RHYME IN ENGLISH TWENTIETH-CENTURY POPULAR SONGS (AND SOME OTHER GENRES)

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Abstract

An examination of the rhyming practice of a number of poets, especially twentieth-century song-writers, suggests that there are several rhyming traditions within English, distinguished at least in part by their use of imperfect rhymes. A more nuanced classification of imperfect rhymes than is usual in literary studies is necessary to bring out some of the patterns which emerge. In particular, the importance of nasality in the rhyme-constituent of the stressed syllable in a rhyming foot is emphasised. Different patterns of imperfect rhyme are found in nasal and in non-nasal environments. Even within these contrasting traditions there is a great deal of individual variation in what constitutes an acceptable rhyme.

1. Introduction

Precisely what is a good rhyme in English? This is a question that has been considered by literary theorists, but which it seems might have an answer which is open to linguistic interpretation. Most English speakers probably have a fairly good idea about what rhyme is, and if challenged might produce some statement about identity of final parts of a word. Even a technical dictionary such as Shipley (1970: 274) provides less information:

> [R]epetition … of identical sounds …

Gray (1992: 246) does not provide much more:

> [Rhyme] consists of … matching sounds at the end of a line of verse.

Such definitions are probably far too vague for either the literary theorist or the linguist, however, and it seems that something better must be possible.

A naive interpretation of rhyme in terms of identity of some part of some unit is however, not tenable for long. Either a consideration of actual examples of apparently rhymed verse will show it to be inaccurate, or we can find the following meta-linguistic (or meta-literary) commentary from a commentator on the folk-song of protest of the mid-1960s.

> The tune don't have to be clever
> And it don't matter if you put a coupla extra syllables into a line.
> It sounds more ethnic if it ain't good English
> And it don't even gotta rhyme.
>
> Excuse me — rhyne!
> (Lehrer 1981: 97–8 'The folk song army')

Although the reference above is to the printed version of this text, the LP-record or CD version is recorded in front of a live audience, and it is clear from the audience's reaction that they fail to notice the lack of rhyme between the words *line* and *rhyme* until it is drawn to their attention to make the point of the stanza clear. Thus it seems that, *pace* Lehrer, *line* and *rhyme* do, in fact, rhyme, and that identity at the phonemic level cannot be a pre-requisite to rhyme in current English.

That being the case, we have to ask whether there is such a thing as a definition of rhyme for current English, and if so how and where it differs from a demand of identity. Can we define in phonetic/phonological terms precisely how much latitude is permissible in structures which rhyme, and does the institution of rhyme itself teach us anything about phonological structure (cf. Minkova 2003 and her discussion of alliteration)?

The material in this paper is the result of a series of pilot studies which were run in order to look into these questions. The results seemed to be of sufficient interest to make them worth publishing, but this is not a fully-

fledged descriptive enterprise (though it would be part of the background for one). The fact that the studies are basically pilot studies is shown in a number of ways: (i) the absolute numbers considered are relatively small; (ii) as a result, summary statistics have not been provided, because they would not be meaningful – the trends must stand on their own; (iii) the studies reported each try to answer another strand in the puzzle, there is no overall unifying experimental design, which would be preferable in a complete approach to the problem; (iv) insufficient classifications in early studies are corrected in later ones.

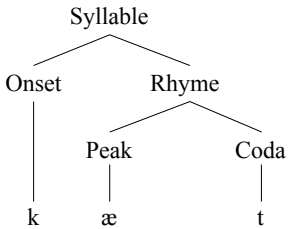
Because this is a linguistic question aimed at a literary form, there are some bits of background which come from linguistics and some which come from literary studies, and the two do not always match. In order to be as inclusive as possible, I present these differing bits of background information first, to allow readers with either type of background to catch up. I then go on to describe the experimental studies and their outcomes.

