THE SOUND OF WORDS: SOME PHONOLOGICAL INFLUENCES ON ENGLISH VOCABULARY

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One commonplace observation in historical linguistics is that sound change can assist in, perhaps even cause, the loss of certain words from the lexical stock of a language. When this observation is made in an introductory textbook, such as that by Leonard Bloomfield, it is usual to back it up by reference to the French dialectologist Jules Gilliéron's explanation for the loss of gat "cock" < Latin gallus in south-western France, which, Gilliéron says, was due to homophonic clash with /gat/ "cat" < Latin cattus. And indeed it is clear that the loss of gat "cock" and its replacement by faisan, vicaire and various reflexes of Latin pullus were caused by problems of homophony. Nevertheless, the certainty of this particular example should not lead us to overestimate the role of homophony in word loss, even if, as Michael Samuels has further shown, its general presence is certain. Thus not only Michael Samuels, but also other scholars who have more or less followed Gilliéron in this respect, for example Stephen Ullmann, have always acknowledged that languages have a variety of methods of avoiding homophonic clash. On the other hand, only a few scholars have suggested that such clash does not lead to word loss. One of these is Barbara Strang, who, shortly before her untimely death, argued that the favoured form of response to homophonic clash, insofar as any response at all is called for, include merger, fusion and semantic attraction, and, at

1 A lecture delivered in the John Rylands University Library on Wednesday, 19 January 1983.

2 I am especially grateful to the late Professor Barbara Strang for providing some essential stimulation in the writing of this paper, and I must also express my thanks to Professor N. E. Collinge, Professor R. Lass and Dr. D. G. Scragg for their most useful comments and criticism of an earlier version of it.


4 J. Gilliéron and M. Roques, Études de géographie linguistique (Paris, 1912), ch. 12.


least implicitly, denied the response of word loss. Equally recently, Roger Lass has vigorously argued that all explanations which correlate word loss with homophonic clash are both ad hoc and rely on an unacceptably teleological explanation.

My aim here is to provide a more empirical study of the problem than has been usual, and I shall attempt to do this by considering a specific set of phonological changes in the history of English and the effects which these changes have on the lexical stock of the language. Although the specific individual changes we shall look at are sometimes diverse in both time and character, they all share one feature in common. This is that the consequence of each change is that a word-initial consonant cluster which was once permissible in English is no longer permissible, or, at least, even if in some sense theoretically permissible, no longer occurs. The clusters which concern us, as they must have existed at the prehistoric stage of Old English, are:

1. voiceless velar fricative plus liquid, approximant or nasal, i.e. /xl, xr, xw, xn/;
2. voiced velar fricative plus nasal, i.e. /yn/;
3. velar stop plus nasal, i.e. /kn/;
4. back approximant plus liquid, i.e. /wl, wr/;
5. labial fricative plus nasal, i.e. /fn/.

Some of the changes which occurred are quite clear. Thus, the voiceless velar fricative /x/ was weakened early in the Old English period to /h/ and lost no later than the beginning of the Middle English period. So, for example, /xr/ became simply /t/. Only in one case was the probability of homophony sometimes avoided, for in northern dialects of English /xw/ usually developed to the voiceless approximant /m/ or some other similarly differentiated sound (sequence), giving contrastive pairs such as *whether* and *weather*. It is equally well known that during the Old English period initial /y/ became /g/, bringing together types (2) and (3) above as velar stop plus nasal, and then, at a much later date —probably the mid-seventeenth century—a lenition process reduced the clusters to simple /n/.

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9 Discussion of these sound changes can be found in any of the standard
processes may have affected types (4) and (5), and we shall leave our discussion of them to a more appropriate point later in this paper.

Let us now, however, turn our attention to the question of word loss. In other words, what proportion of the Old English word stock beginning with the above consonant clusters has been lost in the development of the language to the present-day? In order to answer this question and then to consider the significance of the answer, I have calculated, in an extremely rough-and-ready fashion, a Word Loss Rate for each consonant cluster. The basis of this calculation is as follows: for each cluster I have listed all those words which occurred in Old English, subject to the provision that where there is a group of words which are clearly derivable synchronically one from the other (as with a simple word and a group of compounds) I have counted only one item. Existence in Old English is defined as citation in the Bosworth-Toller-Campbell *Anglo-Saxon Dictionary*,\(^\text{10}\) with the exception that I have excluded a few dubious items. Then I listed which of these words remain in Modern English, as shown in the O.E.D. and Supplements.\(^\text{11}\) I then counted what proportion of the original word-stock remained, what proportion had been lost, and I used a reduced score for words which the O.E.D. classes as dialectal only. The exclusion of synchronically-related items, as mentioned above, is justifiable in that it allows us to eliminate from the data certain characteristics which are irrelevant to, and perhaps even confusing for, the question at hand. Thus, the rich repertoire of derivational devices available in Old English compared with Modern English means that many compounds and variations of verbal formation (to take but two instances) have been lost for presently irrelevant reasons. A consequence of this provision is that the figures below suggest a much greater retention of Old English vocabulary than is actually the case.

