed through time, and the extent to which they have been subject to external influence from more standard varieties of the language over the last 150 years.

If on the other hand Ellis's data proves to be inaccurate to a great enough degree, then the usefulness of the vast amount of data contained in his work will be

diminished; or at the very best will only be usable with even greater caution than is necessary otherwise.

I hope to show in this paper that, at least for the locations under examination, Ellis's data is sufficiently accurate to allow it to be used to good effect in dialectology. In addition, I hope to confirm the value of Eustace's translation of the palaeotype, and as a result to better understand how Ellis used the palaeotype to represent the phonetics and phonology of English dialects.

Data for the north-east from Ellis (1889)

Ellis (1889) provides a wealth of data for the dialects of the north-east of England. Although much of this consists of brief sentences translated into the relevant dialect and transcribed in the palaeotype (what Ellis called the 'Comparative Specimen' and the 'Dialect Test'), there also exists, for a number of locations, a 'Classified Word List'. This wordlist provides much more extensive data on the pronunciation of a fairly large number of lexical items in the given locations. Of special interest in this comparative study are those locations provided with a 'Classified Wordlist' for which later data (from the Orton Corpus and the SED – see below) exists. Two locations in Northumberland fit this bill: Wark-on-Tyne in North Tynedale, which Ellis describes as characteristic of the dialect 'from Bellingham to Hexham' (Ellis 1889:674), and 'Pitmatic', the speech of the pitmen found 'between rivers Tyne and Wansbeck' (Ellis 1889:674), particularly of Earsdon and Backworth.

Wark-on-Tyne: Ellis's data for Wark was supplied by the Rev. George Rome Hall in 1877, and consists of 660 words in palaeotype.

Pitmatic: Ellis's data for Pitmatic was originally supplied by the Rev. Hugh Taylor, and revised by Mr. J. Taylor and Mr. G.B. Forster, mining engineers from Earsdon and Backworth respectively. It consists of 428 words in palaeotype.

Translation of the Palaeotype

Having selected suitable data from Ellis (1889) for comparison with more recently collected data, the next step is to translate the palaeotype transcription into IPA so that the comparison can be made. In this, we are greatly aided by the detailed study of the phonetic values of the palaeotype symbols made by S.S. Eustace in 1969.

Eustace (1969)

Eustace (1969) is an attempt to provide IPA equivalents to Ellis's palaeotype symbols. Although it is relatively straight-forward to translate Ellis's palaeotype symbols for consonants into IPA, the vowels prove much more difficult, since Ellis did not use modern parameters of vowel description. Eustace (1969), after a thorough examination of the evidence, suggests possible IPA symbols for the palaeotype vowels symbols too. Shorrocks (1991:325) states that "The accessibility of Ellis's material has been greatly enhanced by Eustace (1969)."; it is part of my purposes in this research to determine the value of Eustace's translation with reference to Ellis's data from the north-east of England.

In order that this might be done, I have faithfully translated all of the palaeotype transcriptions for the chosen locations according to the system laid out in Eustace

(1969). This gives us IPA transcriptions for all of the data from the relevant locations, and allows for comparison with later data from these same locations.

Local (1983:2) describes Eustace's attempt to translate the Palaeotype into IPA as 'less than satisfactory'. Local suggests that this is because Eustace has failed to take into account that the palaeotype not only encodes phonetic information, but that it 'is a complex mixture of the phonetic and the phonological' (p.2). I do not dispute this claim, but it is worth pointing out that transcription in IPA is equally a 'mixture of the phonetic and the phonological'; any IPA transcription involves symbols for discrete units (e.g. [p]), and involves a selection of which phonetic features are to be transcribed (whether for the purposes of convenience or relevance to the study at hand). A number of classical dialect studies, including Wright (1892) and Orton (1933) give lists of phonetic forms for the chosen dialect, which are transcribed rather broadly, with minor phonetic variations of the sort which abound in natural speech not recorded. Transcription of this sort contains much phonological, as well as phonetic, information. With this in mind, I do not believe that Local's criticism of Eustace (1969) affects its usefulness.

The comparative study

The only way the accuracy of Ellis's data can be determined is by comparison with later data collected from the same or similar locations. In other words, we need to make a comparative study of Ellis's data with comparable data collected by others at a later (although hopefully not too much later) date.

We are very fortunate in having detailed records of the phonology of the traditional dialects of Northumberland for the first half of the 20th century. Firstly we have the Orton Corpus (edited and published by the late Kurt Rydland (1998)), secondly the SED. These two sources give us an immense amount of data on the pronunciation of many words in these dialects some 50-75 years after Ellis's data was gathered.

Having this quantity of data from the north-east allows us to compare Ellis's data directly to data gathered by other dialectologists at two later stages, data which has been transcribed in the IPA. It is my intention to show here that the data from the later Orton Corpus and SED allows us to verify the accuracy of Ellis's transcriptions and give us insight into the nature of the palaeotype transcription system itself.

The Orton Corpus

The Orton Corpus, published as Rydland (1998), is a very substantial dictionary of the traditional rural dialect of 35 localities in Northumberland and north Durham. The data for this dictionary was collected between 1928 and 1939 by and under the auspices of Harold Orton, and provides detailed phonetic transcriptions of an average of 990 words per location (although there is a lot of variation above and below this figure, depending upon location).

For the present purposes, the most important thing about the Orton Corpus is that it provides a significant amount of data for a number of locations in Northumberland which are very near (in geographical terms) to locations for which Ellis provides us with a significant amount of data, and which are very near to a number of the SED Northumberland locations. This fact allows us to compare Ellis's data for these locations with the substantial Orton Corpus data, and with the later SED data.