2. The background from linguistics

2.1 Syllable structure

Most linguists see the syllable, a unit whose importance to the study of rhyme will become clear below, as a structured entity, its structure being as shown in (1) for the syllable *cat*.

(1)



The onset, peak (sometimes called the nucleus) and coda may be more complex than is shown in (1), as in words like *trail* and *lump*, for example. To avoid problems of terminology, I shall refer to that part of the syllable which is labeled the 'Rhyme' in (1) as the RHYME-CONSTITUENT. Some authorities use the spelling *rime* here as an aid to drawing the distinction. Although the structure shown in (1) is controversial to some extent, it is well-justified. Apart from the rhyming tradition itself, which picks out the rhyme-constituent

as an important part of the syllable, we can consider at least the following arguments:

- Peak-coda links: There are quite definite restrictions between the vowels which can appear in the peak and the consonants which can occur in the coda in English, but virtually no such restrictions between the onset and the peak. For example, in most standard varieties of English, a peak containing the MOUTH vowel[1] cannot be followed by either a labial or a velar consonant, so that /maʊp/ is not a possible English word. This suggests that the peak and the coda are more closely related than the onset and the peak.

- Pig Latin: This is a language game typically played by young girls. The onset of the first syllable of each word is cut off, and then added as a final syllable with the peak /eɪ/. Thus *Pig Latin* becomes *igpay atinlay*. Proficient users can speak this fluently, masking their message effectively from outsiders, while remaining perfectly comprehensible to those who use this secret language. Again the rhyme-constituent in the original form shows greater cohesion than the onset does with the peak.

- Speech errors: Spoonerisms (*The queer old dean* < *the dear old queen*) are common, but errors like *God to seen* < *gone to seed*, where the onset and peak cohere but the codas exchange positions, are rare. Again, we find most coherence in the rhyme-constituent.

This terminology of syllable-structure will be used in the rest of this presentation.

2.2 Appendices

(2) farmed, grounds, sixths, twelfths, walked, widths

If we consider a set of words like those in (2) we find we have complex clusters of consonants in final position containing final consonants which

- Are not labial or velar consonants, they are all articulated with the blade of the tongue (called CORONAL consonants).

- Frequently carry meaning: the /d/ in *farmed* marks past tense, the /θ/ in *sixths* marks fractional part and the final /s/ in *sixths* marks plurality.

- May break the general sonority pattern; in particular the final /z/ in *grounds* is widely held to be more sonorous[2] than the preceding /d/.

- Are irrelevant in the assignment of stress; this cannot be seen in monosyllables, but consonants towards the ends of word can be important in determining the overall stress of the word: contrast *common* and *exist* where the latter ends in the consonants /st/ and has second-syllable stress, while *common* has first-syllable stress and only a single final consonant. The instances in (2) do not affect stress patterns. *Covets* has the same stress pattern as *covet*.

These final consonants are sometimes called APPENDICES (e.g. Giegerich 1992: 147–50). Initial /s/ in words like *spry* and *stray* is sometimes dealt with equivalently, but it is not relevant to the enterprise here and can be ignored. What is not always clear in the linguistic discussion of all these consonants is whether a word like *adze* is to be treated in precisely the same way as a word like *adds* in determining what is or is not an appendix in this sense. In the first part of this paper, the two are treated alike, but that is perhaps misleading, given that we know that final /d/ is less likely to be omitted in some dialects of English when it is a past tense marker than when it is not (see e.g. Guy & Boyd 1990 and references there). Accordingly, a different analysis is essayed later in the paper.

2.3 Foot

In linguistics AS OPPOSED TO THE SITUATION IN LITERARY TERMINOLOGY, a foot is defined as a stressed syllable and any unstressed syllables up to the onset of the next stressed syllable. That is, for the linguist, feet always start with a stressed syllable. This is generally accepted for English, at least; there may be other languages which are differently organised. Thus the difference between iambic and trochaic is carried, for the linguist not by the pattern of the feet, but by where in the line the first foot begins. Feet need not exhaustively analyse a line for linguists: it is possible to have some syllables which do not belong to feet.