handbooks, of which the most authoritative, although slightly out-dated, is K. Luick, *Historische Grammatik der englischen Sprache* (Oxford, 1964, 2 vols.).


Calculating the Word Loss Rate for each consonant cluster and the meaning of the calculated figure is now quite straightforward. Thus, if, for example, 25 per cent of words beginning with some cluster /XY/ have been lost, then the Word Loss Rate for that cluster will be 25. The higher the Word Loss Rate, the greater the proportion of words which have been lost. A Word Loss Rate of 0 will mean that no words have been lost, one of 100 will mean that all relevant items have been lost. Because of the crudeness of the calculations and the relatively low number of items dealt with in each calculation, I have rounded off each figure to the nearest 5.

What, then, were the results obtained? For the consonant clusters listed above, with the exception of /fn/ and /wl/, whose distinctive loss rates provided the initial motivation for this paper, we find that all the clusters have loss rates of between 40 and 60. The highest rates are for /xn/ and /xr/, both at 60, whereas /xw/ has the lowest rate, namely 40. But /xw/ is a special case, both for the reason that we have already given, namely its special development into Modern English, and because the set of words with this original initial cluster contains an abnormally high proportion of words of grammatical as opposed to lexical function, e.g. who < OE hwi, what < OE hwæt. Whatever else may be said about lexical loss, it is fairly certain that grammatical words are particularly resistant to loss. It therefore seems reasonable to suppose that this high proportion of grammatical words distorts the evidence, and therefore it would seem fair to exclude such words from the calculation. The result of doing so is that the loss rate for /xw/, not surprisingly, then rises to 50, and the lowest rate, namely 45, is to be found for /kn/. The actual figures are as follows:

/kn/ 45
/wr/ 50
/xl/ 50
/xw/ 50
/gn/ 55
/xr/ 60
/xn/ 60

How do these figures compare with those for sets of words where no comparable changes have occurred? In order to answer that question I have calculated, on the same basis, word loss rates for five onset groups where there has either been no phonological
change or such changes as have occurred are irrelevant. The following figures were obtained:

<table>
<thead>
<tr>
<th>Onset Group</th>
<th>Loss Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>/bl/</td>
<td>35</td>
</tr>
<tr>
<td>/li(:)/</td>
<td>40</td>
</tr>
<tr>
<td>sp</td>
<td>40</td>
</tr>
<tr>
<td>gl</td>
<td>45</td>
</tr>
<tr>
<td>/dr/</td>
<td>50</td>
</tr>
</tbody>
</table>

The choice of these particular onset groups was quite random, except in two ways. Firstly, /li(:)/ and /gl/ were deliberately picked on the grounds of their close phonological relationship to several of the now-forbidden clusters, as I shall further discuss below. Secondly, one demand that had to be met was that the number of words in each set should be neither tiny nor extremely large, but rather should approximate to the number of words found on average in the sets where the sound changes are crucial. It should be fairly obvious that the possibility at least exists that frequency of occurrence may have a role to play in lexical loss, and thus making this demand will make any comparisons more secure.

If we now compare the two sets of calculations, the most obvious point to make is that, however one calculates the difference—whether by comparing means, medians or ranges—those in the first set have loss rates which are consistently ten points higher than those in the second set. And since the onset groups in the second set, with the exceptions noted above, were chosen more or less at random, there seems no reason to suppose that the collection of more data would significantly alter this conclusion. Some confirmation of this is provided by the much more detailed analysis of English monosyllables beginning with /b/ which was made by Barbara Strang. That analysis showed a loss rate of 35 for the relevant forms, exactly the kind of figure which we would hope for.\(^\text{12}\)

