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Leeds Studies in English
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The Phonetic Database Project (PDP) – A New Tool for the Dialectologist

William Elmer

Abstract

The *Basic Material* of the *Survey of English Dialects* is rightly admired as one of the richest sources for the study of dialect variation, represented most visibly in a number of linguistic atlases. Despite their undisputed value, these atlases find natural limits where the *generalization* of linguistic features and processes is concerned; also, they do not lend themselves easily to interaction with the researcher. These reasons (among others) stand behind our attempt at converting the complete *Basic Material* (BM) into electronic form, in order to allow fast access to its more than 450'000 phonetic entries, through a small number of search routines, with the results presented in the form of lists and maps. The *Phonetic Database Project* (PDP) hopes to have come some way towards this aim. Its format, potential and limits are illustrated, resulting in the conclusion that, while it relieves the dialectologist of much laborious manual work, the imaginative part still has to be played by the linguist, in a yet to be fully established type of interaction with the computer.

One of the clearest signs of the substance of a scholar's work is seen when future generations turn to it again with new questions and expectations, generated by the development of the field. The unbroken interest in the *Survey of English Dialects* (SED) – the joint project of Harold Orton and Eugen Dieth – is proof of the fruitful nature of this work. My contribution towards a conference dedicated to the memory of Harold Orton intends to suggest one way in which the SED could inspire dialectologists to continue work in a domain shaped by more than thirty years of study as well as to chart new directions for future research.

As to the legacy of work based on the SED, it is hardly necessary here to

mention its varied but still focussed nature, determined quite significantly by the format in which the data are presented in the BM. Insofar as the representation of SED data in linguistic atlases is concerned, I believe that, while there is now quite a number of them, representing different orientations, the limits of atlas-based areal dialectology seem to have been reached. The main reason for this situation has to do with the generalization of linguisitc features or processes. The most obvious initial mode of representation which the arrangement of the BM entries (according to phonological, morphological, syntactic and lexical keywords, counties and localities) seems to suggest, is the single map. This is the basic format of the *Linguistic Atlas of England (LAE)* (Orton et al. 1978), the *Atlas of English Sounds (AES)* (Kolb et al. 1979) and practically all of their companions, and it is unnecessary to repeat here that work based on this type of evidence has yielded rich results. Still, it is true that this orientation has a tendency to favour 'interesting' individual maps (even if arranged in groups) – a fact which may derive from the very format of an atlas: despite the ingenuity of editors, the problem of selection remains a question of interests and priorities. The situation is reflected by the widespread experience by dialectologists of often being 'one map short'. Generalizations towards the overall behaviour of sounds and forms are not easily made in this context – both for reasons of data accumulation and presentation on a map. The search for more general or even 'global' patterns – based on the *complete* data offered by the BM – is not practically feasible at present. The main reason for this is the time-consuming nature of work in this area. The BM contains about 450'000 phonetic entries, and many of them occur not only under their respective keywords, but also elsewhere ('hidden forms'), which makes them difficult to find. (If you intend to study the areal occurrence properties of palatalization, velarization, vocalization, (un)rounding etc., the amount of laborious manual work is multiplied: short of going through the complete material, such aspects cannot be investigated systematically in the BM). In addition to this, another restriction conditions our work: this is the necessarily reductive selection that has to be made at the outset of any investigation. Once a group of sounds or items is defined, it cannot be changed without considerable additional toil. (Imagine a context-dependent phonological investigation of the relative effect of different consonant clusters on the lengthening or shortening of Middle English vowels, where it may be important to be able to extend or narrow the database in the light of intermediate results). All of us who have ever tried to draw maps of seemingly clearly patterned and suggestive data have experienced that at different stages in our work we wanted to modify the pathway of inquiry, a situation which reflects the inherently interactive nature of dialectological work; however, under the constraints of manual work this is again just not possible.

The answer to the problem of accessing and handling BM data efficiently and accurately lies in their conversion into electronic form. This obviously appealing idea has so far failed to realize because of the narrow phonetic transcription used in the BM as well as of its format. When we decided at the English Seminar of the University of Basel to tackle this problem, our aims were therefore relatively modest: we wanted to make the complete SED material available on computer, in its original form (i.e. without any loss of phonetic detail). Reasonably simple access should be combined with a number of basic search routines, and the results represented in the form of lists and maps. We wanted to offer a tool for the working dialectologist, to relieve him/her from much mundane work and in particular make possible the kind of flexible research sketched before.

In this, I am privileged to have had three collaborators in my department who complemented each other ideally and who together shaped the project which I am presenting here: Michael Gasser scanned the complete BM, Ernst Rudin designed the computer format (the code into which the phonetic transcription has to be converted and reconverted again, among other things), and wrote all the programs, Guy Schiltz contributed the cartographic module. All of this together combines into PDP, the *Phonetic Database Project*.

So we now have the entire BM as a database (in ASCII format) on our computer. This work took some time, and it presented us with an exciting mixture of problems, not least that of coding the phonetic transcription. The lasting experience, however, was not shaped by such difficulties, but by another aspect: as work progressed, we developed the highest respect for the fieldworkers who actually heard and transcribed what a sophisticated computer would often just not swallow. Soon we realized that that fieldworkers like Peter Wright and Stanley Ellis naturally did not have a digitalized version of their magnificent transcriptions in mind. (Should I admit that sometimes we asked ourselves whether they would have heard the same wonderful dialect sounds had they been faced with devising a system for their encoding). Once we had a grip on the narrow phonetics and the wide variety of diacritics, we had to make accessible the sophisticated ways in which editorial information is given in the BM. It took some time to convince the computer that an unfilled circle means 'incidental material', that anything in square brackets is 'illustrative material' and – most confusingly for a device based on the binary principle – that some signs are used with variable functions, a fact which may have led Harold Orton to consider such information at times 'to be somewhat empirical' (Orton 1962:23).

PDP cannot replace the BM; it differs from the real thing in that you cannot browse in it but have to ask it questions, exact questions in a format prescribed by the

program. Searches are essentially for the occurrence of sounds or forms (phonetic or orthographic), context-dependent or context-free. The results are then shown as lists or maps. PDP is not an atlas! Our maps are not stored, but generated from the results of a search. An important aspect is speed: PDP checks any search unit through the complete BM in a matter of a few minutes. Here lies its potential as a working tool: it allows fast and flexible access to the SED in the domains mentioned. It allows us to *ask* the BM questions. Let us therefore investigate some aspects of *ask* (and phonologically related words) in English dialects with the aim of illustrating what PDP can do – its potential and its limits. The point here is to show the type and range of applications of our program, not to perform a systematic study of the areal variation properties of *ask*.

Ask is a lexical (not a phonological) SED keyword, and the best way of getting an initial idea of its occurrence is of course to look it up in the four BM volumes. However, should the green books not be available, PDP offers us two approaches for a first look at the data: we can either consult the keyword itself (ASK HIM, IX.2.4) or we can search for *ask* in the responses section. While the former search is limited to responses to IX.2.4, the latter also finds occurrences of *ask* elsewhere, including the *incidental material*. Let us thus enter the lexical searchstring *ask*. PDP answers our question as in Figure 1.

What PDP tells us, then, (not surprisingly) is that *ask* occurs as an answer to question IX.2.4, and it also tells us that the word is not found elsewhere. The program now creates a file of the responses to this question and this is the database for our searches. We move now to the phonetics section of the BM; for any search, PDP looks at the phonetic entries listed under the keyword *ask* for occurrences of the searchstring in question. In the present case, we expect the two most interesting parameters of variation to be quantity [ask/a:sk] and quality [ɑ:sk/a:sk]. Let us start with the short vowel. Our question then is: where is *ask* attested as [ask], i.e. with a short low front vowel? – In a matter of less than a minute, the **ask** map (short vowel) occurs on the computer screen: see Figure 2, Appendix.

The form [ask] is attested in all the filled cells. This view of England is produced from the following base map, made by Guy Schiltz: see Figure 3, Appendix.

What Guy did was to take the original map of localities and have the computer figure out the equi-distance from one point to all the surrounding ones (so-called Thyssen polygons, a cartographic method common in dialectometry), so that now we have these 313 cells. If a searchstring is attested in a locality, the corresponding cell is filled. (Note that on maps of this type, PDP shows the occurrence properties of search units, in our case a phonetic variant of the SED keyword *ask*.)

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(File created by QRScan on 23. 1.1999 at 12.47.
                              Copyright e.r. 1997)