3. Some literary background

Although there has been great interest in poetic metre from literary theorists in recent years (just as there has been from linguists), the notion of rhyme as a phenomenon does not appear to have attracted a great deal of attention. Most of the obvious material on rhyme is over fifty years old (see secondary literature cited). It seems that rhyme could benefit from some up-dated consideration.

3.1 Perfect rhyme

Two monosyllables rhyme if the vowel and following consonants of the two syllables are identical. In the linguistic terms introduced above, this means if their rhyme-constituents are identical, though no mention is made of appendices here and they must be assumed to form part of the rhyme-constituent in literary discussions. This is a perfect rhyme provided that the two monosyllables are not repetitions of the same word. This is called a MONOSYLLABIC RHYME or a MASCULINE RHYME. Some authorities disapprove of the rhyming of homophones (such as *bank* 'financial institution' and *bank* 'edge of a river' or *cent* and *scent*), others (e.g. Schipper 1910: 273) include this as *rime riche* or rich rhyme, which others define in terms of the overlap of lexical items, as in *four* and *before* (Stewart 1930: 170). Some authorities even object to the rhyming of words whose pre-vocalic consonants are too similar (such as *file* and *vile*). The examples of this last phenomenon given by Brewer (1912: 148) involve onset-consonants which differ only in voicing, and whether similar consonants may be too similar on other parameters is not discussed.

A FEMININE RHYME or a DOUBLE RHYME has rhyming syllables as defined above followed by identical unstressed syllables.[3] A TRIPLE RHYME (which is usually seen as a sub-type of feminine rhyme) has two unstressed syllables following the rhyming syllable. Many authorities make the point that this pattern is usually used for comic or burlesque effect. Such a use is illustrated by the following extract.

> I know our mythic history, King Arthur's and Sir Caradoc's,
> I answer hard acrostics, I've a pretty taste for paradox,
> I quote in elegiacs all the crimes of Heliogabalus,
> In conics I can floor peculiarities parabolus.
> I can tell undoubted Raphaels from Gerard Dows and Zoffanies,

I know the croaking chorus from the *Frogs* of Aristophanes,
Then I can hum a fugue of which I've heard the music's din afore,
And whistle all the tunes from that infernal nonsense *Pinafore*.
(Gilbert, n.d.: 156 'A modern major-general')

The following extract, in which the same triple rhyme is repeated in one line after another, exaggerates the burlesque effect, thereby burlesquing the burlesque.

An awful debility, A lessened utility,
A loss of mobility Is a strong possibility.
In all probability I'll lose my virility
And you your fertility And desirability,
And this liability Of total sterility
Will lead to hostility And a sense of futility,
So let's act with agility While we still have facility,
For we'll soon reach senility And lose the ability.
(Lehrer 1981: 42–3 'When you are old and gray')

We can conclude this section with a question for linguistics: If that part of a word like *paradox* starting with the first vowel is such an important unit for poetical study, why is it not considered to be a constituent in phonological analysis?[4]

3.2 Imperfect rhyme

Where the elements mentioned in the last section are similar but not identical we talk of IMPERFECT rhyme (or, equivalently, partial rhyme, near rhyme, slant rhyme, pararhyme, approximate rhyme or off-rhyme; Abrahams 1988: 164, Bauschatz 2003, Stewart 1930: 172).

Imperfect rhymes include ASSONANCE (the peak of the rhyming syllable is identical, but not the coda, as in *leap* and *mean*) and CONSONANCE (the coda of the rhyming syllable is identical, but not the peak, as in *gives* and *leaves*), as well as rhyming with syllables which are not stressed. Perhaps most notable is the EYE-RHYME, where the relevant rhyming portion of a word is spelt identically but not pronounced identically (as in *here* and *there* in most standard varieties of English).