Although Wark-on-Tyne is one of the locations in the Orton Corpus, there is almost no data available for it (only 58 words are recorded for this location). However, there is a substantial amount of data for the nearby town of Bellingham (only 4 miles further north), for which 1180 words have been recorded. I use this Bellingham data in the comparative study presented here. Rydland (1998) records that the data for Bellingham was gathered in 1929-30 by Harold Orton. This location is coded BLH.

Similarly, the Orton Corpus does not give data for the village of Earsdon, but it does give a substantial amount of data from the village of Hartley, which lies 2 miles to the north-east. Phonetic forms for 1833 words are recorded. Rydland (1998) records that the data for Hartley was mostly gathered in 1932-33, again by Harold Orton. This location is coded HTL.

The SED

The Survey of English Dialects (Orton, Sanderson and Widdowson 1962-71) needs no introduction. This survey gives us a substantial amount of phonetic data for the traditional rural dialects of Northumberland and north Durham (9 locations in total).

Two of the SED locations in Northumberland and north Durham correspond exactly to locations in Ellis (1889) for which there is a substantial amount of data. These locations are Wark-on-Tyne (Nb5), and Earsdon (Nb6). As can be seen in Table 1, the data for these two locations was gathered in 1953 and 1954 by Stanley Ellis, and comprises of approximately 1330 words for Wark, and 1010 words for Earsdon, phonetically transcribed.

Table 1: Sources of data for this study.

Source	Location	Date	Collector	# of Words
Ellis (1889)	Wark (North Tynedale)	1877	Rev. George Rome Hall	660
Ellis (1889)	'Pitmatic' (south-east Northumberland, in particular Earsdon and Backworth)	1877	Rev. Hugh Taylor, Mr. J. Taylor (mining engineer), Mr. G.B. Forster (mining engineer)	428
Orton Corpus	Bellingham	1929-30	Harold Orton	1180
Orton Corpus	Hartley	1932-33	Harold Orton	1833
SED	Wark	1953	Stanley Ellis	1330
SED	Earsdon	1954	Stanley Ellis	1010

Reasons for differences

Having translated Ellis's palaeotype transcriptions into IPA using the system outlined in Eustace (1969), it is now possible to compare Ellis's data with the data from the later OC and SED.

Not surprisingly, there are many similarities between them. What concerns me more here are the differences that exist. It must be mentioned at this point that there are also many differences between the OC and the SED data, which I shall demonstrate shortly. Such differences are not necessarily problematic, as long as they can be explained. In order to determine the value of Ellis's data, the differences between it and the data from the later sources must be explained.

1) Differences due to subsequent internal change

As Table 1 shows, the data collected by Ellis for Pitmatic and Wark is over 50 years older than the Orton Corpus data, and approximately 75 years older than the SED data. It seems not unreasonable that over these spans of time, the effects of language change will be noticeable. In the next section, I discuss language change that can clearly be related to external influence on the dialect; in this section I briefly discuss the kinds of changes which have occurred independently of identifiable external influence: phonetic and phonological change internal to the dialect itself, whether geographically limited, or common to a larger geographical area. Two probable examples of internal change in the dialect are:

a) the change in the low-mid back rounded short vowel in words such as *cross*, *hop* and *lonning*, as exemplified in the following data:

Table 2: Change of /ɔ/.

Ellis	Eustace 1969	Orton Corpus (BLH)	SED (Nb5: Wark)
o	ɔ	ɔ ~ ɔ̟ ~ œ	ɒ ~ ɔ ~ œː

It seems quite plausible that this sort of change could have happened in the time frame discussed (although there is always the possibility, which I discuss further below, that Ellis's palaeotype transcriptions ignored minor sun-phonemic phonetic variation, so that although the results of the change might already be present in Ellis's data, it might not be indicated in the transcription).

b) the change of final unstressed *–er* in words such as *after*, *daughter*, *father*, *finger* and *mother*:

Table 3: Change of final –er.

Ellis	Eustace 1969	Orton Corpus (HTL)	SED (Nb6: Earsdon)
o*r*	ɔʁ	ɐ ~ ə ~ ɐ	ə(ʁ)

Again it seems plausible that this sort of change could have taken place within the given time-frame.

A comparison of Ellis's data with the data from the OC and the SED reveals numerous small differences of this sort, which may be explained by internal phonetic (and ultimately phonological) change. The correspondences in Tables 7 and 8 show that despite these frequent minor differences, there is usually a systematic correspondence between the phonetics of Ellis's data and the later data.

2) Differences due to externally motivated change

If the SED was to be repeated now, at the beginning of the 21st century, it would be difficult, perhaps even impossible, to find speakers who speak dialect in the same way as the SED informants did in the 1950s. Not only would there have been an accumulation of internally motivated phonetic and phonological changes, there would also have been a great number of changes due to the influence on the dialect of Standard English. This kind of externally motivated change typically takes the form of replacement of a phonetic or phonological pattern in the dialect by one which is more widespread in the wider speech community, and often by one which is more

phonetically or phonologically similar to Standard English as it is spoken in that region. This process may well account for some of the differences between Ellis's data and the data of the later OC and SED. One example of this is the replacement of /ɛ/ by /a/ in a number of words in Northumberland English, which brings the phonological distribution of these phonemes nearer to that of Standard English:

Table 4: External influence in the dialects of the north-east (after, branch, father).

	Ellis	**Eustace 1969**	**OC**	**SED**
Pitmatic	ɛftor	ɛftɔʁ	ɛftɐ	aftə
Wark	brɛntʃ	bʁɛntʃ	bʁɛntʃ	bʁanʃɪz (pl.)
Pitmatic	fɛdhor	fɛðɔʁ	fɛðɐ, faðɐ	faðəʶ

Note that instances of /ɛ/ in Northumberland English which correspond to /ɛ/ in Standard English do not change in this way.