Some more evidence of reliability can be found in a comparison of the loss rates for /li(:)/ and /gl/ with those for /xl/ and /gn/. /li(:)/ is closely related to /xl/, since the latter becomes /l/ by sound change, and so we find homophonous pairs such as *list* ‘to catalogue’ < *liste* ‘a list’ against *list* ‘listen’ < *hlystan*. And in this case it can be seen that the loss rate for /li(:)/ is ten points lower than that for /xl/. The relationship between /gl/ and /xl/ is similarly close, even if of a different kind—the contrast between

\(^{12}\) Strang, op. cit.
velar stop and velar fricative in the initial member of the cluster and again the loss rate of the persisting cluster is lower, even if only by the minimum of five points in this case. A similar relation holds between /gl/ and /gn/, and yet again the persisting cluster /gl/ has the lower loss rate, this time by ten points.

What conclusions can we draw from the above? Given the very small amount of data which has been used, I think the most important point is that the results are remarkably consistent. The consequence of this is that we can have some confidence in the data as a reliable guide to the influence of phonological factors in the loss of lexical stock. Without such confidence, of course, this study could proceed no further.

The further conclusions to be drawn are rather less self-congratulatory, but of more general interest. The most important of all is surely that, at least in English, phonological factors do play a role in word loss, and that words which originally began with a now-forbidden phonological onset are more likely to have been lost than words which did not originally begin with such an onset. More generally, therefore, we might claim that words which are, or come to be, phonologically disfavoured are correspondingly likely to be lexically disfavoured too. To this extent, therefore, the commonplace from which we started seems to be confirmed. Nevertheless, it must also be said that such phonological factors do not play a dominant role in word loss, as can be observed from the fact that the loss rates for the words with now-forbidden initial clusters are, on average, only ten points lower than the loss rates for other words. This difference ought not to be under-emphasized, for it is in fact one of 25 per cent, but it would be equally wrong to over-emphasize it. At best, the phonological features constitute one variable amongst several in the overall conditioning for word loss. Other, and probably more important, variables might include competition from loan words, taboo, extralinguistic change and the other various phenomena associated with semantic change.

Given the existence of phonological factors as a conditioning variable for word loss, the question which now springs most immediately to mind is quite obviously: why should this be? I can think of four possible answers to this question, which I discuss below in turn: (1) the results are the product of pure chance; (2) the results are the product of the relative infrequency of the now-forbidden clusters; (3) the results are due to the avoidance of
homophonic clash; (4) the results are due to the relevant words breaking syllable-structure constraints which emerge during the history of the language. As we shall see, these answers need not be mutually exclusive and, furthermore, additional subsidiary explanations may be required. Nevertheless, they do seem to represent the major possible lines of enquiry.

At present we need scarcely waste any time with the first of these answers, which in effect denies the reliability of the data which we have collected. We have already noted that the results obtained are too consistent to be ascribed merely to chance, and therefore they require an explanation, not a dismissal. Therefore we can safely move on to discuss the second answer, even if at a later stage we have to come back to the question of chance.

Since we have already pointed out that the frequency of the now-forbidden initial sequences and the frequency of the still-used sequences which we have studied have been roughly similar in the history of the language, it would seem fair to claim that we have already proven that the results cannot be due to the relative infrequency of the now-forbidden clusters. However, since it is these days a relatively simple matter to determine frequency-occurrences in Old English, it is worth noting the figures for each of the now-forbidden clusters, which are as follows:\textsuperscript{13}

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Frequency</th>
<th>Word Loss Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>/kn/</td>
<td>2584</td>
<td>(45)</td>
</tr>
<tr>
<td>/wr/</td>
<td>2381</td>
<td>(50)</td>
</tr>
<tr>
<td>/xl/</td>
<td>5285</td>
<td>(50)</td>
</tr>
<tr>
<td>/xw/</td>
<td>17597</td>
<td>(50)</td>
</tr>
<tr>
<td>/gn/</td>
<td>297</td>
<td>(55)</td>
</tr>
<tr>
<td>/xr/</td>
<td>5294</td>
<td>(60)</td>
</tr>
<tr>
<td>/xn/</td>
<td>436</td>
<td>(60)</td>
</tr>
</tbody>
</table>

The extremely high figure for /xw/ is, of course, due to the inclusion of grammatical words of very high frequency, words which it would have been both impracticable and unwise to exclude. But apart from pointing out that the clusters with the

\textsuperscript{13} These figures are compiled from the frequency-lists in R. L. Venezky and A. di Paolo Healey (eds.), \textit{A Microfiche Concordance to Old English} (Toronto, 1980). I have included almost all variant spellings which may be held to represent the relevant clusters but excluded proper names, Latin forms and other obvious scribal errors from the calculations. My thanks must go to the late Angus Cameron, Toni Healey, Ashley Crandell Amos and the rest of the staff at the Dictionary of Old English project at Toronto for their help and generosity both in this and in other projects.
highest loss rates are on the one hand /xr/, the second-most frequent cluster, and on the other hand /xn/, the second-least frequent cluster, there seems little to say here, except that at first sight frequency appears to play little role in word loss.