PHONETIC DATABASE PROJECT          English Seminar
      UNIVERSITY OF BASEL

LIST OF FINDINGS in the RESPONSES SECTION.
Original Filename = FL.Q2

Keyword Pattern: *

SEARCHSTRING: ask



N92-4.EXT; IX.2.4 ASK HIM
      ASK

E92-4.EXT; IX.2.4 ASK HIM
      ASK
      ASK

W92-4.EXT; IX.2.4 ASK HIM
      ASK

S92-4.EXT; IX.2.4 ASK HIM
      ASK
           .
           .
           .
```

Fig. 1 List of findings (ask)

* stands for a search through the complete material (in all four regions). If we wanted to limit a search to the north, we would have an N* here. N92-4 is the filename IX.2.4 for North, East, West and South, ASK HIM is the keyword, and then follow the responses.

PDP does not produce symbol maps of the type we know – showing a keyword and its range of variation. No computer program can do this – or will, for some time. This part of our work still has to be done by the dialectologist (fortunately, some would say), but I hope to show that it can now be done in a well-informed and efficient way. For the *ask*-map, PDP has checked the occurrences of [ask] in the four files and found it 73 times in 73 localities. The overall area in which [ask] is attested agrees only in part with what we expect. There is an abundance of forms in the East, but the Western half of the North is still underdetermined: the unfilled cells only mean that [ask] does not occur. We should therefore search for other variants, notably the two other front vowels [æ] and [ɛ]. The search here finds 8 occurrences of [æsk] and 4

occurrences of [ɛsk]. Instead of adding these forms to the first map, we can combine the three searches, either by entering the three searchstrings or (more elegantly in our case) by searching for the occurrence of short vowels, including the variants [as] and [ast] (for 'asked'). Such cases are quite comfortably catered for by our program, by the possibility of using wildcard characters ('placeholders') in the searchstring.

Our search for long vowel occurrences of *ask* proceeds in the same way: first, the long low front vowels. As we do not at this stage want to distinguish between them, we do a combined search. See Figure 4 **ask** (long front vowel).

Figure 4 shows that there are 66 findings of these two vowels; this is an interesting intermediate working map which will find its fuller interpretation in a wider context. Having made sure that there are no occurrences of [ɛ:], we turn back to the variant [ɑ:sk]. Figure 5 is the map, again awaiting fuller evidence (long back vowel).