3) Transcriptional differences (interpretational differences)

By transcriptional or interpretational differences, I refer to such differences as arise due to the aims and methods of the transcriber of the particular data set. So for example, one transcriber might feel it relevant to record certain phonetic details which another does not; one transcriber might interpret the phonetics in a slightly different way than another; one transcriber might make a broader phonetic transcription than another, hence including more phonological information in his transcription, and so on. At a more trivial level, different transcribers might use different IPA symbols to represent the same sound or sequence of sounds. I give some examples of these kinds of differences between the corpora:

Table 5: Differences in transcription practice.

	Ellis	**Eustace 1969**	**OC**	**SED**
Syllabic consonants marked?	yes	yes	yes	no
Final aspiration of stops marked?	no	no	no	yes
NAME diphthong	ĭɛ	ĭɛ	i̯ɛ	jɛ
[ɪ]	*i*	ɪ	ɪ	ɩ

These are the sort of differences that can be found between any two sets of data collected and transcribed by different researchers.

4) Eustace (1969)

Despite the enormous value of Eustace (1969) as a means of understanding Ellis's palaeotype, it is perhaps best to consider Eustace's translation as a starting point rather than the be-all-and-end-all of the matter. It is perfectly possible that the same palaeotype symbol could mean different things, depending upon who was transcribing the data, and what data was being transcribed. The exact values of the palaeotype symbols for any given location may well be better understood when a full comparative study with later data is carried out.

In addition, Eustace (1969) does not give all the answers that are required to understand the variations in palaeotype transcription which occur from location to location. For example, the vowel symbol (œ$_1$), which is common in the palaeotype transcriptions for Northumberland, cannot satisfactorily be interpreted using only Eustace (1969). Eustace (1969) interprets palaeotype (œ) as equivalent to IPA [œ], and the diacritic ($_1$) as equivalent to the IPA lowering diacritic [˕], so that (œ$_1$) by Eustace's system should be equivalent to IPA [œ̞]. However, if Ellis's own description of this vowel (as some kind of high-mid centralised rounded vowel), and the IPA symbols used in the OC and SED for this vowel ([ɵ] and [ɤ] respectively) are compared, it can be seen that Eustace's system does not capture every nuance of the palaeotype perfectly.

5) Phonetic Variation

As anyone who has ever attempted to analyse the phonetics of human speech will know, it is replete with variation, both between speakers and within the speech of individuals. This variation may have many reasons: geographical origin of the speaker; social factors such as age, gender and social class; or it may be the result of idiolectal variation. Phonetic variation for any or all of these reasons may explain the differences between the data of different corpora. It is hoped that variation due to geography and social factors will be minimal in my comparison of Ellis's data with the OC and SED data, since the data was recorded at similar or identical geographical locations, and the aim of all three surveys was to record the most archaic form of the dialect. In terms of idiolectal differences, the OC and the SED allow us to relate phonetic forms to individual speakers to a certain extent, so that it may be possible to isolate idiolectal differences. The situation in Ellis (1889) is more problematic in this respect however. In the case of Ellis's Wark-on-Tyne data for instance, we are informed that it applies "to most of the district of North Tynedale from Bellingham to Hexham" (p.674), and that the data was provided by the Rev. George Rome Hall "after 17 years acquaintance with the dialect" (p.674). It follows from this that Ellis's data for Wark-on-Tyne does not represent the speech of any one individual, but is rather an idealised version of typical North Tynedale dialect. As such, phonetic variation is much less likely to be recorded. A similar situation holds for Ellis's Pitmatic data too.

Hence we must be aware that phonetic differences between Ellis's data and the OC and SED data may be the result of phonetic variation (within and between speakers) being recorded in the later surveys, but not in Ellis (1889).

6) Phonemic Variation

As well as frequent phonetic variation in human speech, there is also a considerable amount of variation at the phonemic level. For example, the Orton Corpus records two forms of the word *snow* at BLH: [snaː] and [snøː]. These two forms not only differ phonetically, but also phonemically. If we compare this to Ellis's data for the same word, we find the transcriptions (snaa) and (sn*oo*) ([snɑ̟ːː] and [snɵ̞ː] according to Eustace 1969). In situations like this, the two data sets are directly comparable. It is often the case however that when there are two (or more) possible phonemic variants of a word, only one of these is recorded in a particular data set. When

another comparable data set also only records one of the phonemic variants, but in this case a *different* one, we get a mismatch between the two data sets. For example, Ellis only records the form (d*roo*) ([dʁo̯ː]) for *draw* at Wark, whilst the SED only records the form [dʁaː]. Although the SED data is quite different from Ellis's data, it seems likely that this is because Ellis has recorded one of the possible phonemic variants of *draw*, whilst the SED has recorded another of the possible phonemic variants. Our suspicions are confirmed when we bring in the Orton Corpus data from BLH, which records both [dʁaː] and [dʁøː].

7) Errors

For the purposes of determining the accuracy of Ellis (1889), the most important differences between Ellis and the later OC and SED are those which are the result of some kind of *error*. I use the term *error* to describe a number of phenomena which may lead to problematic differences between Ellis's and the later data, differences which, if they are found to be sufficient in number, will greatly reduce the value of Ellis (1889) as a source of data for the dialects of the north-east and of Britain as a whole. In what follows, I discuss a number of ways in which errors might have crept into Ellis's data.

Typographical errors

Ellis's *Existing Phonology of English Dialects* (Part V of his *Early English Pronunciation*, in two volumes) has a total of 835 pages. Given that the typeface is rather small and cramped, and that a considerable proportion of the text is in the typographically complex palaeotype, we might expected there to be numerous typographical errors in the data under examination. Although the *Existing Phonology of English Dialects* is typographically complex indeed, errors of this sort appear to be rare.