Yet the question of frequency cannot be dismissed out of hand. To anticipate what I shall say later, it would appear plausible to suggest that there is a frequency threshold, and that if clusters do not cross that threshold, then they are likely to be lost (or, perhaps, we should say excluded) from the phonological inventory, often to be accompanied by the words in which they are represented. But that threshold must be set at a very low level, even if we are able to recognize that Dutch *fniken* "to clip someone's wings" and *fnikend* "pernicious", the only examples of initial /fn/ persisting in that language, are rather freakish instances. We shall have some more useful suggestions later on, but at present all that we need do is note that all the clusters which we have considered so far appear to be above any possible threshold, which means that our second answer seems inappropriate here.

Despite the existence of languages such as, in Indo-European, French and, elsewhere, Chinese, where sound change and an increase in the number of homophones seem to have travelled onwards side-by-side in apparent equanimity and with little disturbance to the linguistic system, linguists (at least those who are either English-speaking or French-speaking) have always assumed that the language norm is to avoid homophony. Hence, of course, the importance attached to Gilliéron's example which we mentioned at the beginning of this paper. And indeed, anyone who denied the importance of homophone-avoidance would quickly regret his intrepidity, even if the discussion were confined to English. Thus, to take only two examples, the history of neither the third person plural personal pronouns (they, them, their) nor the Old English impersonal pronoun *man* would be explicable if homophone-avoidance had not been a key factor.14

Therefore, since what I propose to do now is exactly that intrepid—or foolish—act, namely to deny the importance of homophone-avoidance, it will be obvious that I must tread

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14 For the former, see Samuels, loc. cit., and for the latter, see G. Kjellmer, *Middle English Words for 'People'* (Gothenburg Studies in English, 27, Stockholm, 1973), pp. 144 ff.
carefully. But there are two points in my favour. Firstly, it is all too easy to over-estimate the degree of confusion caused by homophony and hence the motivation for homophone-avoidance. Generally speaking, confusion is most likely to occur if the homophones belong to the same word-class. For example, the verb *to fry* and the noun *fry*, as in *small fry*, are surely never confused, and so neither is likely to be the victim of word loss for reasons of homophony. Even homophones of the same word-class are unlikely to prove troublesome if they are sufficiently distinct semantically, for example *night* and *knight*. The trouble arises when homophones of the same word-class appear in a similar range of contexts, that is, when they have similar collocational sets. But that can be the case only with a small proportion of homophones. The second point serves more or less as a confirmation of the first, for it is that English—the present-day language at least—is remarkably tolerant of homophones. If we again turn to the work of Barbara Strang, we can observe that for the 168 actually realized monosyllables of the structure bVC/, e.g. *bit*, *bite*, etc., there are 740 different lexical items, or 4.4 items per possible sequence. This figure is almost certain to astonish everyone who comes across it. Both the frequency of homophony and our astonishment on learning of it seem to me to be valuable confirmation of the relative unimportance of homophony, since not only does the language contain a great many homophones, but the speakers of the language are blissfully unaware of that fact.

But all that is, in a sense, mere theory. What we must consider are the facts in the present case. Therefore let us assume that homophone-avoidance is an important factor in word loss. Now it so happens that the consequences of the sound changes which have affected the now-forbidden clusters is the same in each case—the cluster is simplified and becomes identical with some already-existing onset group: thus /kn/ becomes /n/, /wr/ becomes /r/, etc., and so homophones such as *knight* and *night*, *wring* and *ring* are created. If our assumption is correct, then it ought to be the case that potential homophones are lost more frequently than other words. At first sight it might seem quite simple to see whether or not this is true, but, alas, this is not so, especially when we investigate words which have been lost, for estimates of earlier

15 Strang, op. cit.
hypothetical pronunciations, especially when dealing with individual words, can often be little more than guesswork. Even so, it is worth pursuing the matter. What I have done is to take one of the forbidden clusters, /wr/, and tested to see if, as the assumption would predict, the loss rate for the potential homophones belonging to that set is higher than the loss rate for the remainder of the words beginning with /wr/. The results obtained gave a loss rate of 45 for the homophones and of 50 for the non-homophones. Given these results, it seemed best to repeat the experiment with another cluster, this time the chosen cluster was /kn/. And in this case the loss rate for the homophones was 35, for the non-homophones 50.