All of this is exactly what you see on the screen. We could now superimpose this onto the long front vowel map to show the distribution of lengthening in the context of *ask*. But we could also ask PDP for the same map directly, entering the searchstring *long A-type vowel* (i.e. front and back variants); note that half-long forms are not included, although this would have easily been possible. Equally, we could contrast this map with that for the short vowel in the same context by superimposing the two pictures.

We now have a first impression of the main distributional patterns of *ask*, and we have also experienced the kind of flexible work which PDP allows. We can now focus on some interesting aspect or we can generalize our investigation to other contexts. We are still in the domain of the single word *ask*. This means that as dialectologists and historical linguists we expect to find metathesis here. Let's see what PDP says. The answer to our searchstring [aks/æks] and [ɛks] (respectively *short low vowel+sk*) is Figure 6, **aks** (metathesis). If anything, this map answers the question about the West, which remained largely blank on the short vowel map. Combining these two pictures we can see in Figure 7 (**aks** vs. **ask**) how they complement each other.

All of the searches illustrated so far are efficient and accurate, and they show how PDP works. But as mentioned, its real interest lies in generalizing work. Our next step then is to find 'all occurrences of the (orthographical) sequence -ask-'. Again we first establish the complete list of relevant lexical items. PDP scans all the responses sections in the BM for occurrences of *ask*-words, and what we get on the screen is Figure 8 (a list of findings ***ask***).

1 – again the filename corresponds to the questionnaire number.

2 – II.2.10a is the SED keyword 'cowslip'.
3 – III.5.4 shows the keyword 'basket'.
4 – IV.9.8 gives *ask* as the word for 'newt', which we delete from the list.
5 – V.9.7 'clothes-basket': here the answer 'wisket' seems to interfere with our search for short *ask*-forms; in order to exclude findings of 'wisket', we just limit our search to *A-type vowel*, as shown before.
6 – IX.2.4 finally is our keyword *ask*. Thus, in addition to this, we have found 6 further *ask*-words, 3 of which are keywords themselves. Then follow the files for East, West and South. Filtering down the list to the *ask*-words proper establishes our new database for the searches we have already applied to the single keyword *ask*. The database now comprises 26 files, compared to 4 files for the single word. Of course not all words are evenly attested; we have completeness here in terms of inventory, not geographical coverage. Let us again look first at the short front vowels [a/æ/ɛ]. We are given their occurrence by a single search: see Figure 9 ***ask*** (short vowel).