Mixing up of social dialects

Ellis records that the aim of his 1889 survey is "to determine with considerable accuracy the different forms *now*, or *within the last hundred years*, assumed by the descendants of the same original word in passing through the mouths of uneducated people, speaking an inherited language, in all parts of Great Britain where English is the ordinary medium of communication between peasant and peasant." (p.1). He further states (p.3) that "the peasantry throughout the country have usually two different pron[unciations]., one which they use to one another, and this is which is required; the other which they use to the educated, and this which is their own concept of rp., though often remarkably different from it, is absolutely worthless for the present purpose." Since a similar aim underlies the OC and SED surveys, any failure on the part of Ellis to collect "that which is required", i.e. the correct social dialect, would potentially provide non-comparable results.

Although Ellis may know the kind of English which he is looking for, the fact that he often used intermediaries from higher social classes is a source of potential error. For example, Ellis's data for Wark-on-Tyne was provided by a vicar who, we can presume, spoke some form of Standard English some or all of the time. Were it the case that the Standard English speaking intermediaries failed to appreciate a phonetic/phonological difference of the dialect spoken by their

social inferiors, or were it the case that the Standard English speaking intermediaries failed to appreciate that certain phonetic/phonological differences which held in their own speech were not to be found in the speech of their social inferiors, then the data which they passed on to Ellis would have a mixture of features representative of the dialect and features representative of the speech of higher social groups.

Thankfully there are no definite examples of this kind of feature mixing in the Wark and Pitmatic data examined here.

Mixing up of regional dialects

In Ellis's Classified Wordlist, the data for several locations is often presented side-by-side, with individual transcriptions preceded or followed by a code identifying the geographical origin of the form (see the reproduction of Ellis's Wark and Pitmatic data in the hand-out). Any error in the placement of these location codes, or any omission of the codes, will give false or ambiguous correspondences between phonetic form and geographical location. One such example, which is thankfully very transparent, is found in the Classified Wordlist item 594 *boot*, where the forms (bíiɐt) and (bĭœ$_1$t) are given without location codes. Comparison with other examples in the Wordlist allows us to identify (bíiɐt) as a Wark form, and (bĭœ$_1$t) as a Pitmatic form, but other less transparent errors of this sort might not be so easily recognised or remedied.

Errors in phonetic judgement and transcription

Whether data was gathered by Ellis himself or by an intermediary, there is always the possibility the data collector failed to appreciate the exact phonetics of the form being recorded, or made an error in his transcription of those phonetics. In cases where an intermediary was involved, the potential for this kind of error is compounded since the data is passing through two sets of hands, and Ellis, as the final recipient of the data, has to interpret and perhaps give palaeotype form to the transcriptions of the intermediary.

Analysis

These are some of the ways in which Ellis' data might differ from the later data sets. At this point I attempt to quantify the degree to which each of these factors is responsible for differences between Ellis, the Orton Corpus, and the SED. In order to make this a manageable task, I consider only the stressed vowel or diphthong, or the stresses vowel or diphthong followed by /r/, for each word.

Since it is often difficult to determine which of *subsequent internal change*, *transcriptional differences*, *phonetic variation*, or *Eustace (1969)*'s interpretation of the palaeotype are responsible for many of the minor differences between Ellis's data and the later data, I group these factors together as *Minor Differences*.

Correspondences between Ellis's phonetic transcriptions and later data

In Tables 7 and 8, I have summarised the correspondences between Ellis's phonetic transcriptions for the stressed vowels and diphthongs, and vowels and diphthongs followed by /r/, and the transcriptions from the later data sources. In order to make this comparison more intelligible, I have not included those cases where the more

modern data shows some kind of phonetic or phonemic substitution of the vowel indicating external influence (as was discussed above).

I hope you'll agree that the correspondences between Ellis and the later sources is quite good. Where the later data sources show a profusion of phonetic variants, the phonetic differences involved are not great.

If it is remembered that the later data sources record the speech of individuals, with all of the phonetic variation that this entails, and that in the time between Ellis's data and the later data a number of low-level sound-changes may have taken place, we can see that Ellis's transcriptions for the vowels compare very well with the later data. Indeed, some of the phonetic variation found in the later data sources is matched by phonetic variation in Ellis's data (see for example Ellis's ($œ_1 \sim u_1$) and (é*i* ~ ĕ*i* ~ ɛ́*i* ~ ə́*i* ~ á^1*i* ~ á*i*)).

It is also possible to see how Ellis's transcriptions, and indeed the later transcriptions, also encode phonological information. Although the OC records different allophones of /iː/ in non-final and final positions, Ellis does not, nor does the SED. One reason for this may be that neither Ellis nor the SED felt it necessary to transcribe such a low-level, sub-phonemic difference (although of course, the change of /iː/ to a diphthong may not yet have taken place word-finally at the time Ellis was gathering his data).

Quantification of the differences

The following table and graphs show the percentage of forms which are the same or different between data sets (stressed vowels and diphthongs or stressed vowels and diphthongs followed by /r/ only). Note that not only have I made a comparison of Ellis's data with the Orton Corpus and SED data, I have also compared the Orton Corpus data with the SED as a control. (Only a small part of the Orton Corpus data and the SED data has been compared, i.e. that part where both of these sources record variants also recorded by Ellis. A larger scale comparison of these two data sets would be possible, but lies outside the scope of this study). This comparison will allow us to appreciate the kinds of difference between any two comparable data sets collected by different people at different times.