4. A definition

As a result of this background, we can propose a provisional definition of rhyme, as follows.

> *Provisional definition of rhyme*
> Rhyme is a function of feet. Two feet rhyme if the rhyme-constituent of the stressed syllables in these feet and the complete structure of any subsequent syllables are identical (provided that the onsets of the stressed syllables are not identical).

This is a restrictive definition in that it requires identity, and in that excludes homophones, *rime riche* and imperfect rhyme. It also excludes the *line/rhyme* type of rhyme which, it has already been suggested, probably does rhyme in English. It is for these reasons that this definition is provisional. It may need to be revised in the light of requirements of individual scholars, or more generally. It nonetheless provides a sound point of departure for a discussion.

5. Study 1

In order to discover whether it is true, as implied by Lehrer (cited above) that the nasality of codas makes a difference to the rhyming potential of those codas, a small study was carried out.

5.1 Method

Popular songs by four twentieth century poets were analysed on the basis of the published lyrics (Coward 1965; Dylan 1972; Hammerstein & Logan 1956; Lennon et al. 1982). Although the mixture of British and American writers was deliberate, as was some attempt to find a diachronic spread of writers, the choice of the individual writers was largely a matter of expedience. The choice of Dylan as one of the poets studied was, however, deliberate, because it seemed likely that Lehrer's parody of the folk song of protest was aimed directly at Dylan's verse.

Only samples were taken from each of the four works considered, except that all the songs in *South Pacific* were analysed. With Coward's lyrics, only those from the 1920s were considered, and early lyrics from the Beatles and

Dylan were used (corresponding to works from the beginnings of the books consulted).

A word was assumed not to rhyme with itself, so that no such identical rhymes were included in the count. Repeated passages (for example in refrains) were counted only once. Triplets were counted as containing two sets of rhymes, *a* with *b* and *b* with *c*. From this it can be seen that the numbers given are numbers of rhymes or rhyming pairs rather than numbers of rhyming lines. In many instances it is difficult to know whether a rhyme is intended or not. If there was doubt, the line was left uncounted. This is particularly a problem in Dylan's verse, which may drift in and out of rhyme within the same poem. Care was needed with the Beatles' verse, since the rhyming word is often not the last one in the printed line (at least in the version available to me), and it is possible that some rhymes were inadvertently omitted as a result of this feature.

Rhymes were classified as perfect or imperfect, and as nasal or non-nasal. Nasal rhymes contain a nasal consonant at some point in the coda of the stressed rhyming syllable. Thus *elm, lunch, tune* are all relevant words for a nasal rhyme, as is *sunny*. In judging whether or not a rhyme is perfect, some allowance has to be made for the dialect of the writer. Thus the Beatles can rhyme *one* with *gone* perfectly using the LOT vowel while nevertheless having a perfect rhyme with *one* and *done* using the FOOT vowel (as in the examples below), and Dylan regularly uses the southern rhyme *in* and *again*. Nevertheless, rhymes in which appendices were ignored for rhyming purposes were all counted as imperfect rhymes, and they will be discussed in more detail later.

> One day you'll look to see I've gone,
> For tomorrow may rain, so I'll follow the sun.
> Some day you'll know I was the one,
> But tomorrow may rain so I'll follow the sun
> (Lennon et al. 1982: 68 'I'll follow the sun')

> I'll remember all the little things we've done
> Can't she see she'll be the only one, lonely one.
> (Lennon et al. 1982: 29 'Misery')

5.2 Results

The results for this small study are given in Table 1. Figures are given as

percentages for each set of lyrics. Coward's figures are calculated over 334 rhymes, Hammerstein's over 85, The Beatles' over 291 and Dylan's over 420 rhymes.