Comparing this map with the same map for the single word *ask*, we note a considerable extension of the short vowel area, Figure 10: ***ask*** vs. **ask**.

The short front vowels are attested in 138 localities. We again note the unfilled regions in the North-West, but this time they have a different status: this evidence is based on all *ask*-words in the BM, which means that there are no more short forms of this type to be found. Next, the long variants [a:] and [æ:], in Figure 11: ***ask*** (long front vowel).

Again the picture is now considerably more complete, including the unfilled area in the South-East. The search for back [ɑ:] completes the picture: the South-East is now filled, and there is quite a coherent [ɑ:]-area in Norfolk: see Figure 12, ***ask*** long back vowel).

And Figure 13 is a first view of the complementary pattern formed by the occurrence of long front and back variants: ***ask*** (front vs. back long vowel).

In agreement with the evidence we find in the LAE and elsewhere, the South-East stands out as a compact [ɑ:]-region. Notice the hint of variation in East Anglia. We can now again superimpose the short and long vowel areas: see Figure 14 ***ask*** (long vs short vowel).

Note the astonishingly clear-cut pattern, with metathesis in the North-West and isolated examples of variation in the Southern area. (We can study its particular nature by looking at these localities individually, cf. below). At this point PDP has done its job (for the moment). The maps are now ready for comparison, scrutinizing and interpretation – as well as for flexible re-arrangement in the light of new hypotheses. We may find that we want to modify our *lexical* database, e.g. by introducing

subcategories for morphological classes – 2-syllable words, ing-forms etc. Or we may want to broaden or narrow our *phonetic* database (so far we have disregarded diacritics, but our searches can be made sensitive to any diacritic symbol). PDP allows us to react immediately to any new question which our cumulative results generate; we experience the thrill of interactive work with the SED map. And in all of this we are working with the *complete* material. Even if the data are not exhaustive or geographically balanced enough to represent a phenomenon fully – here is all the evidence there is.

We conclude this presentation with a further look at possible generalizations which involve extensions of the database (the domain of cumbersome manual work again). One interesting generalization would be towards the *class* of final plosives: to include *ast* and *asp* besides *ask*.