Table 6: Data from Ellis (1889), the Orton Corpus and the SED Compared

	Ellis/BLH	Ellis/Nb5	BLH/Nb5	Ellis/HTL	Ellis/Nb6	HTL/Nb6
Phonet. Ident.	21.4	24.8	28.8	21.0	23.7	24.7
Minor Diff.	68.9	61.3	66.7	64.9	61.8	69.7
Phonemic Var.	3.3	6.0	2.7	4.9	3.6	0.6
Extern. Infl.	4.6	5.8	1.4	7.9	9.8	3.1
Unexplained	1.8	2.1	0.4	1.3	1.1	1.9

Figure 1: Stressed Vowels in Ellis's Wark, Orton Corpus BLH and SED Nb5 Compared

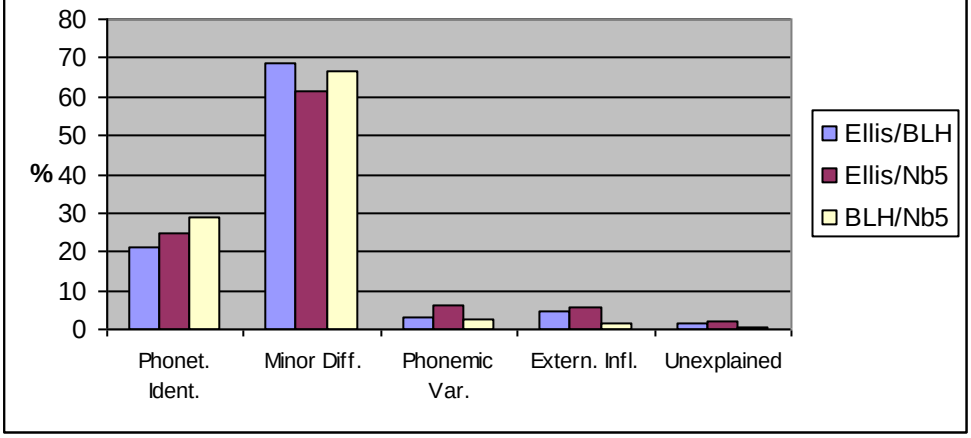
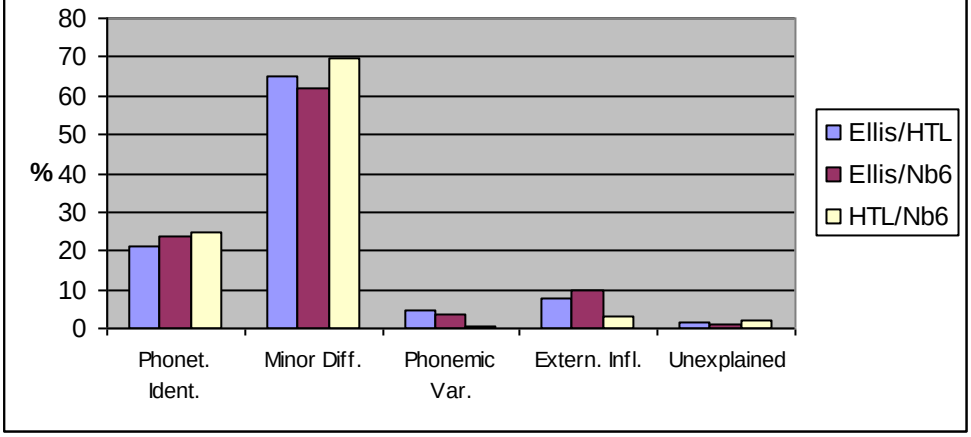


Figure 2: Stressed Vowels in Ellis's Pitmatic, Orton Corpus HTL and SED Nb6 Compared



Key:
Ellis/BLH: Ellis's Wark data compared with the Orton Corpus BLH data
Ellis/Nb5: Ellis's Wark data compared with the SED Nb5 data
BLH/Nb5: the Orton Corpus BLH data compared with the SED Nb5 data
Ellis/HTL: Ellis's Pitmatic data compared with the Orton Corpus HTL data
Ellis/Nb6: Ellis's Pitmatic data compared with the SED Nb6 data
HTL/Nb6: the Orton Corpus HTL data compared with the SED Nb6 data

Phonet. Ident.: cases where the stressed vowel in the first data set is identical to a recorded form in the second data set.
Minor Diff.: cases where the stressed vowel in the first data set is different in a minor way due to one or all of *subsequent internal change*, *transcriptional differences*, *phonetic variation*, or *Eustace (1969)*'s interpretation of the palaeotype – see Tables 7 and 8 for the correspondences.

Phonemic Var.: cases where the second data set records an alternative phonemic variant than the first data set due to phonemic variation in the dialect.
Extern. Infl.: cases where the second data set records an alternative phonemic variant than the first data set due to subsequent external influence on the dialect.
Unexplained: cases where the two data sets differ without explanation. This category includes any errors in the data sets.

Discussion

The data I have presented in the tables and graphs above allow us to determine the degree of accuracy or inaccuracy of Ellis's data in comparison with the more recent sources. Firstly, they quantify the amount of phonetic identity between Ellis's data and the later data, and the phonetic identity between the two later data sets themselves. Note that the phonetic identity between Ellis's data and the two later data sets ranges between 21.0% and 24.8% at the two locations under examination. If we compare this with the phonetic identity between the data from the Orton Corpus and the SED, we see that the figures are quite similar (28.8% identity between the OC and SED in North Tynedale, 24.7% identity between the OC and SED in south-east Northumberland). Hence Ellis's data is no less accurate than the later data sets in this respect.

Secondly, the table and graphs above quantify the percentage of words which are different in some minor phonetic or phonological way (as detailed in the correspondences in Tables 7 and 8). Note that the degree of minor differences between Ellis's data and the later data sources ranges from 61.3% to 68.9%. If we compare this with the minor differences between the OC and SED, we again see that the figures are comparable (66.7% between the OC and SED in North Tynedale, 69.7% between the OC and SED in south-east Northumberland). Again Ellis's data is no less accurate than the later data.

Thirdly, the table and graphs above quantify the percentage of words which differ between the various sources due to greater phonemic difference, whether as a result of external influence on the dialects, or as a result of different phonemic alternants being recorded in the different surveys. Notice that the figures for these kinds of difference are low (always less than 10%), and that again the figures for the comparison of Ellis with the later data sources is comparable to the figures for the comparison between the two later data sources. Again Ellis's data is no less accurate than the later data.