At first sight these results would seem to imply not only that our assumption that homophony promotes word loss is incorrect, but also that the reverse is true, namely that homophony actually promotes word retention, for in both cases it is the homophone set which has the lower loss rate. Even if one does not wish to stand so opposed to received linguistic opinion, it can surely be said with some safety that homophone-avoidance is not a major factor in word loss, except, probably, in particular instances and at particular times. What seems far more probable is that the loss rates for homophones and non-homophones are randomly distributed with respect to that variable. This fits in well enough with the evidence, even if it does mean that our third possible answer has to be rejected. I should, perhaps, end this particular point by saying that, nevertheless, I do not find it inconceivable that homophony promotes lexical retention, in other words, that homophones reinforce each other's presence in the language. This, together with a Biblical reference, may well explain the persistence in the language of the phrase *an ear of corn*.

At the risk of being accused of hitting a man when he's down, let me pursue the question of homophony further. If homophony does cause word loss, it would still only explain our data if it were the case that the word loss was more likely in the phonologically-affected forms, e.g. that *knight* was more likely to be lost than *night*. Otherwise it would be difficult to explain why, say, /xl/ has a higher loss rate than /li(:)/. But I can find no evidence to support that claim, nor do I believe that any could be found. It seems more likely that other factors will determine which homophone will be lost, for example, the availability of a substitute lexical element or the relative frequency of the lexical
items concerned. If we take Gilliéron’s example cited above, it seems implausible to suggest that /gat/ “cock” was lost in preference to /gat/ “cat” because the former was the word subject to the crucial, homophone-creating, change. Far more probable causes, surely, are the greater emotional importance of cats (although this may be a personal prejudice) and the availability, in some areas at least, of the humorous replacement of /gat “cock” by /vicaire/. Note also that this replacement is actually an instance of homophony being seen as linguistically fruitful, and of one homophone being replaced by another. Homophone-avoidance is an attractive proposition, but it causes as many problems as it solves.

The fourth and final possible answer concerns what are known as Syllable Structure Conditions. Let me explain these as simply and as briefly as possible. Consider three potential phonological strings /flik/, /blik/ and /bnik/, and the possibility of their acceptance as normal English. The first of these, /flik/, not only is a possible string in English, it actually does exist, since it is the word /flick/. However, neither of the other two do. In the case of /blik/ this is a matter of pure chance—we could quite well have such a word, compare it with /blæk/ “black” and set them both alongside /flik/ and /flæk/ “flak”. It will be obvious that there is nothing to stop /blik/ being an English word—it just so happens that it is not. On the other hand, not only is /bnik/ not an English word, it could not be one, and in this it differs from /blik/. The reason for this is that there is a Syllable Structure Constraint in English which prohibits initial stop + nasal clusters, that is, we cannot start off an English word with /bn, dn, gn, pn, tn, kn/. Readers may recall that when Flanders and Swann used this constraint as the basis for one of their songs they were careful to avoid violating the constraint, and instead used a schwa vowel to break up the impermissible cluster: hence, “I’m a /gənu/, not a /gnu/”.

Now the interesting feature here is that it is fairly clear that in present-day English /kn/ and /gn/ are not recognized as permissible onset clusters in English syllables; that is to say, if we come across a word which starts with either /kn/ or /gn/ we immediately class it as a non-English word. How this state of affairs originally

16 In fairness, it should be pointed out that such a possibility has indeed been envisaged by scholars such as Ullmann, cf. Ullmann, loc. cit.
arose is more difficult to say, for we are faced with a chicken-and-egg problem: was the exclusion of such clusters due to the loss of /k/ and /g/ or was the simplification of the clusters due to a prior adjustment of the Syllable Structure Constraints of English? Perhaps this does not matter too much, for it is fairly clear that the relevant shifts in phonological structure took place round about the seventeenth century. Under these circumstances, what one would have to do is show that the majority of word losses in the sets concerned took place at approximately the same time, for this would be the only time when the revision of the Syllable Structure Constraints of English could possibly have a relevant lexical effect. And this seems impossible to do, partly because of the limited evidence afforded by the dictionaries, but also because the little evidence there is tends to suggest a fairly steady rate of loss through the centuries. This strongly suggests that our fourth answer too is inapplicable.