Let us have a glimpse at some *ast*-maps and illustrate just one aspect of the generalization process: the question is 'should *pasture* be included in the *ast*-class'? A comparison of the two maps shows that adding the word *pasture* to our data brings 5 more forms to the short vowel, but 25 additional occurrences to the long vowel map: Figure 15, ***ast*** (long vowel).

Again we notice the almost variation-less transition from short to long vowel. This is evidence which complements the *ask*-maps in interpretable ways. Looking at the relevant lists which contain these sequences, we are faced with the kind of decisions typical of PDP work: decisions concerned with the definition of a representative data set. This is an empirical matter which can at least be plausibly dealt with if we can look at the phonetic and areal properties of different subclasses side by side. One of the promises of PDP is exactly that it lets us define comparable evidence (based on etymological, morphological or other criteria) in a very flexible manner. I expect PDP to contribute to greater awareness of the problem of representativity in the context of a gradual generalization of our data. Just for completeness' sake, Figure 16 presents the combined maps for long and short realizations of the *ask*-, *ast*- and *asp*-class together (***as+C*** (short vowel)).

The short vowel map shows thinly but evenly attested forms throughout the southern lengthening area – an invitation to have a closer look at variation. The generalized long vowel map is in Figure 17 (***as+C*** (long vowel)).

Again a combined view of the short and long vowel maps highlights the respective compact regions as well as the variation areas. And of course at this point we wonder what the situation is with the final fricatives, as in the *pass/path/laugh*-class of words, and this naturally leads on to the question of the class of *o*-words in the same context (*cross* etc.) – and so on.

Investigations like these involve huge data sets. PDP offers the necessary help to tackle such tasks and – due to the creative potential of interactive work – opens up new dimensions for rich and imaginative questions to be put to the SED.

Our presentation has so far focussed on the cartographic aspect. However, the *Phonetic Database Project* also allows the systematic phonetic study of English dialect sounds in detail. As mentioned briefly, PDP produces with each search a phonetic list of the data found. The BM entries which we scanned into the computer were coded for the purpose of the search procedures, but they can be re-converted into exactly their original printed form. On the screen it looks like Figure 18.