Finally, the table and graphs above quantify the number of words which have differences between the various sources which remain unexplained. One explanation could be that some of the data is inaccurate. Perhaps the most striking thing about the figures here is that they are very low indeed: never any higher than 2.1%. More importantly, the figures for the comparison of Ellis with the later data sources, and the figures for the comparison between the later data sources, are comparable. That is, Ellis's data is no more inaccurate than the data from the Orton Corpus or the SED.

Given the accuracy of Ellis's data for these locations in the north-east of England, we are now in a position to do a number of things. Firstly, we can use the data to better understand the phonetic and phonological history of these dialects. This enables us

to take the account of their phonological history back to the middle of the 19th century, more than 50 years previous to what would otherwise have been possible.

Secondly, the accuracy of Ellis's data allows us to make a better judgement of the phonetic values of the palaeotype symbols employed, the phonological information they encode, and the accuracy of Eustace (1969)'s attempt to provide an IPA translation of the palaeotype. Perhaps the most obvious finding in this respect is that Eustace's translation of the palaeotype is by and large supported by the comparisons made in this paper. However, the comparative data may indicate that Eustace's translation is not always correct for the north-east data. For example, Eustace translates the palaeotype symbols (a) and (aa) as IPA [ɑ̟] and [ɑ̟ː]. Although it is possible that these are correct values, the corresponding vowel in the Orton Corpus and the SED is always a front [a] or [aː], and in the case of the Hartley and Earsdon data is sometimes as front as [æ] and [æː]. Although it is possible that there has been some forward movement of this vowel between Ellis (1889) and the later staudies, it is also possible that Eustace's translation of the palaeotype symbols (a) and (aa) is not correct, or at least is not correct for the north-east data.

Conclusion: the place of Alexander Ellis in the history of English dialectology and the value of his *The Existing Phonology of English Dialects*

The primary purpose of this paper is to assess the accuracy of Alexander J. Ellis's data for 2 locations in the north-east of England in order to assess his importance in the history of English dialectology. A secondary consideration was to reach a better understanding of the exact values of the palaeotype symbols as used for the data from the north-east, and to evaluate the translation of the palaeotype suggested by Eustace (1969).

From the data presented above, it is clear that Ellis's data (for the two locations under consideration at any rate) is remarkably accurate, and compares favourably in terms of this accuracy with the later Orton Corpus and SED collections. Where differences do exist between Ellis and the later data sets, they are usually the result subsequent phonetic changes, and the rather idealised data presented by Ellis in comparison with the very rich and phonetically varied data from the later corpora.

Given this accuracy, it is clear that the dialectologist concerned with the history of the north-east dialects, and with the history of the English dialects generally, cannot afford to ignore Ellis's data no matter how problematic it at first appears. Since Ellis's is usually the only data available for the phonetics and phonology of most British regional dialects in the second half of the 19th century, Ellis's importance in the history of English dialectology is even greater.

Sweet (1887:vii) stated that Alexander J. Ellis was "the pioneer of scientific phonetics in England". I would add to this that he was also the pioneer of dialectology as we know it today in Britain. As Shorrocks (1991:321) comments, Ellis (1889) "was the only piece of work that even remotely resembled a complete survey of the varieties of English spoken in Great Britain prior to the Survey of English Dialects". I hope I have shown here that although this "stupendous piece of work" (Dieth 1946) was carried out 75 years before the SED, it produced results which compare very well indeed with this and other later surveys.

Table 7: Vowel correspondences between Ellis's Wark and later data.

Ellis	Ellis IPA	Orton Corpus (BLH)	SED (Nb5: Wark)
a	ɑ̣	a _D#: æ̨	a _D# æˑ ~ æˑᵊ ~ aˑ ~ a
aa	ɑ̣ː	aː	aː ~ aˑ
ái ~ á[1]i ~ ə́i ~ E *́i ~ ěi ~ éi*	ɑɪ ~ ɑ̣ɪ ~ ɜɪ ~ ɛɪ ~ ɛ̆ɪ ~ ɐ̟ɪ	ai ~ æi ~ ɛi ~ ɛ̆i ~ ěiˑ ~ ěiː ~ ɐ̟iˑ	aɪ ~ ɛ̨ɪ ~ ɛ̈ɪ ~ ɛɪ ~ eɪ
ɐ	ə	ə	ə
E	ɛ	ɛ	ɛ
ee ~ éeɐ ~ éeɐ	eː ~ eːə ~ ɐ̟ːə	eː~ eˑ ~ eːə	eː ~ ɐ̟ː ~ eˑᵊ ~ ɐ̟ˑᵊ
i	ɪ	ɪ	ɪ
ii	iː	iˑ ~ iː ~ i̯ː *final*: ěiː	iː *final*: iː ~ ɛ̨ɪ
íiɐ	iːə	i̯ə ~ iː	ɪə
íu	iu	ĭu ~ iŭ	juː ~ ɪuː
o	ɔ	ɔ ~ ɔ̣ ~ œ	ɒ ~ ɔ ~ œː
oo ~ óoɐ	ɔ̣ː ~ ɔ̣ːə	oː ~ øː ~ øə ~ øːə	øː ~ œː
óu	ɔʊ	ɔu ~ œu	ɔɷ
u[1] ~ œ[1]	ʊ̟ ~ œ̟	ʊ(ˑ)	ɷ ~ ɷ̣ ~ ɤ ~ ø ~ øː ~ œː
uu	uː	uˑ ~ uː *final*: œu ~ ŏuː	uː
úuɐ	uːə	uə	ɷ̈ə
a*r* ~ aa*r*	ɑ̣ʁ ~ ɑ̣ːʁ	ɑː	aᵡː ~ ɑᵡː
ee*r* ~ *eer* ~ *éor* ~ *éeor* ~ *eeor*	ɐ̟ːʁ ~ eːʁ ~ ɐɔʁ ~ eːɔʁ	eɐ ~ eɒ	eɔᵡ ~ eˑɔᵡ ~ ɐ̨ɔᵡ~ ɛ̣ɔᵡ ~ ɛəᵡ ~ ɛˑəʁ ~ ɛɔᵡ
ii*r* ~ íi*r* ~ ío*r* ~ íio*r*	iːʁ ~ iɔʁ ~ iːɔʁ	iɐ ~ iɒ	ɪɔᵡ
o*r*	ɔʁ	ɔ̣ː *final unstressed*: ɒ	ɔᵡː *final unstressed*: ə ~ ɔ ~ ɔᵡ
ó*uɐr*	ɔʊəʁ	œu(w)ɒ ~ ɔuɒ	ɔɷɔᵡ
uu*r* ~ uuo*r* ~ úuo*r*	uːʁ ~ uːɔʁ	ɷɐ ~ ɷɒ	uɔᵡ