And there is a further point to be made here. It is a simple matter to show that the present-day language does have a constraint forbidding /kn, gn/. Indeed, what is surprising, in a sense, is that the same constraint did not operate in Old and Middle English, for all other initial stop + nasal sequences have always been excluded from the language. On the other hand, the absence of sequences such as /xr, xn, xl/ seems not to be due to such a constraint, as, perhaps, is amply evidenced by the history of /xw/ and its gradual development (in some dialects) to /m/. Therefore, even if it were the case that Syllable Structure Constraints could be shown to play a role in the loss of some words, such constraints could not possibly have played any role in the loss of other words.

To sum up so far, we have considered four possible explanations of why, in English, words which originally began with what are now forbidden, or, rather, non-existent, clusters are more likely to have been lost than other words. Of these, only the explanation of relative infrequency seems to have plausibility, and even there the plausibility is somewhat dubious. To stop at this point, therefore, would be an admission of defeat, and although such an admission would be in itself linguistically interesting, since

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17 A recent and interesting study of this problem is Marianne Cooley, "Phonological constraints and sound changes", *Glossa*, xii (1978), 125-35.
it would undermine the commonplace observation which was our starting-point, I want now to be a little more positive.

In order to achieve this, we shall have to look at two clusters which belong to the group that we have already discussed but which we have so far ignored. These clusters are /wl/ and /fn/.

What distinguishes these two is that the former has a loss rate of 90, the latter a loss rate of 100. The number of words concerned is very low—in the case of /wl/ I have counted twelve head-words and in the case of /fn/ only three head-words. Equally, the frequency of /fn/ in Old English is lower than for any other relevant sequence: there are only 56 examples. On the other hand, there are 888 initial /wl/ sequences, because two or three of the words are very common in Old English. This might well be compared with /gn/ where 15 head-words account for only 297 initial occurrences and with /xn/ where 19 head-words account for 436 initial occurrences. Since I hope shortly to demonstrate that relative infrequency does cause word loss, it is clear that these figures do pose a major problem which will have to be resolved. However, for the moment we need do no more than bear it in mind for future discussion.

The sound change which causes simplification of /wl/ > /l/ is not difficult to explain phonologically, but the date when it occurred is much harder to establish. E. J. Dobson has suggested a date in the fourteenth century, whilst I would suggest that the change was slightly later, probably sometime in the fifteenth century, but in either case it is pretty clear that the majority of words concerned seem to have been lost at about the same time as the change. Now this looks like good evidence in support of a claim that this sound change, at least, causes word loss. But this is not necessarily so, for the fact is that it is the existence of such word loss which constitutes the majority of the evidence for the dating of the change, and we may therefore have done no more than enter a vicious circle.

If we return, as I think we must, to the role of Syllable Structure Constraints, it then appears as if the loss of /wl/-words is a prime candidate for exemplifying the role of such constraints in word loss. But then we have to ask why, if this is what happened to /wl/-words, the same thing did not happen to /wr/-words? One (rather

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inadequate) answer is that it is quite certain that the simplification of /wr/ > /r/ took place at a chronologically distinct time, namely the early seventeenth century. Nevertheless, it still seems to me that in both cases we are dealing with clusters which become phonologically excluded from English, and that they become excluded for identical reasons, namely that they contain the sequence of approximant plus liquid.

Yet there must be a crucial difference between the two clusters, and it seems to me that this difference must be that whilst /wl/ was always relatively infrequent, /wr/ was always found with a quite normal frequency: in Old English /wr/ is found in 33 head-words which account for 2381 initial occurrences. Now it is far from implausible to suggest that when the relevant phonological sequences were taking place, native speakers would be somewhat embarrassed by words necessitating the abnormal initial sequences. What should they do? Use the older pronunciation, which was coming to sound un-English? Or use the newer pronunciation, which, since it would be obviously different, might well be socially stigmatized? Far better, surely, to avoid the issue by using another word. Now in the case of words beginning /wl/, which were so poorly represented in the language, this solution would cause no problems. But for words beginning with /wr/, which were quite substantially represented in the language, such a wholesale writing-off of vocabulary could scarcely be tolerated. Some words might be disposed of, and this may well account for the loss rate of 50 found for /wr/, but others would simply have to be retained and speakers would have to put up with their temporary embarrassment.