These are the data from which our *ask*-maps are produced; diacritics are fully preserved, as are informants' remarks and editorial notes, as well as the incidental material (i.m.). (BN (Ch 6) stands for 'basic note', pp. is the conversion of the symbol used in the BM into its meaning 'present participle').

Next is the list of the broader search, (the sequence *any vowel (short, half-long, long) followed by -sk).* Note again that the list (of which we only see a part) is complete, i.e. it includes 'hidden' occurrences and incidental material (i.m.), repetitions are also indicated (Figure 19).

The fact that PDP searches the entire BM accurately for any phonetically defined unit in a very short time makes it attractive for the study of general phenomena and processes. In this context the study of diacritics is especially interesting: if we are interested in the occurrence – e.g. in 'transition regions' – of vowel variants, we can in addition to these search for diacritic symbols. In the same way, the different types of /r/, the r-colouring of vowels and other typological phenomena can be investigated rather comfortably.

This step leads us from the preceding binary to (mildly) quantitative maps and to questions of method and principles such as the definition of our database, mentioned already in the context of *pasture.* Should it be restricted according to historical, synchronic-systematic or other linguistic criteria? How do results gained in this way compare with 'global' patterns based on other rationales? These are fundamental issues; they are inspiring issues, too, dealing with the question of representativity in dialect studies. PDP does not solve such problems for us, but they can now at least be approached in a systematic and efficient manner.

I have tried to give you an impression of the type and range of applications which PDP offers, and I have tried to make it clear that PDP is but a tool in the hands of the dialectologist, a flexible and useful tool, designed to relieve us from some aspects (not all) of the manual work associated with areal dialectology. We have seen that PDP is applicable to traditional dialectological tasks but that its real promise lies