Table 1: Different patterns of rhyme over four sets of lyrics

	NON-NASAL		NASAL	
	PERFECT	IMPERFECT	PERFECT	IMPERFECT
Coward	77.8%	1.2%	20.4%	0.6%
Hammerstein	67.1%	0.0%	32.9%	0.0%
Beatles	70.1%	7.6%	13.7%	8.6%
Dylan	43.8%	16.7%	20.0%	19.5%

Note that the interpretation of the results in Table 1 is not entirely obvious. The overall percentage of imperfect rhymes in the nasal category is smaller for Coward than the overall percentage in the non-nasal category; however, as a percentage of the nasal rhymes, the number of imperfect ones is far larger in the nasal category than the percentage of imperfect rhymes in the non-nasal category.

5.3 Discussion

We can see from Table 1 that Hammerstein (in the data considered) does not use imperfect rhymes, and that Coward uses them much less than the Beatles or Dylan. There seems to be an increase in the use of imperfect rhymes towards the end of the century, but it is difficult to be sure how far the styles of the individual poets contribute to this; it would be premature to mark this as a trend in the twentieth century.

However, on the face of things the fundamental finding is clear: there are more imperfect rhymes in syllables with nasal codas, and there are a particularly large number of such imperfect rhymes in the verse of Dylan, possibly the butt of Lehrer's remarks. Thus it seems that Lehrer is justified in his parody. We could conclude this presentation at this point, were it not that the analysis undertaken shows that there were many more categories of imperfect rhyme than just the *line/rhyme* type that Lehrer picks out. Thus the types of imperfect rhyme are of some interest in themselves, and lead to further questions.

6. Study 2

The second study is a reanalysis of the data from the first study, but this time considering the various types of imperfect rhyme found in the work of the three poets who provided imperfect rhyme. First the various kinds of imperfect rhyme will be discussed, and then the overall findings will be presented.

The categories of imperfect rhyme were developed by consideration of the data rather than by an analysis of the various types of imperfect rhyme given by literary scholars. My categories do not, thus, entirely mirror the established categories, and this is unfortunate to a certain extent. However, since there were more categories than are listed in the traditional discussions, this was also inevitable. My categories will be discussed in terms of the traditional ones where relevant. For another different classification, see Zwicky (1976).

6.1 Eye-rhyme

The category of eye-rhyme here matches the traditional category. An example is provided below, where *mind* appears to rhyme with *wind*, which in normal speech would be /wɪnd/ with the KIT vowel not the PRICE vowel.

> Ever since we met that night,
> You take delight in shattering
> My perfect peace of mind;
> All my winsome girlish dreams
> You make a point of scattering
> Like leaves upon the wind.
> (Coward 1965: 21 'I'm so in love')

6.2 Stress-shifted rhyme

What I here call 'stress-shifted rhyme' involves the rhyming of a stressed syllable with an unstressed one. Note that in general for twentieth-century poets, the *happ*Y vowel rhymes with the FLEECE vowel. This cannot, however, be interpreted as showing phonemic identity. The KIT vowel, which for some varieties of English might seem the better equivalent, is, in many varieties, simply not found in open syllables. Our provisional definition of rhyme will have to be modified to allow for non-identity of vocalic peak if this kind of stress-shifted rhyme is to be included as a type of rhyme, as would be indicated by its frequency.

I can't believe it's happened to me.
I can't conceive of any more misery.
(Lennon et al. 1982: 24 'Ask me why')

6.3 Unstressed rhyme

In this category, two unstressed syllables are taken to rhyme, even though the preceding stressed syllables do not. This category is considerably less common than the last.

So I run down most hurriedly
And join up with the John Birch Society…

Now we all agree with Hitler's views,
Although he killed six million Jews.
It doesn't matter too much that he was a Fascist,
At least you can't say that he was a Communist!
(Dylan 1972: 30 'Talkin' John Birch paranoid blues'.)

6.4 Ignored appendix rhyme

In this category, an appendix is ignored in order to provide a rhyme. In many cases this is a fully-fledged appendix, carrying meaning (representing a morpheme in its own right), as in the first example below.