Table 8: Vowel Correspondences between Ellis's Pitmatic and later data.

Ellis	Ellis IPA	Orton Corpus (HTL)	SED (Nb6: Earsdon)
a	ɑ̣	a ~ æ _D#: æ ~ æˑ ~ æː ~ æ̨ː	a _D#: a ~ æːᵊ
aa	ɑ̣ː	æ̨ː ~ æ̣ː ~ æː ~ aː	æːᵊ ~ aː
á[1]*i* ~ ə́*i* ~ ᴇ́*i* ~ é*i*	ɑ̣ɪ ~ ɜɪ ~ ɛɪ ~ e̞ɪ	ai ~ æi ~ äi ~ ɛ̈i ~ ɛi	aɪ ~ ɛɪ
ɐ	ə	ə	ə
ᴇ	ɛ	ɛ	ɛ
ee	eː	eː ~ eˑə	eːᵊ ~ eˑə
i	ɪ	ɪ ~ ɻ *final*: ɪ ~ i	ɪ
ii	iː	iː ~ iˑ ~ j̈ː ~ e̞iː ~ ěi ~ ə̆iː *final*: e̞iː ~ ěiː ~ e̞i	iː
ĭᴇ	ĭɛ	j̆ɛ ~ j̆e(˙)	jɛ
ĭœ[1]	ĭœ̞	j̆ə(˙) ~ j̆ʊ ~ j̆u	jɤ(˙)
íu	iu	je̞u̇ː ~ jə̆uː	ɯː
o	ɔ	ɔ̣ ~ œ	ɒ
œ[1] ~ *u*[1]	œ̞ ~ ʊ̞	əˑ ~ əː ~ ʊ̈ ~ ʊ̡ ~ ʊ(˙)	ɤ(˙) ~ ɷ
ó*u*	ɔʊ	ɔu ~ ɔ̣u ~ œ̈u ~ œʊ ~ œu	ɒɷ
uu	uː	uː ~ uˑ ~ ə̆uˑ ~ əuə *final*: ə̆uː ~ əu ~ ə̆u ~ œu	uː
aa*r*	ɑ̣ːʁ	ɑː	aᵚː
ee*r* ~ *eer* ~ *éor*	e̞ːʁ ~ eːʁ ~ ɐɔʁ	eˑɐ ~ eɐ ~ eɐ ~ eˑə	e(˙)ɔᵚ ~ e(˙)əᵚ ~ eə
é*ir*	e̞ɪʁ	aiɐ ~ æiɐ	aɪə ~ ɛɪəᵚ
ii*r* ~ ío*r* ~ iio*r*	iːʁ ~ iɔʁ ~ iːɔʁ	iˑɐ ~ iˑɐ ~ iə	ɪə(ᵚ)
o*r*	ɔʁ	ɔ̣ː *final unstressed*: ɐ ~ ə ~ ɐ	ɔᵚː *final unstressed*: ə(ᵚ)
óuʁ	ɔʊəʁ	ɔuwɐ ~ ɔuə	ɒɷə
uuo*r* ~ úuo*r*	uːɔʁ	ɷɐ	uːəᵚ

Table 9: Some examples of Ellis's Pitmatic compared with later data.