in quantitative work; besides producing the kind of maps and lists shown here, it is now possible to study the general phonetic processes mentioned as well as phonotactic properties of English. If we can add genuine statistical possibilities, e.g. by calculating occurrence percentages for any sound or relative similarity values for all 313 localities (in a manner similar to dialectometrical work), and if we can add possibilities for studying areal variation on the basis of the Middle English sound system, then PDP will be a really powerful tool. We are now starting work on both aspects. Awaiting the final version of PDP, I hope to have given you an idea of what it could contribute to dialect study based on the SED and to have shown that the creative and imaginative part will always have to come from the dialectologist, although it will be inspired by the constant feedback provided by flexible interaction with intermediate evidence. If this invitation results in a new and more widespread realization of the scientific interest – and the cultural value – of the SED, the work of our team will have achieved its purpose.

REFERENCES

Kolb, Eduard, Beat Glauser, Willy Elmer and Renate Stamm. 1979. *Atlas of English Sounds*. Bern: Francke.

Orton, Harold, Wilfrid Halliday, Michael, Barry, Philip Tilling and Martyn Wakelin (eds). 1962-71. *Survey of English Dialects: The Basic Materials*. 4 vols. Leeds: E.J. Arnold, (repr. 1998 London: Routledge).

Orton, Harold, Stewart Sanderson and John Widdowson (eds). 1978. *The Linguistic Atlas of English*. London: Croom Helm.

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APPENDIX

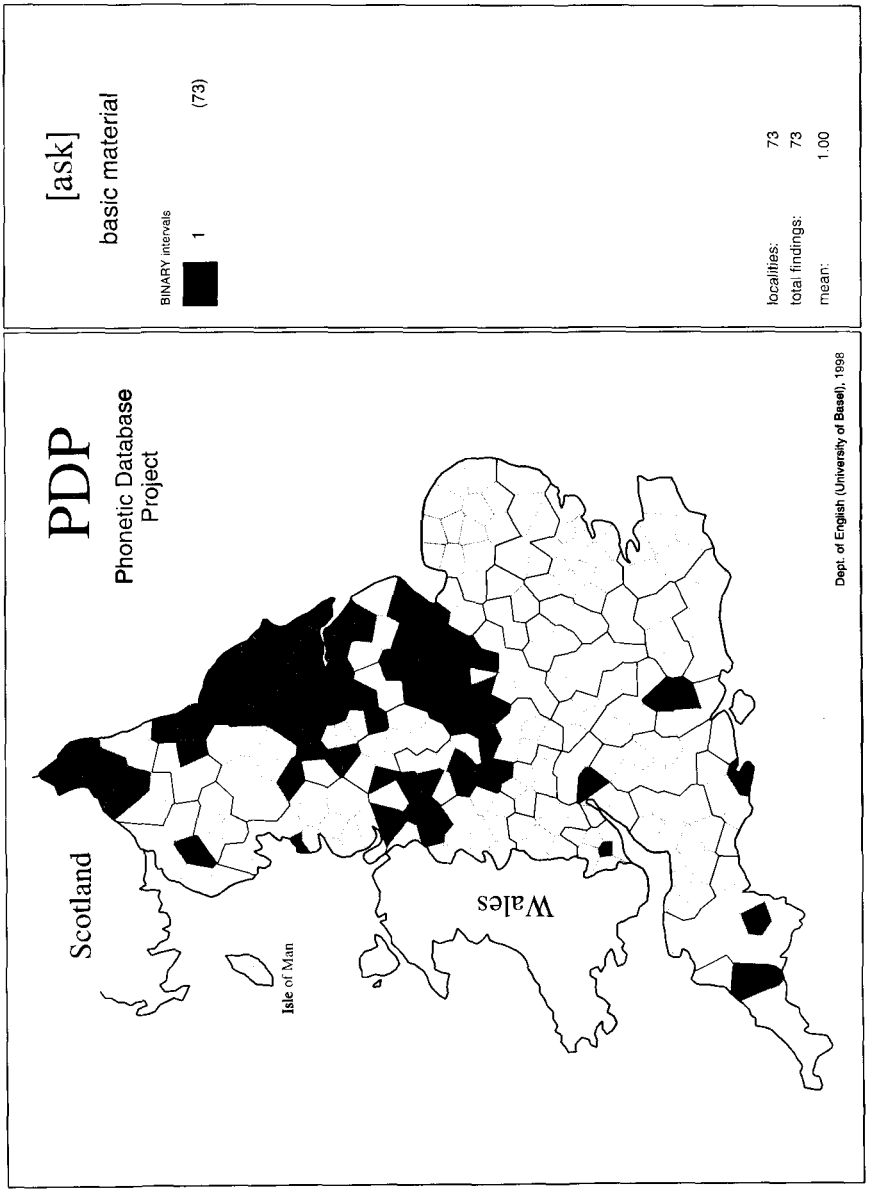

Figure 2: **ask** (short vowel)

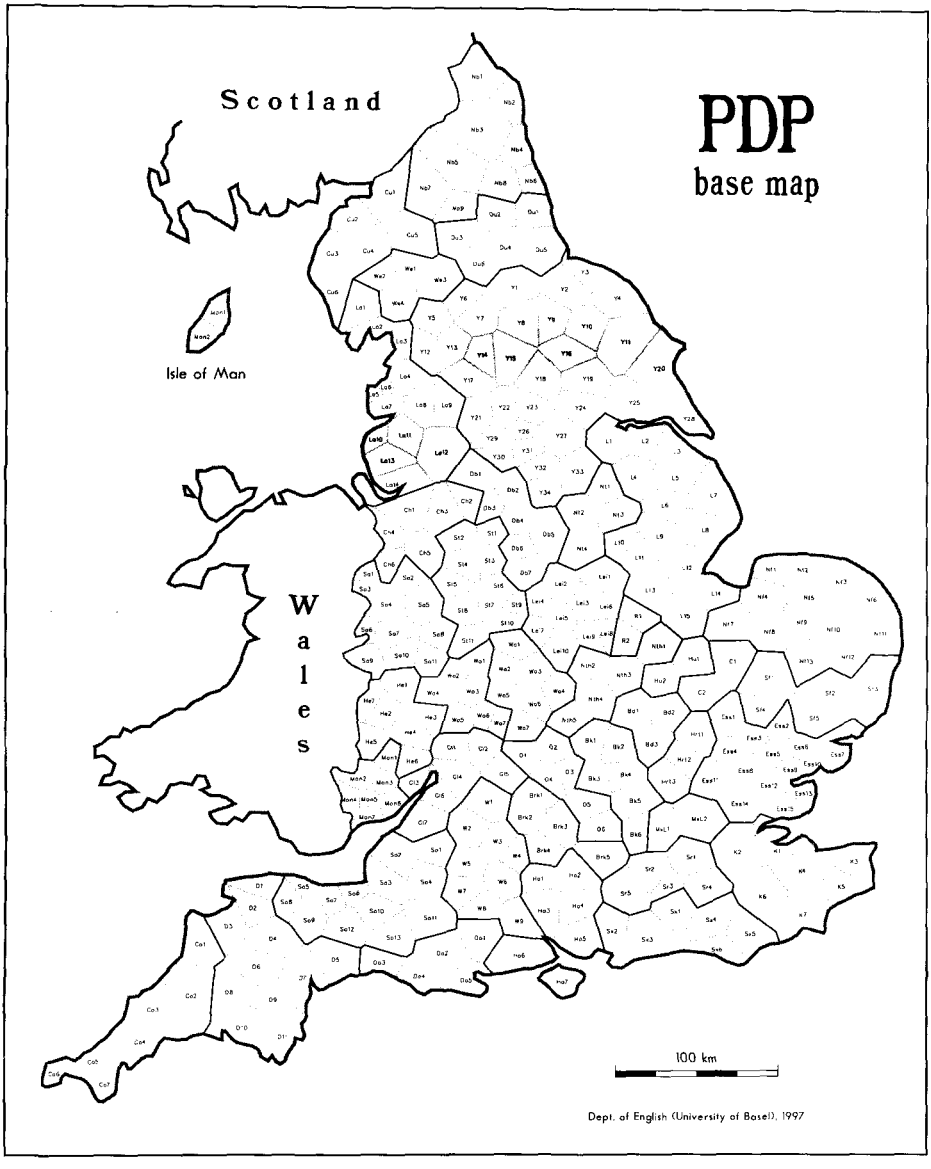

Figure 3: base map

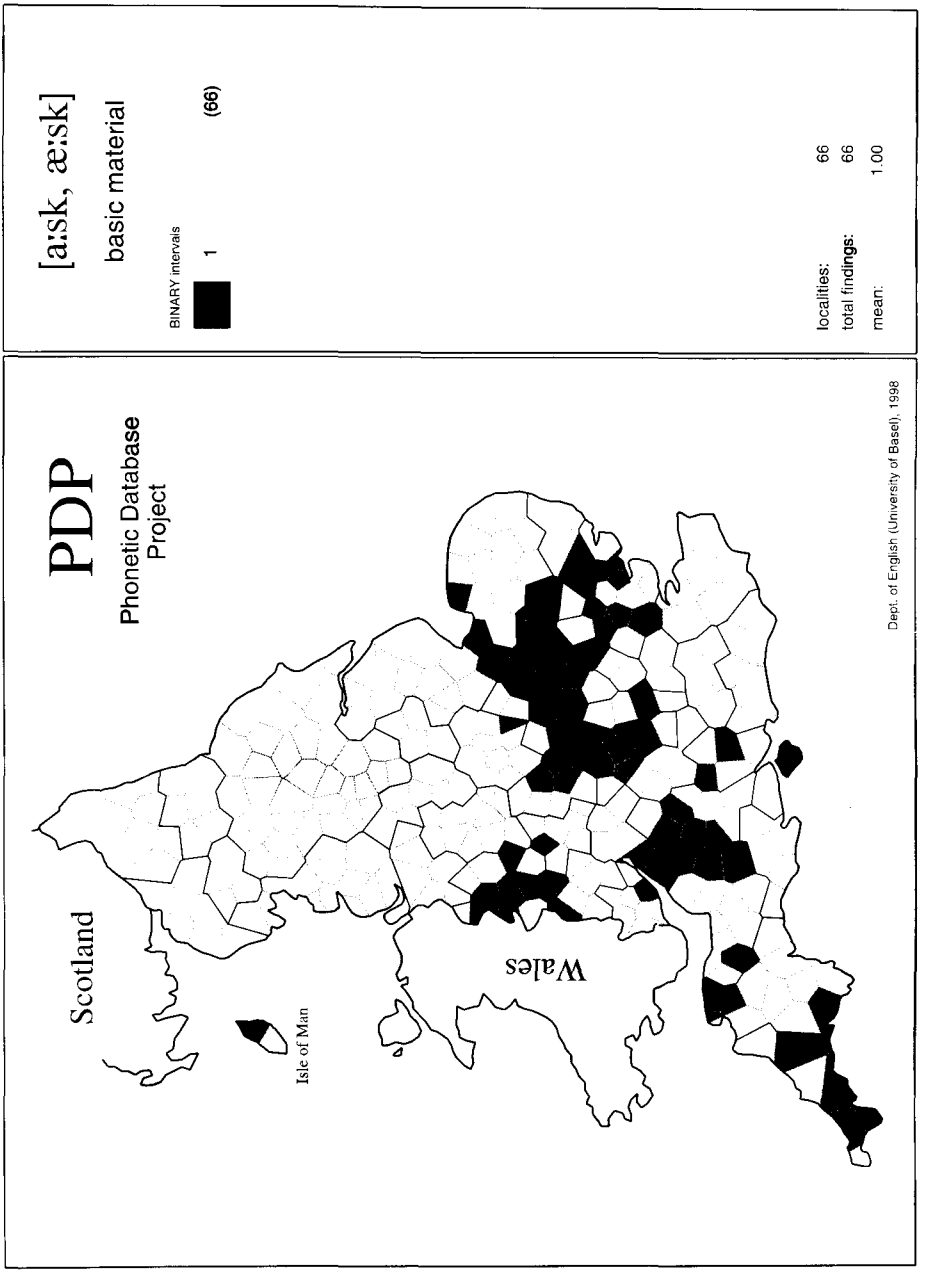

Figure 4: **ask** (long front vowel)

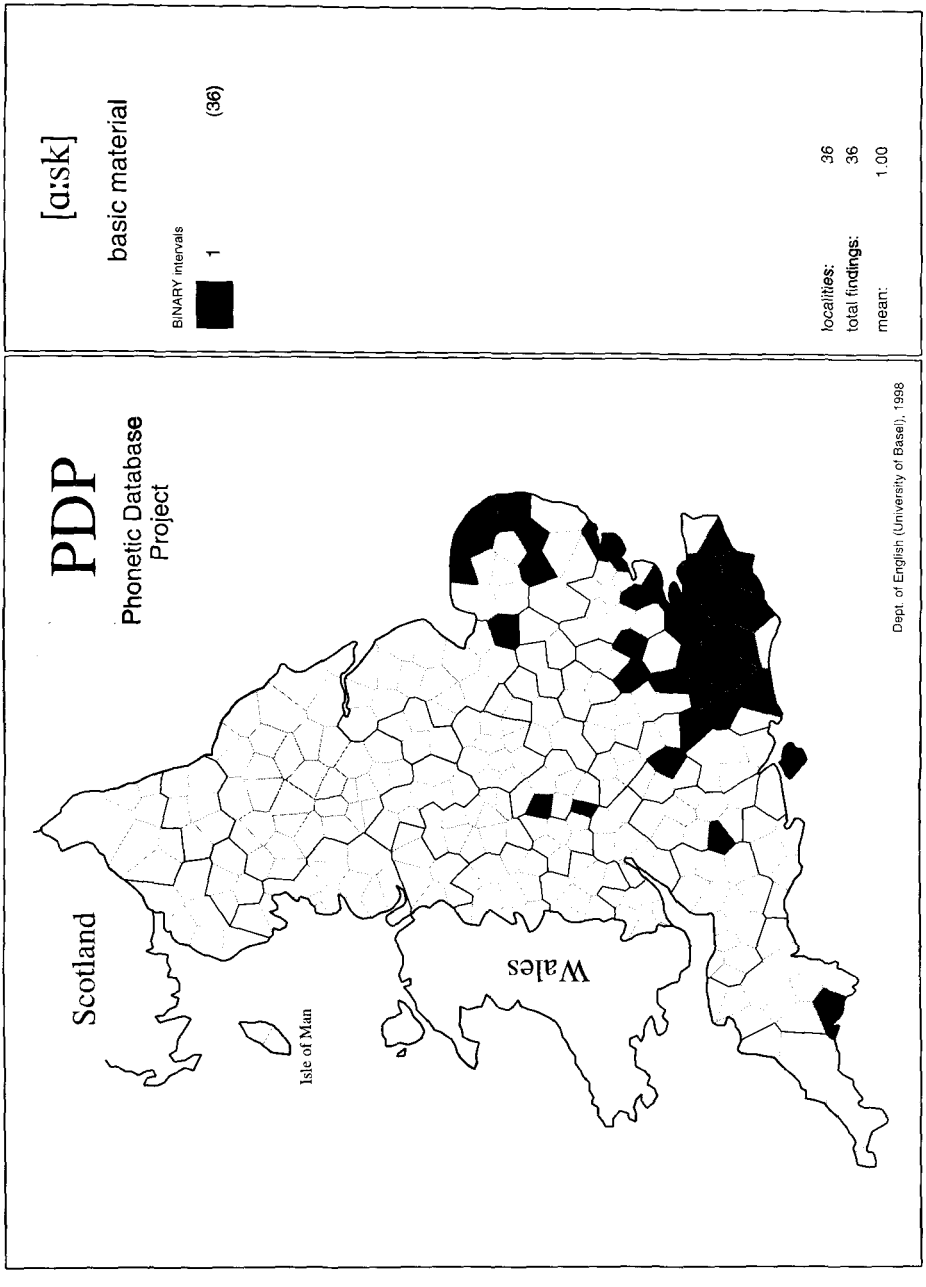

Figure 5: **ask** (long back vowel)

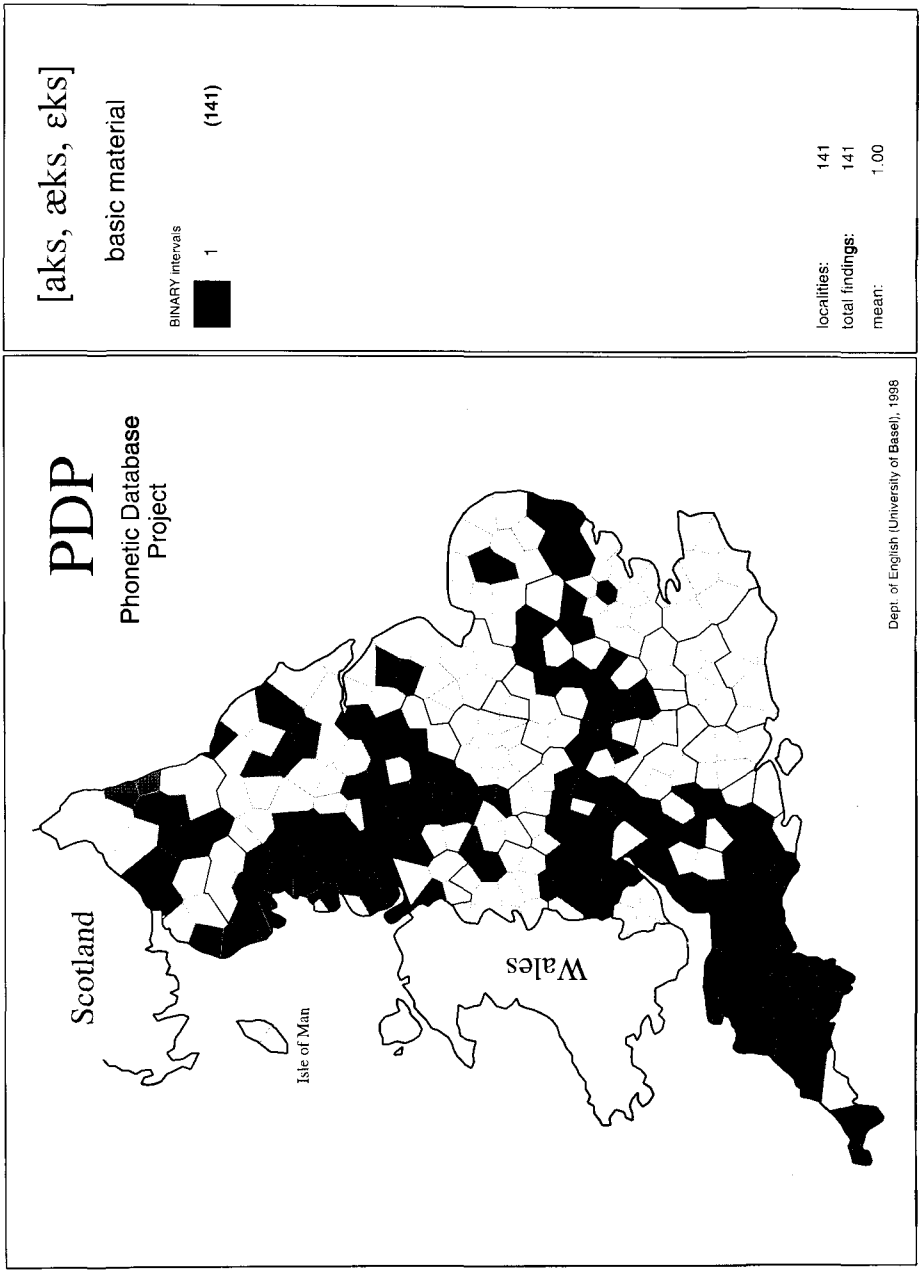

Figure 6: **aks** (metathesis)

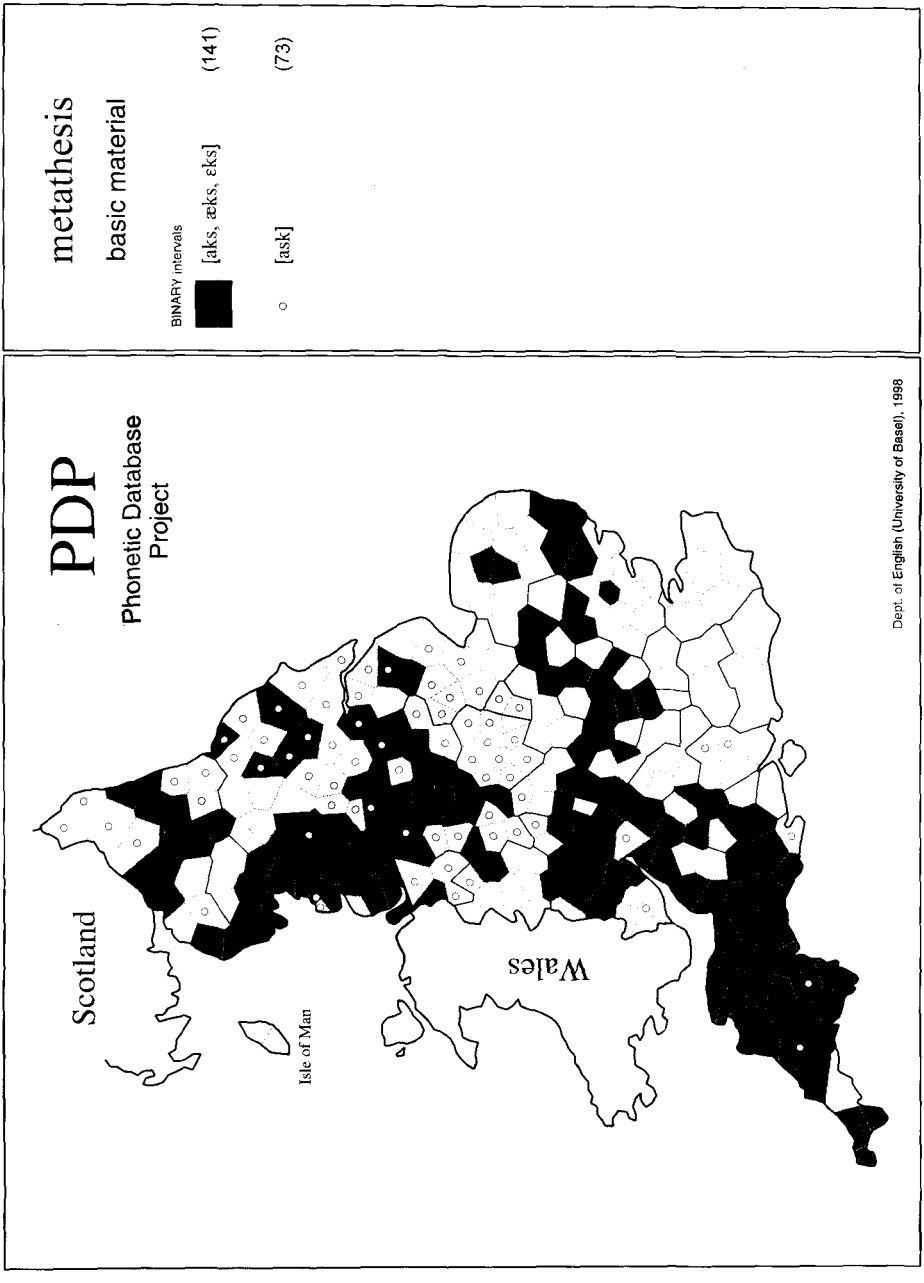

Figure 7: **aks** vs. **ask**

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(File created by QRScan on 23. 1.1999 at 13. 6.
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PHONETIC DATABASE PROJECT        English Seminar
UNIVERSITY OF BASEL

LIST OF FINDINGS in the RESPONSES SECTION.
Original Filename = FL.Q2

Keyword Pattern: *

SEARCHSTRING: *ask*

          ①          ②

N22-AA.EXT; II.2. 10 (a) COWSLIP (DAISY DANDELION)
      BASKETWEED,

N23-6.EXT; II.3.6 SOWING-BASKET
      BASKET,

N35-4.EXT; III.5.4 BASKET
      BASKET,
                  ③

N45-A.EXT; IV.5. 10 HAREph.
      JERK/MASKER

N48-8B.EXT; IV.8.8 (b) SKEP
      (BASKET/SKEP/STRAW-)HIVE,

N49-8.EXT; IV.9.8 NEWT
      (DRY-)ASK,  ———④
      WATER-ASK,
      ASKER(T), ———⑤

N59-7.EXT; V.9.7 CLOTHES-BASKET
      CLOTHES-BASKET/WISKET,

N91-3.EXT; IX. 1 .3 ASKEW