Say you don't want no diamond ring,
And I'll be satisfied,
Tell me that you want those kind of things
That money just can't buy…
(Lennon et al. 1982: 46 'Can't buy me love')

In this study, however, as noted earlier, *adds* and *adze* were taken as equivalent, so that following examples were also included under the same heading. In retrospect, it might have been useful to be rather more conservative about such instances, if only to see whether the meaningful appendices were treated differently from these formal congeners. This point will be taken up again later.

And now, you've changed your mind,
I see no reason to change mine, …
(Lennon et al. 1982: 44 'Not a second time')

A diesel truck was rollin' slow,
Pullin' down a heavy load.
(Dylan 1972: 28 'Ballad for a friend')

Wintertime in New York town,
The wind blowin' snow around.
(Dylan 1972: 13 'Talking New York')

6.5 Ignored coda place of articulation

This is the category in which Lehrer's example fits: the place of articulation of the coda consonant is ignored for the sake of the rhyme. Not only do we find bilabials rhyming with alveolars, we also find bilabials rhyming with velars and alveolars rhyming with velars.

All I gotta do
Is call you on the phone
And you'll come running home…
(Lennon et al 1982: 39 'All I've got to do')

Well, it's up in the mornin' tryin' to find a job of work.
Stand in one place till your feet begin to hurt.
(Dylan 1972: 17 'Hard times in New York town')

6.6 Similar segment rhyme

This is the category where the traditional literary taxonomy might have proved more useful. Consonance and assonance are lumped together here. However, the traditional categories also need to be considered from the linguistic point of view, since it seems that not all consonants are equally acceptable in assonance and not all vowels equally acceptable in consonance.

In the first example below, a case of assonance, /ð/ and /v/ fail to match. The two are low-intensity voiced fricatives. What is not clear is whether *treasure* is intended to make a third member of the set, with a voiced fricative only slightly further away from the other two.

Treasure these few words till we're together
Keep all my love forever.
(Lennon et al. 1982: 22 'PS I love you')

In the following consonance example from Dylan, the STRUT vowel is taken to rhyme with the LOT vowel. This was the most common pair of mismatching vowels in the rhymes of both Dylan and the Beatles (for whom, note, they would be phonetically rather different).

> Make your money while you can, before you have to stop,
> For when you pull that dead man's hand, your gamblin' days are up.
> (Dylan 1972: 22–3 'Rambling, gambling Willie')

6.7 Ignored consonant

In the final category used here, there is an excrescent consonant without which the rhymes would be much better. In the first example below it is the final /n/, in the second it is the extra /l/ in *told* as opposed to *road*, and in the third example, whatever else is going on, there is an extra /n/ in *picnic* which does not seem to fit.

> Walk around with nowhere to go,
> Somebody could freeze right to the bone
> (Dylan 1972: 13 'Talking New York')

> I'm a-thinkin' and a-wonderin' all the way down the road
> I once loved a woman, a child I'm told
> (Dylan 1972: 68 'Don't think twice, it's all right')

> Well, I run right down 'n' bought a ticket
> To this Bear Mountain Picnic.
> (Dylan 1972: 19 'Talking Bear Mountain Picnic Massacre Blues')

6.8 Retrospect on categories

Although these categories are extremely diverse, it is noticeable that there are some categories which do not appear. Although there is a category of ignored place of articulation in a coda there is no corresponding category of ignored manner of articulation in a coda which would allow *god* to rhyme with *gone* or *Don* to rhyme with *doll*. There is equally no ignored voicing in the coda, which would allow *leave* to rhyme with *beef* or *fees* to rhyme with *fleece*. This is surprising given that Bauschatz (2003) finds this to be the most common type of imperfect rhyme. These might simply have been classified under the 'similar segment' rubric, but unlike the *line/rhyme*

kind of rhyme are not common enough to draw attention to themselves. The 'similar segment' category will be subdivided in later discussion here.