Word	Palaeotype	Eustace 1969	Ref.	Orton Corpus (HTL)	SED (Nb6)
all	aal	ɑ̟:l	335	æ̞:, æ̟:l, æ:l, a:, a:l	æ:ᵊ, æˑᵊl, a:l
any	on*i*	ɔnɪ	194	œni, œnɪ, ɔ̟ni, ɔ̟nɪ	ɒnɪ
bone	bĭᴇn	bĭɛn	118	bʝ̈ɛn, be:n	bjɛn
boot	bĭœ$_1$t	bĭœ̟t	594	bʝ̈ɵt	bjɤts
death	diith	di:θ	368	di:θ	di:θ
eleven	il*i*·v'n	iˈlɪvn̩	280	əlɪvn̩, lɪvn̩	əlɪvən
fire	f*éir*	fɐ̟ɪʁ	709	fæiɒ	faɪə
first	for*s*t	fɔʁst	701	fɔ̟:st, fɔ̟:s, fɔ̟:ʂt	fɔᵸ:st
four	f*óuʁr*	fɔʊəʁ	420	fɔuwɐ	fɒɷə
ground (n.)	g*r*u$_1$nd	gʁʊ̯nd	616	gʁɷnd, gʀɷnd	gʁɤnd
half	h*ee*f	he:f	334	hæ̞:f, ha:f	haf, hæˑᵊf
het (= hot)	hᴇt	hɛt	132	hɛt	hɛtʻ
house	huus	hu:s	663	huˑs, hu:s	hu:s
ice	*éi*s (ʔəˊ*i*, á^1*i*)	ɐ̟ɪs (ʔɜɪ, ɑ̟ˑɪ)	514	æis, ëis	aɪs
know	naa	nɑ̟:	92	næ̞:, næ:, na:, nø:	na:, næˑə, nœ:
lead (n.)	liid	li:d	351	li:d	li:d
loaf	lĭᴇf	lĭɛf	107	lø:f	lø:ᵊf
lonning	lon*i*n	lɔnɪn	81	lœnn̩, lɔ̟nən	lɒnən
look	lĭœ$_1$k	lĭœ̟k	558	lʊk	lɷk
make	mĭᴇk	mĭɛk	5	mʝ̈ek	mjɛk
man	mɐn	mən	51	mæˑn, mæ:n	mæ:ᵊn
mother	m*i*dho*r*	mɪðɔʁ	559	mʊðɒ	mɷðəᵸ
needle	niid'l	ni:dl̩	207	ni:dl̩	ni:dl
nought	n*óu*t	nɔʊt	123	nœut, nœʊt, nɔ̟ut	nɒɷt
paste	pĭᴇst	pĭɛst	860	pʝ̈ɛst	pjɛst
saw (n.)	saa	sɑ̟:	12	sæ̞:, sæ̞:	sæ:-dɷst
saw (p.t.)	saa	sɑ̟:	321	sæ:, sæ̞:, sa:	sa:
school	skĭœ$_1$l	skĭœ̟l	67	skʝ̈əl	skjɤl
sew	síu	siu	451	sjɐ̯̈u:, sjə̆u:, sø:	sɪu:
sweat	swiit	swi:t	228	swɛt	swɛt
there	dh*éo*r	ðɐɔʁ	223	ðɐɒ	ðɐəᵸ
throng	th*r*aq	θʁɑ̟ŋ	63	θʁaŋ, θʁæŋ	θʁaŋ
took	tĭœ$_1$k	tĭœ̟k	570	tʝ̈ək, tʝ̈uk	tjɤk
wor (= our)	wo*r*	wɔʁ	648	wɔ̟:	wɔᵸ:ʐ̟
write	*réi*t (ʔəˊ*i*, á^1*i*)	ʁɐ̟ɪt (ʔɜɪ, ɑ̟ˑɪ)	498	ʁɛ̈it, ʁæit	ʁɑ̟ɪtn

Table 10: Some examples of Ellis's Wark compared with later data.

Word	Palaeotype	Eustace 1969	Ref.	Orton Corpus (BLH)	SED (Nb5)
after	Eft*or*	ɛftɔʁ	158	ɛftɐ	ɛftənɪən
arm	*eer*m	eːʁm	342	eɐm	ɛəˠm
both	bíiɐth	biːəθ	89	bi̯əθ, bøːθ, bøˑəθ	bɪəθ
butter	bœ$_1$to*r*, b*u*$_1$to*r*	bœ̟tɔʁ, bʊ̟tɔʁ	607	bʊtɐ	bɷtɔˠ
comb	kíiɐm	kiːəm	40	ki̯əm	køəm, kɪəm
cucumber	kó*u*kɐmo*r*	kɔʊkəmɔʁ	929	kjuːkʊmɐ	kjuːkɷmɔˠ
door	duuo*r*	duːɔʁ	606	dɷɐ, dɔ̣ː	duɔˠ
elm	Elm	ɛlm	272	ɛləm	ɛləm
ewe	J*óu*	jɔʊ	386	jœu	jɔɷ
father	f*ee*dho*r*	feːðɔʁ	138	fɛðɐ, faðɐ	fɛðɔˠ, faðɔˠ
feet	f*ii*t	fɪːt	315	fiːt	fiːtʻ
four	fó*u*ɐ*r*	fɔʊəʁ	420	fœu(w)ɐ, fɔuɐ	fɔɷɔˠ
good	gíiɐd	giːəd	571	gʊd, gʊːd	gɷd
green	g*r*iin	gʁiːn	299	gʁi̯ːn, grĕi̯ːn	gʁi̯ːn
hair	h*éo*r	heɔʁ	222	heɐ	heˑɔˠ
heat	hiit	hiːt	202	hiːt	hiːt
holiday	hal*i*d*e*	hɑ̣lɪde	80	halɪdə, hœlɪdə	halɪdẹˑᵊ
lay	l*ee*	leː	260	leː	leː
like	l*éi*k (ʔə´*i*, á^1*i*)	lɐ̟ɪk (ʔɜɪ, ɑ̣ɪ)	500	lɛik	lɛ̝ɪk
mare	mii*r*	miːʁ	248	miɐ	mɪɔˠ
mow	m*oo*	mo̟ː	91	møː	møː
nail	n*éee*ɐl	neːəl	141	neːl	neˑəl
needle	niid'l	niːdl̩	207	niːdl̩	niːdl
oats	JEts	jɛts	86	jɛts, øːts	jɛts
only	onl*i*	ɔnlɪ	125	øːnlɪ	øːnlɪ
other	*u*$_1$dho*r*	ʊ̟ðɔʁ	566	ʊðɐ	ənɷðɔˠ
snow	sno*o*, snaa	sno̟ː, sno̟ː	93	snaː, snøː	snaː, snøː
soot	síiɐt	siːət	597	si̯ət, sʊt	sɪət
sore	see*r*	se̟ːʁ	85	seɐ	seɔˠ
star	sta*ar*	sto̟ːʁ	404	stɑː	staˠːz
stool	stíiɐl	stiːəl	584	sti̯əl, stiːl	stɪəl
take	tíiɐk	tiːək	4	ti̯ək, tiːk	tɪək
throw	th*roo*	θʁo̟ː	95	θʁaː, θʁøː	θʁøː
walk	w*oo*k, waak	wo̟ːk, wo̟ːk	325	waːk, wøːk	waːkʻ
way	w*ee*	weː	262	weː	wɪə, weː
whole	híiɐl	hiːəl	113	hi̯əl, høːl	hɪəl

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