      ASKEW,      ———⑥

N92-4.EXT; IX.2.4 ASK HIM
      ASK

N92-7.EXT; IX.2.7 AJAR
      ASKEW
          .
          .
          .
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Figure 8: list of findings (***ask***)

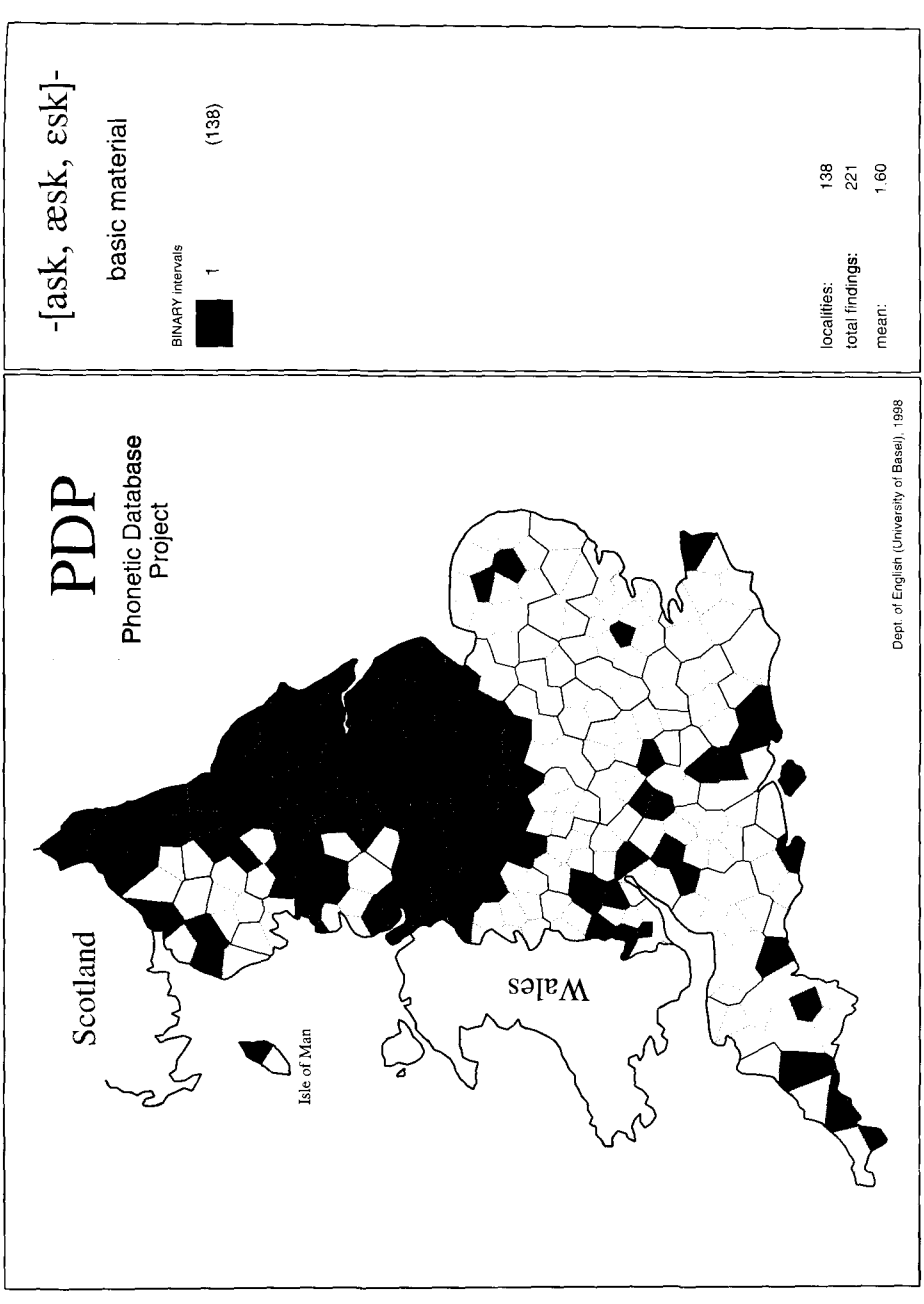


Figure 9: ***ask*** (short vowel)

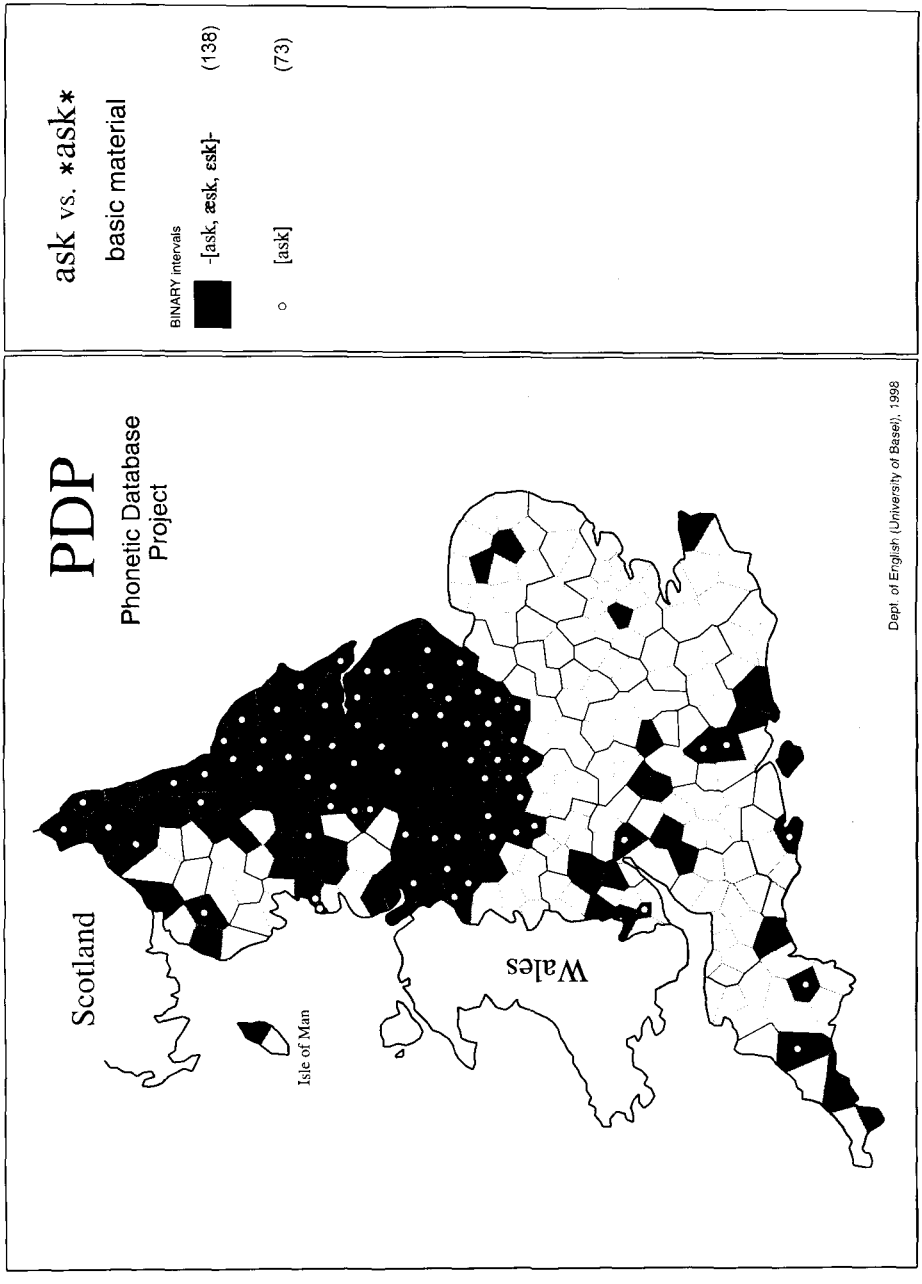


Figure 10: ***ask*** vs. **ask**

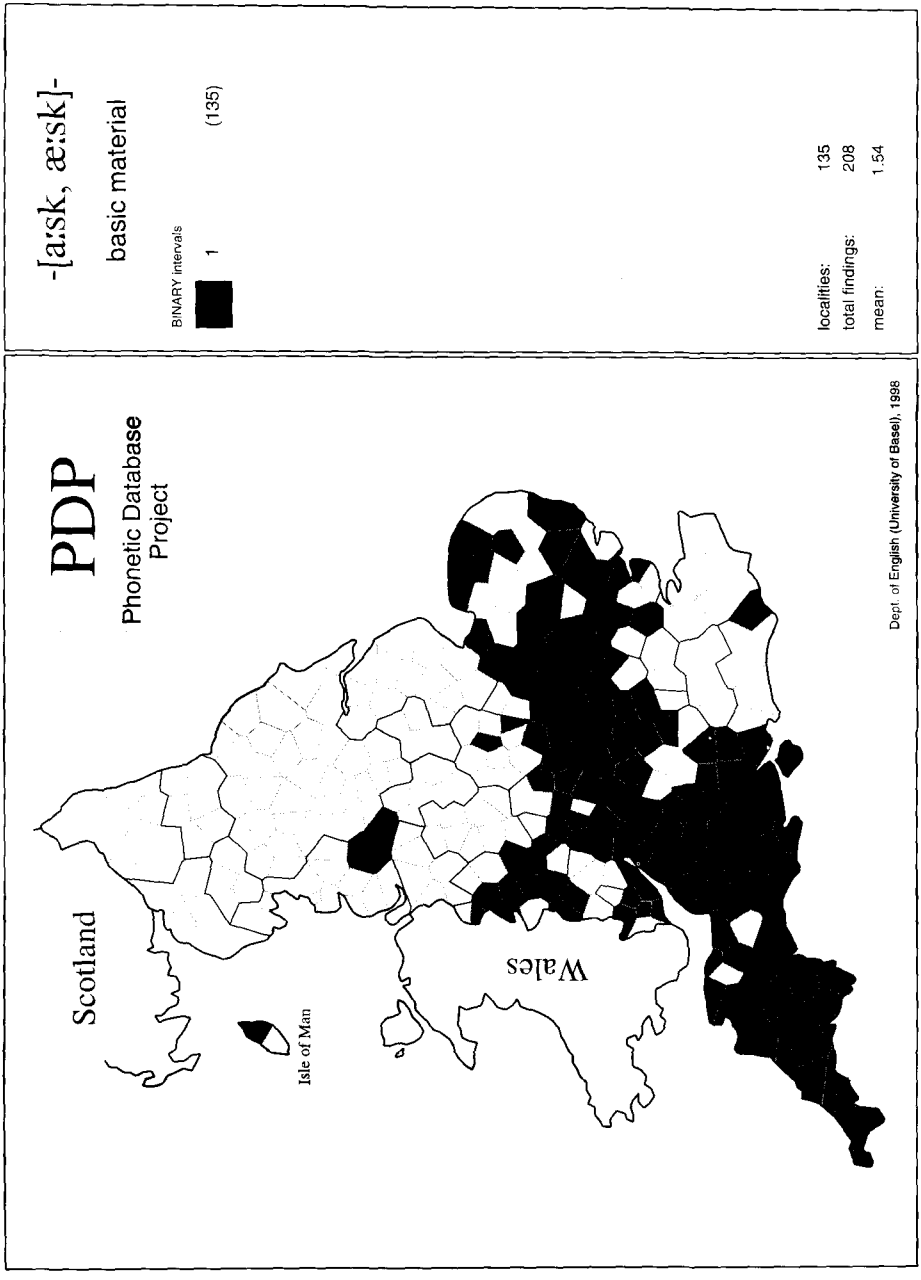


Figure 11: ***ask*** (long front vowel)

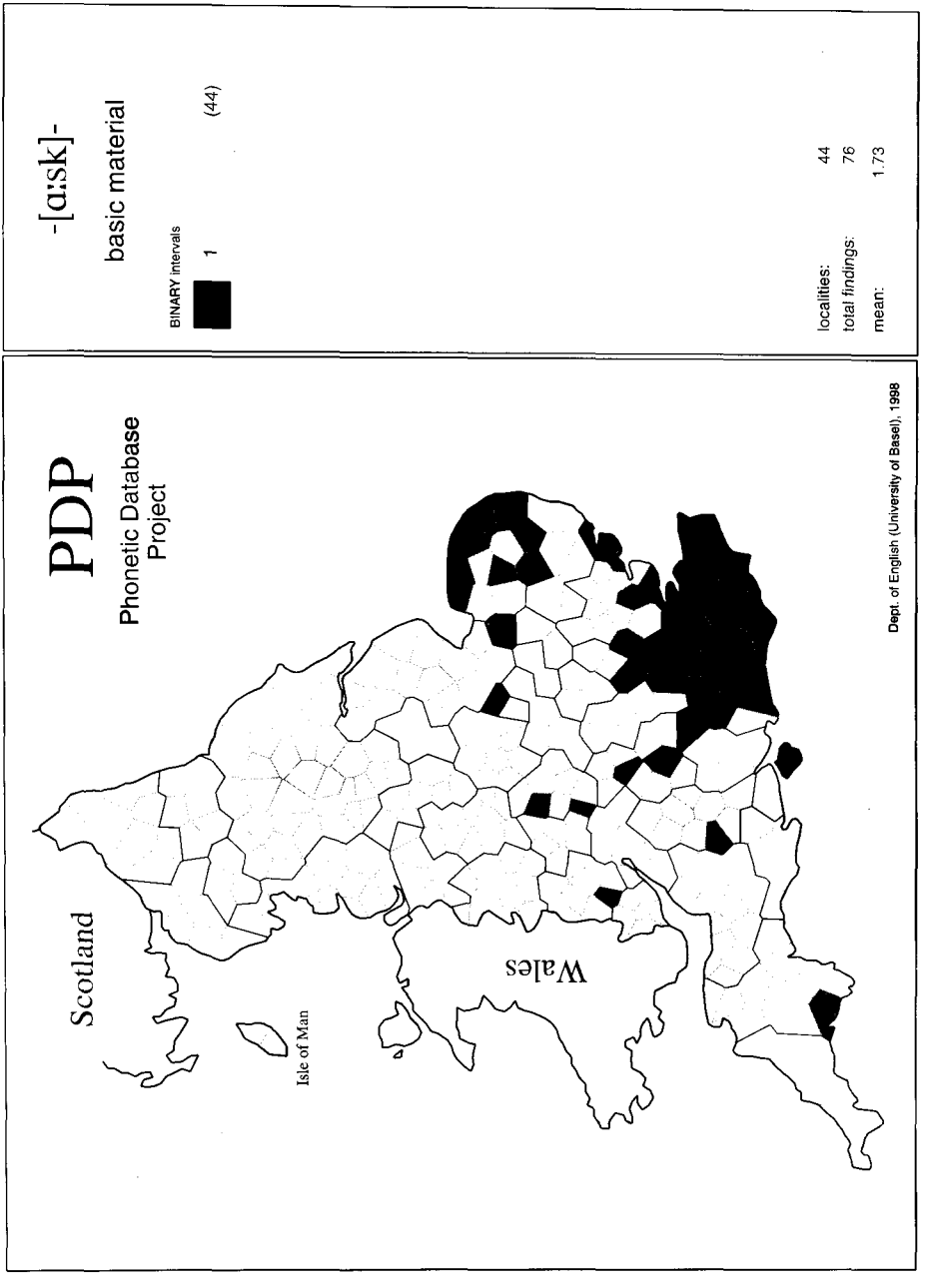


Figure 12: ***ask*** (long back vowel)

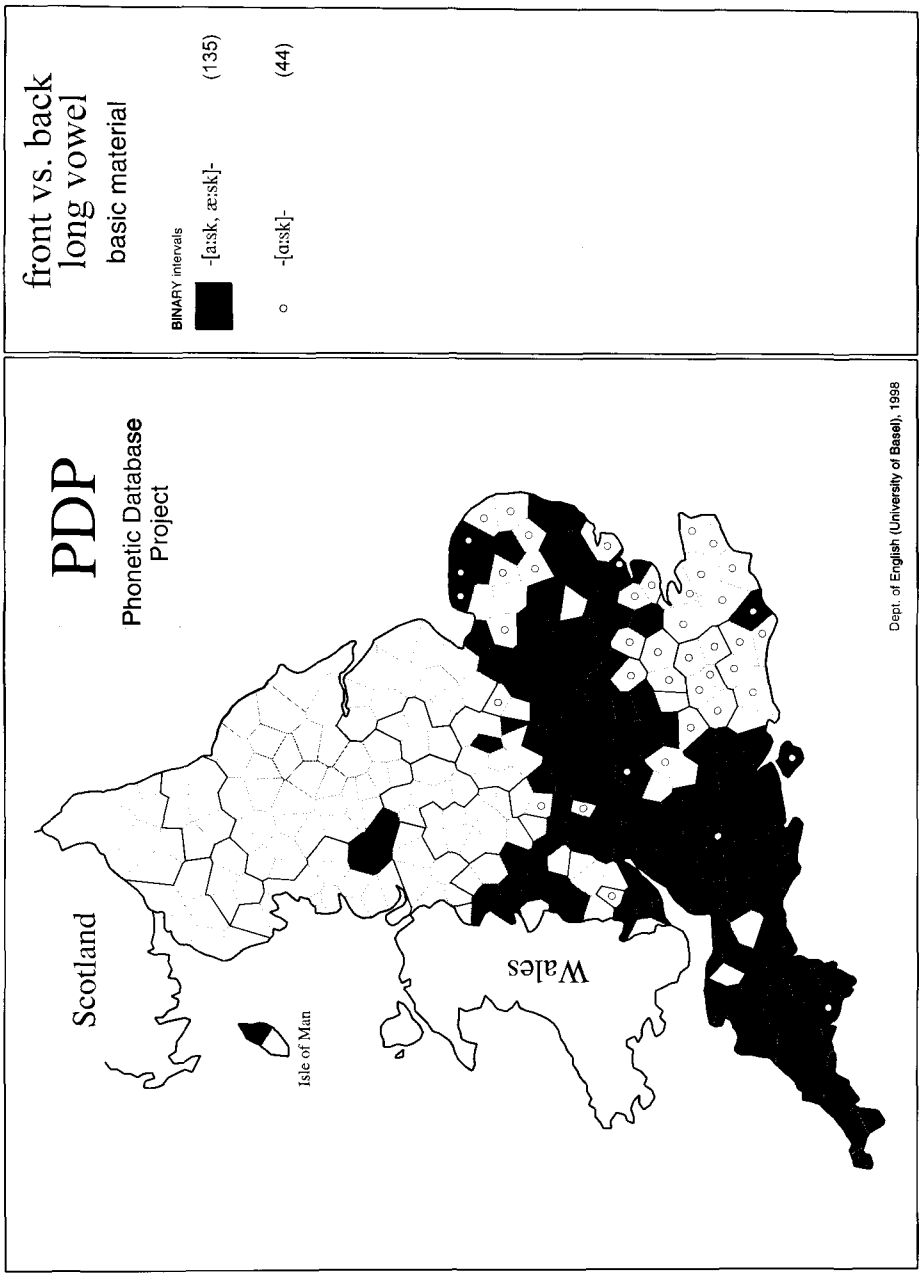
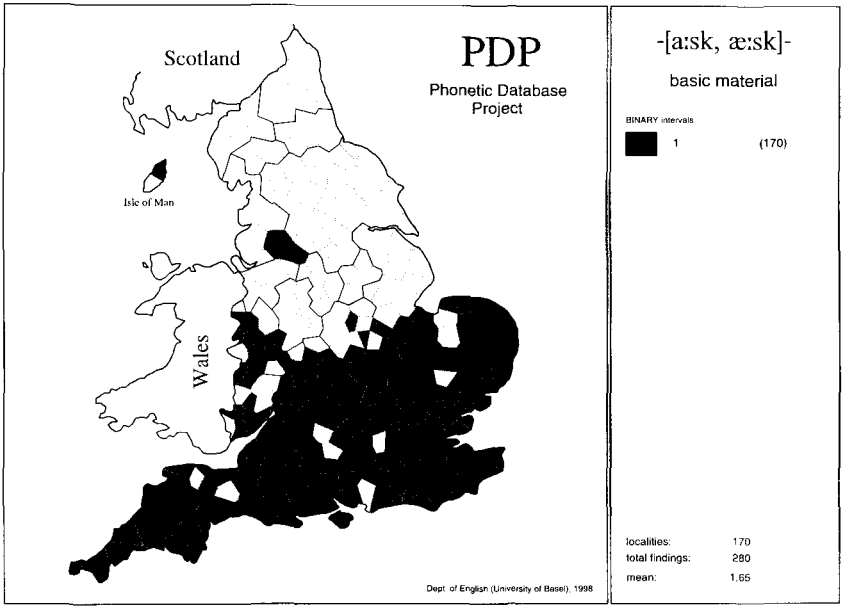


Figure 13: ***ask*** (front vs. back long vowel)



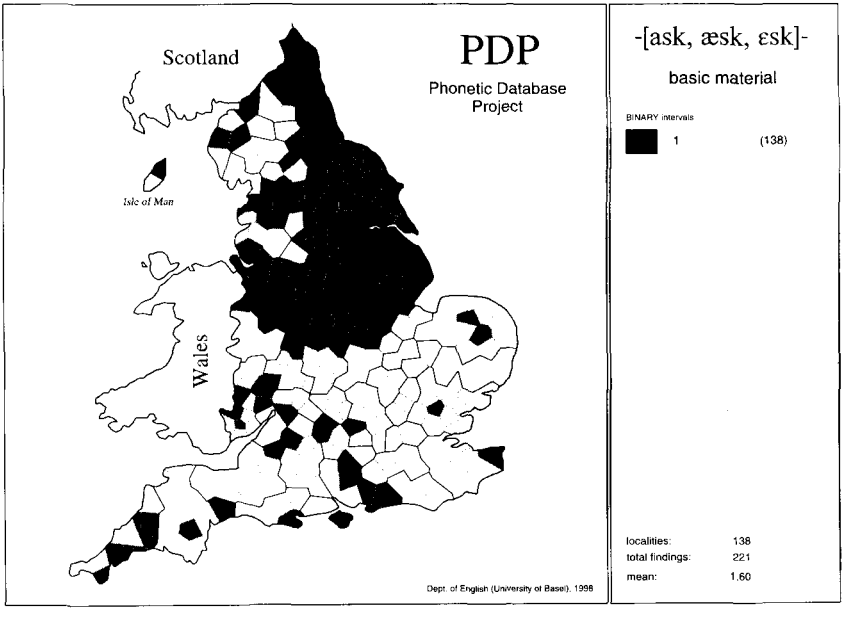


Figure 14: ***ask*** (long vs. short vowel)

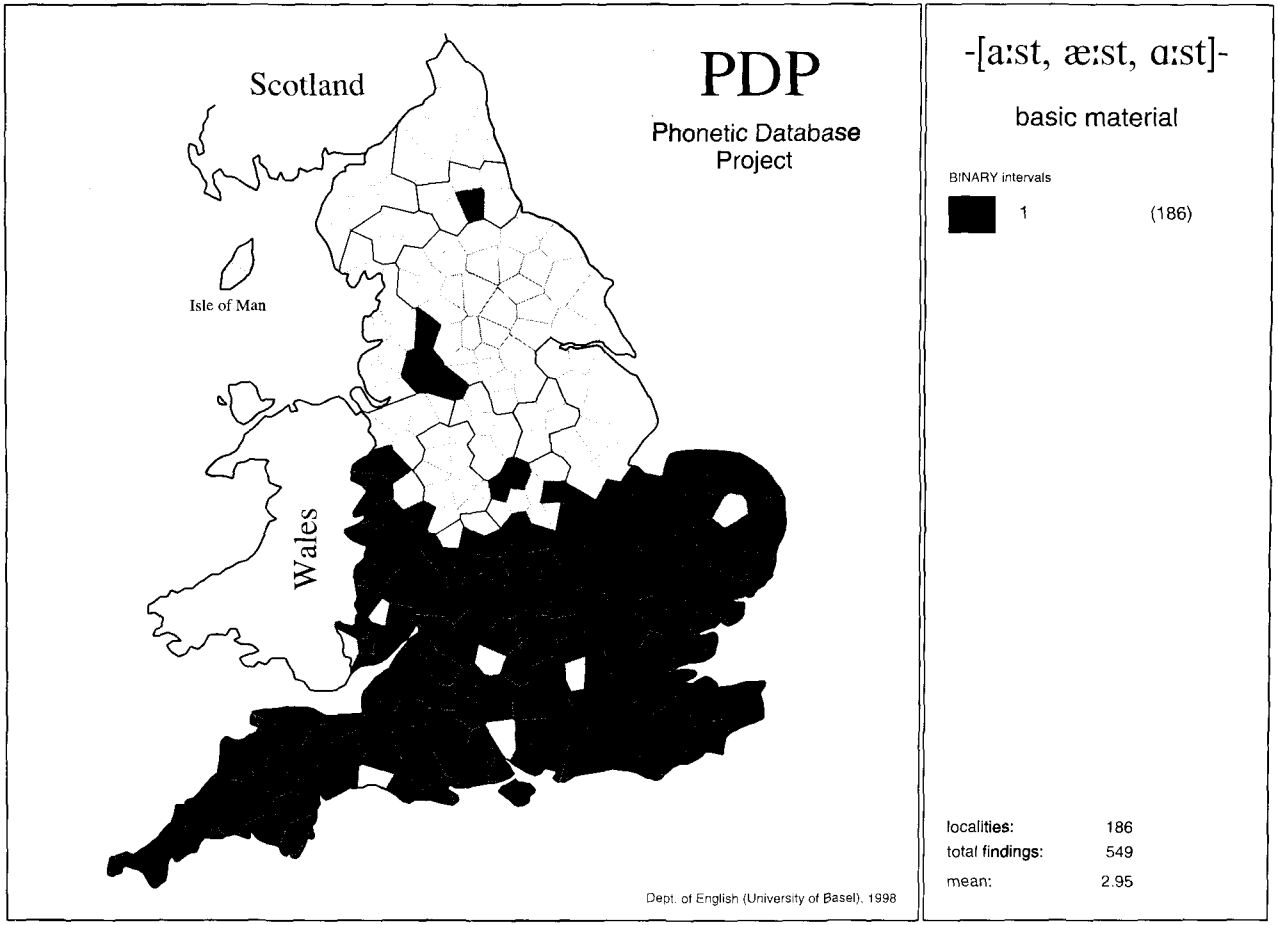


Figure 15: ***ask*** (long vowel)

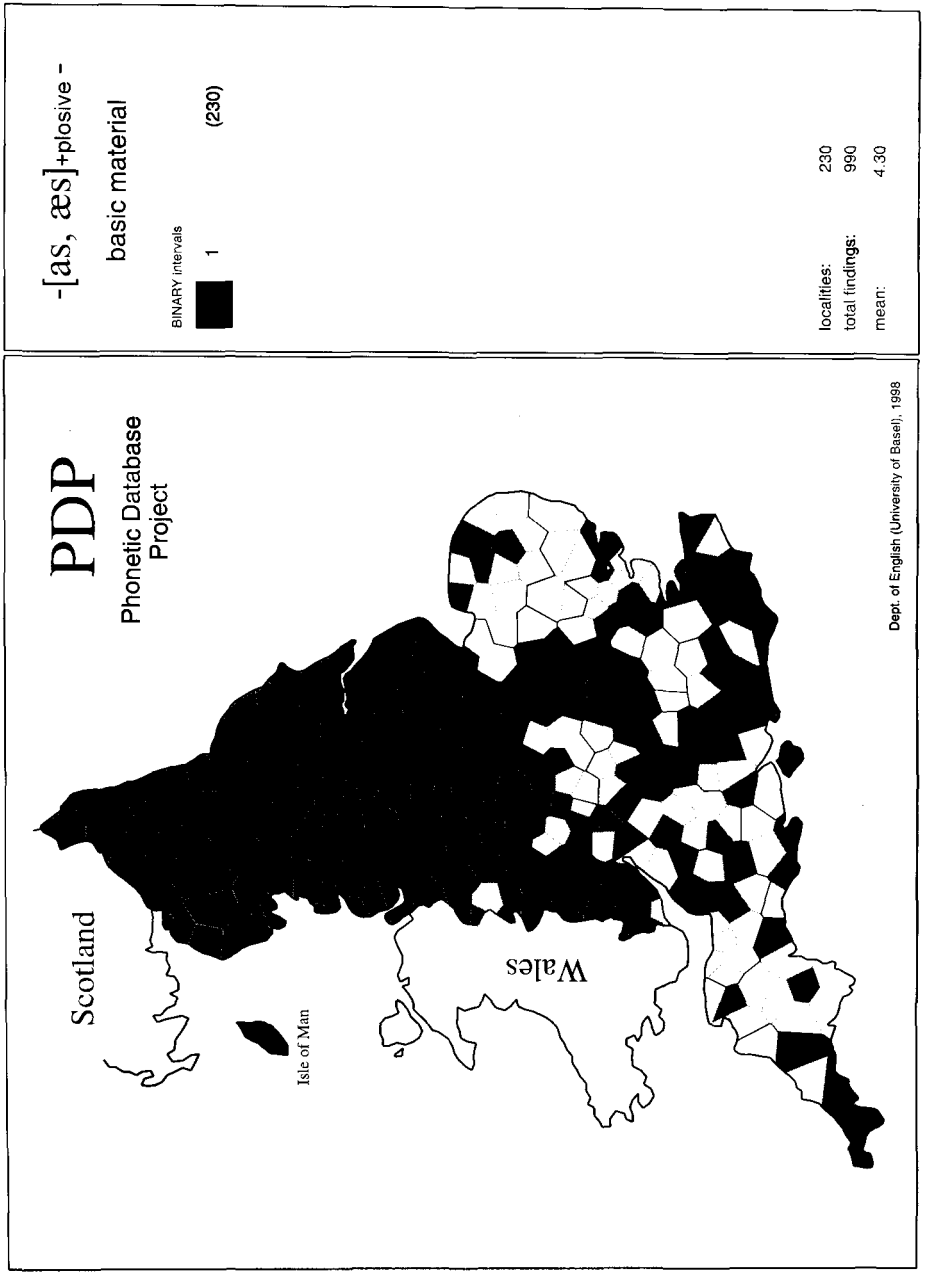


Figure 16: ***as+C*** (short vowel)

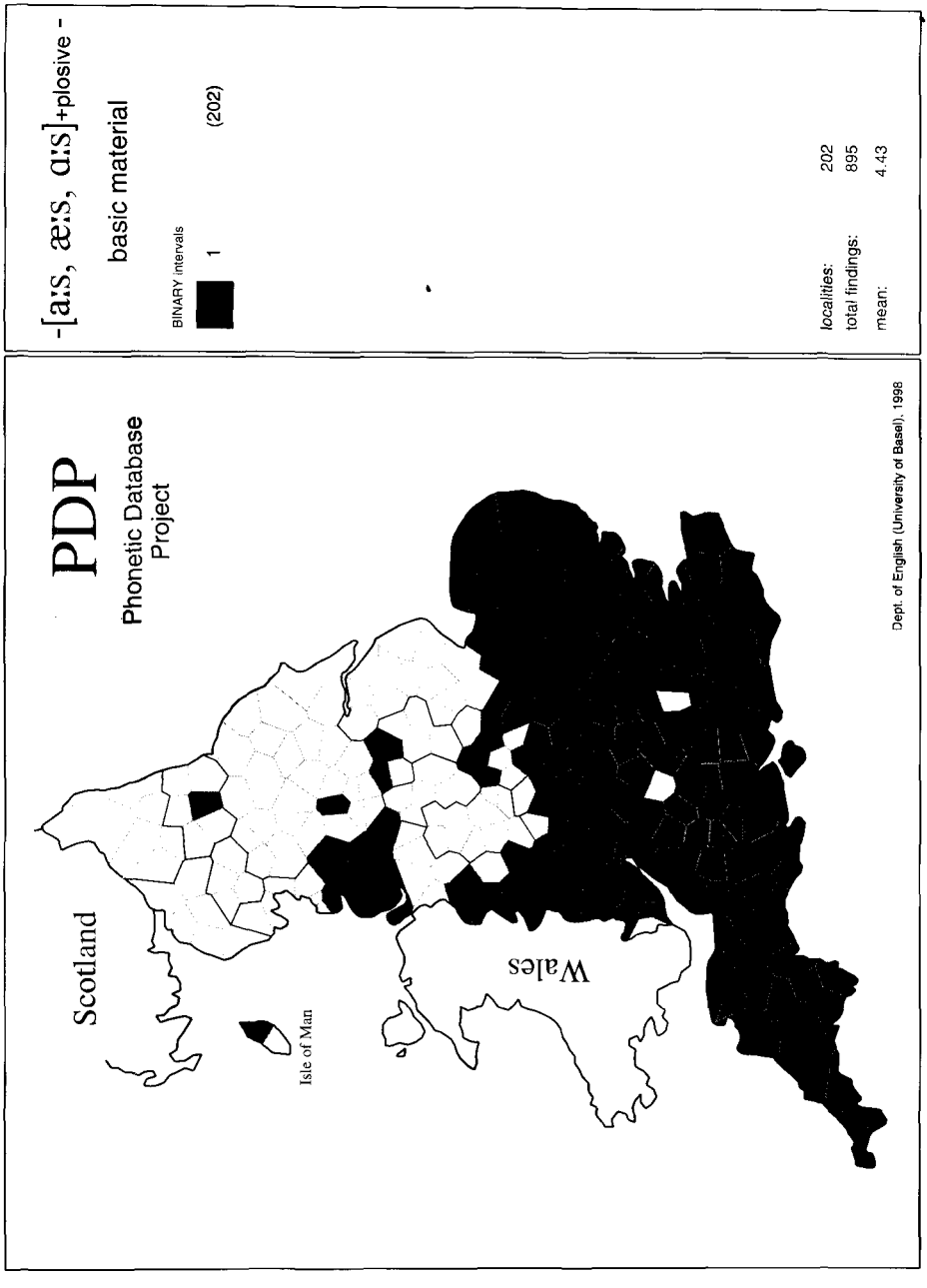


Figure 17: ***as+C*** (long vowel)

(File created by QScan on 23. 1.1999 at 14.13. Copyright e.r. 1997)

PHONETIC DATABASE PROJECT English Seminar UNIVERSITY OF BASEL

LIST OF FINDINGS. Original Filename: RS.Q2. For STATISTICS, see file ST.Q2

Keyword Pattern: *92-4

SEARCHSTRING: %???#46?#07?* or %???:#46?#07?* or %???.#46?#07?*

N92-4.EXT; IX.2.4 ASK HIM

Nb 1-3: ask
Nb 5: ask
Cu 4: ask,
Du 1: ask
Du 4: ask,
Du 5: ask,
La 4: ɛsk,
La 5: ask
Y 2: ask
Y 4: ask
Y 9: ask
Y 10: ask,
Y 11: ask
Y 16: ask
.
.
.
Ess 9: a̱:sk
Ess 10: ä:sk
Ess 11: ɑ:sk
Ess 12: ɑ:sk
Ess 14: ä:sk
Ess 15: ɑ:sk
.
.
.
Ch 1: ask
Ch 2: ask,
Ch 5: ask
Ch 6: asks BN [pp. askɪn3]
Sa 2: ask
.
.
.

Figure 18: phonetic list: IX.2.4 *ask (him)*

Ch 6: tlo:zbaskɪt
Db 1: tlʏ·əsba:skɪt
Db 2: klœəzbaskɪt,
Db 2: klo:zbaskɪt REP
Db 3: tlü:zbaskɪt
Db 4: tl^{ø}ü:zbaskɪt
Db 5: tlœəzbaskɪt
Db 6: tlü:zbaskɪt
Db 7: tl^{ø}u:zbaskɪt
Sa 1-2: klo:zbaskɪt
Sa 3-4: klo:zba·skɪt
Sa 5: klo:zbaskɪt
Sa 6: klo:zba:skɪt
Sa 7: wɪskət
Sa 8-9: wɪskɪt
Sa 10: klo:zwɪskɪt
Sa 11: wɪskɪt,
Sa 11: wɔ:ʃɪnba:skɪt REP
St 1: klozbaskɪt
St 2: kloœ:zbaskɪt
St 3: klœ:zbaskɪt,
St 3: klœ:zwɪskɪt REP
St 4: kloœzbaskɪt
St 5-6: klœ:zbaskɪt

St 7: klɔœzbaskɪt
St 8: baskɪt
St 9: flaskɪt
St 10-11: kloœzbaskɪt
He 1: klo:zwɪskɪt
He 2: klo:zba:skɪt
He 3-6: klo:zbæskɪt
He 7: kloœzbạ:skɪt
Wo 1: klɒœzbaskɪt
Wo 2: wɪskɪt
Wo 3: kloœzba:skɪt
Wo 4: kloœzbæ·skɪt
Wo 5: klo:zba:skɪt
Wo 6: wɛʃbæ:skɪt
Wo 7: kloœzbɑ:skɪt
Wa 1: baskɪt
Wa 2: klɔœzbɑ:skɪt
Wa 3: klǫœzba:skɪt
Wa 4: kloœzba:skɪt
Wa 5-6: klǫœzba:skɪt
Wa 7: wɒʃɪnba:skɪt,
Wa 7: kloœzba:skɪt REP BN ["older"]
Mon 1: bɑ:skɪt
Mon 2-3: klo:zba:skɪt

Figure 19: phonetic list: ***V(:)sk***