We might expect, but do not find, a rule of ignored vowel length, which would allow KIT and FLEECE to rhyme, or FOOT (and STRUT) and GOOSE, or LOT and THOUGHT, or TRAP and PALM (except, of course, in varieties where the relevant vowels are phonemically identical anyway). In an area where it seems that much is permitted, it is nevertheless clear that some things are more readily permitted than others.

6.9 Results

The numbers of imperfect rhymes in the various categories for the three poets are presented in Table 2. Because individual rhyming pairs may illustrate more than one category of imperfect rhyme, direct matching with Table 1 is not possible even though it is a reanalysis of the same data.

Table 2: Types of imperfect rhyme in the three sets of lyrics

	COWARD		BEATLES		DYLAN	
CATEGORY	NON-NASAL	NASAL	NON-NASAL	NASAL	NON-NASAL	NASAL
1. eye-rhyme		1			1	
2. stress-shifted	3	1	8	3	12	5
3. unstressed					3	4
4. ignored appendix	1		8	22	24	47
5. ignored coda place				12		33
6. similar segment			5	3	28	10
7. ignored consonant					6	

First, it can be seen from Table 2 that the imperfect rhymes used by Coward are not of the same general category as those used by the Beatles and Dylan (which are much more similar). Coward uses far fewer categories of imperfect rhyme, as well as using those categories far less often. It also seems that the Lehrer Effect is real; both the Beatles and Dylan allow rhymes such as *line* and *rhyme* specifically where there is a nasal coda.

One of the striking things about Table 2 is the lack of non-nasals in category 5. To some extent this shows poor analysis. Some examples which might have been listed there are instead listed under 6 (see the example in

6.6 above). Nevertheless, there is a clear distinction. With nasal codas there is apparently fairly free variation between /m, n, ŋ/ (particularly, of course, the first two, given the relative lexical frequency of /ŋ/). There are only two examples of final /k/ rhyming with final /p/, and only one of /k/ rhyming with /t/. There are also two examples of /s/ rhyming with /f/ (*else* and *self* in both instances), one of /f/ rhyming with /θ/, and two of /v/ rhyming with /ð/. It would be possible to set up a category of ignored coda manner, but it would have only two examples in it: one of /d/ rhyming with /n/, one of /z/ rhyming with /d/ (others like this are hidden in category 4, since different codas could be ignored in the two words of the rhyme). There are no examples in my data of words being treated as rhyming and differing only in the voicing of the final consonants. There are occasional instances with final consonants which are phonetically further apart being treated as though they rhyme: one example of /d/ and /v/, one of /v/ and /s/, one of /f/ and /t/.

This could be treated in various ways. One would be to say that /m/ and /n/ count, for rhyme purposes, as identical, and that /z/ and /d/ may also do so, especially in appendices. The rhyming of other consonants is irregular. But this seems to ignore the relevance of nasality, demonstrated by the high number of nasal rhymes where this phenomenon appears. Lehrer, it seems, picked out a particularly important category of rhyme to illustrate in his satire.

If we look at vowels which count as similar enough to rhyme (or be treated as rhyming) we find the rhyming of STRUT with LOT particularly common, especially in nasal contexts. Two of the Beatles' three examples are of this type, and eight of Dylan's 27 (including two examples of the *up/stop* rhyme illustrated earlier). Only Dylan provides sufficient examples for any further analysis. The next commonest pair for Dylan is DRESS and KIT, with half that number of occurrences. This ignores instances with a following nasal, which are assumed to rhyme for Dylan. Generally monophthongs are taken as similar enough to rhyme with vowels in adjacent vowel space. Diphthongs are harder to characterise, perhaps because of the relatively small amount of data to hand.