But if this combination of Syllable Structure Constraints and relative infrequency explains the contrasting fates of /wl/ and /wr/, why does relatively infrequent and un-English /gn/ not suffer the same fate as /wl/? The explanation here, I think, must be that /gn/ words were protected by the exactly parallel phonological change which was affecting /kn/ at the same time. /kn/, you will recall, occurred initially in Old English, 2584 times, and it was represented by 30 head-words. It, therefore, had a similar status to /wr/.

19 Dobson, loc. cit.
20 Compare here labialized /r/, used by some speakers and clearly socially stigmatized. It is by no means fanciful to suggest that Mr. Roy Jenkins is disliked by some members of the electorate precisely because he has such a pronunciation.
but whereas /wl/-words were lost in isolation, /gn/-words only suffered linguistic pressure at the same time as /kn/-words, and, indeed, the two sets may have merged phonologically with each other before the final merger with /n/. One also has to ask why /xn/-words had a loss rate of only 60 despite their relative infrequency. Again, they could have been protected by the commoner /xl, xr, xw/ sequences, but there is also the point which we have made already, namely that in such cases Syllable Structure Constraints appear to have played no role. But all in all, the case for claiming that the combination of relative infrequency and Syllable Structure Constraints, but not, at least to any great extent, either factor in isolation, has been a prime cause of word loss, seems reasonable.

Let us now move on to consider the case of words beginning /fn/, all of which have been lost. Even when they still existed, there were so few of these, and they occurred so infrequently, that it might be supposed that this infrequency would alone account for their loss. In addition, we should also note that initial /fn/ clusters potentially violate Syllable Structure Constraints in English. Therefore it should be clear that words with initial /fn/ have precisely the combination of low frequency and an un-English cluster which would predict that such words are likely to be lost. Of course, when we recall Dutch fnuiken and fnuikend, cf. above, we have to acknowledge that the prediction cannot be entirely firm.

But there seems to me to be another, and better, phonological explanation for the loss of /fn/-words. The most common Old English /fn/ head-word is fnæst “breath”, which has derived forms such as fnæsan “sneeze”, and in this connection it is probable that /fn/ was in varying degrees onomatopoeic, that is, it involved genuine imitation, as, say, in cuckoo, or what J. R. Firth has called phonaesthetic and G. V. Smithers has called ideophonic, that is, it involved sound-symbolism, as with initial /sl/ clusters in words such as slime, sludge, slip, slither, slide, etc.21 Now there is in English a rival phonaestheme to /fn/, namely /sn/, which was probably borrowed from Scandinavian and which rapidly became more common than /fn/. /sn/ has, of course, the undoubted

advantage of more closely adhering to the standard phonological patterns of English. It seems undeniable that /fn/ was ousted by /sn/, just as, more particularly, fnæsan was ousted by sneeze, and although this may in large part have been due to the relative infrequency of /fn/, it is surely clear that the key factor was the availability of a substitute form.

What conclusions can we draw from all this? Let me start with two negative ones. First of all, and most unfortunately, there seems to be no obvious explanation of why words with clusters such as /xr/, /xl/ should have been especially subject to loss. It would be most satisfying if someone could show that these cases are merely statistical freaks. The other negative conclusion is less unfortunate. It is that it seems certain that homophone-avoidance has not been a major factor in lexical loss. Despite Gilliéron’s example, this seems to me to be welcome, for the concept of homophone-avoidance leading to word loss is quite at odds with the evidence provided by many quite different languages.

On the positive side, the evidence clearly indicates that if words have a syllable structure which occurs only infrequently and is at best marginal to the normal phonological structure of the language, then such words are clearly susceptible to loss. There does indeed appear to be a catastrophe threshold relating to syllable structure, and sets of words below that threshold are subject to severe loss, in some cases to total elimination. If it is impossible to set limits on that threshold with complete accuracy and if it is impossible to make unerring predictions as to word loss, and both are surely the case, then our reaction should be one of gratitude, gratitude for the waywardness and uncontrollability of language. Nevertheless, it does appear that the way in which we pronounce words does decide for us whether or not we use them, although not, perhaps, in ways which linguists have usually imagined to be the case.