6.10 Discussion

Some of the categories of imperfect rhyme seem from this data to be peculiar to Dylan. Such a conclusion is not warranted by this investigation. It could be that Dylan exploits, more fully than the other writers investigated, genuine folk traditions or in any case traditions of versification different from those being exploited by Coward and Hammerstein. The Beatles, through their exposure

to some of the same traditions, but to a lesser degree, show some acceptance of the same trends, though not nearly to the same extent. Similarly, it cannot be stated that there is a diachronic shift in the rhyme techniques of popular music, even though we find Coward using far fewer imperfect rhymes than either the Beatles or Dylan. It is clear from the evidence to hand that rhyme techniques are to some extent personal preferences of individual writers. For example, while 4.7% of Hammerstein's rhymes are feminine rhymes, 29.6% of Coward's are feminine. Dylan has a slightly greater percentage than Hammerstein, while the Beatles' percentage is lower at 3.4%. This is no doubt related, to some extent at least, with the high use of feminine rhyme in comic verse in English (consider, for example, W.S. Gilbert's and Tom Lehrer's use of triple rhymes illustrated earlier, though according to Stewart 1930: 170 even double rhymes are 'fit for comic or burlesque purposes'). While the present study indicates that it might be worthwhile looking at a longitudinal study of rhyme patterns in the twentieth century, it would be premature to assign differences to anything other than personal writing style at this stage. The implication of this is that we should not expect to be able to characterise a permissible rhyme in English, but only, at best, a permissible rhyme in the poetry of a particular poet.

However, there is also the possibility that Dylan and Coward are not so much two individuals using rhyme in idiosyncratic ways, but two exponents of different rhyme traditions. Thus an alternative interpretation of the facts illustrated in Table 2 is that there are several rhyme traditions operating in English poetry.

Yet another interpretation is that the Beatles and Dylan are simply incompetent poets (at least when it comes to dealing with rhyme — they are clearly competent in other ways), and that their failure to use perfect rhyme is an illustration of this incompetence. This is an interesting suggestion, because there are so many ways of countering it. One possible counter would be that an incompetent user of rhyme might be expected to stick too rigorously to rhymes as defined by the rather narrow definition given earlier. The *moon/spoon/June* school of rhyming, it might be suggested, is incompetent in just such a way, and this is shown by overly good rhymes rather than by failure of rhymes. A second possible counter to this suggestion is that it is incompatible with what literary scholars feel about English rhyme in general, namely that the good user of rhyme makes words in rhyming positions unpredictable by the subtle use of variation in rhyme (so by breaches of the definition given above, if we wish to be strict).[5] That being the case, we cannot show incompetence by

showing the use of imperfect rhyme, since imperfect rhyme could define the competent user. Instead, we would need to consider questions of degree of variation and type of variation if we wished to argue for incompetence.

7. Study 3

In order to try to answer some of these questions, and to gain some insights into the ways in which the different patterns originated, the database was extended to some different verse types from earlier periods. Again for practical reasons, the writers chosen were Wordsworth (Peacock 1930), Tennyson (Tennyson n.d.), McGonagall (McGonagall 1890) a collection of early blues songs (Oliver 1982) and folk songs (Karpeles 1974). Wordsworth and Tennyson were chosen randomly as exemplars of precursors in a British rhyming tradition. McGonagall was chosen because he is probably Britain's best-known bad poet. He is certainly the kind of poet who would not object to putting a 'coupla extra syllables into a line' if it suited him. If we are seeing the result of lack of ability in manipulating an established medium, we might expect McGonagall to show similar traits. The Blues songs were chosen to illustrate a different tradition, one based on a variety of English whose forms (perhaps in rhyme itself, but certainly in phonological patterning, syllable structure, etc.) must have been affected by substrate influences in the nineteenth century. Folk songs were added to allow comparisons with a native vernacular tradition. The first fifty imperfect rhymes were chosen from each selection according to the same principles as before. The results are presented in Tables 3 and 4. Where

Table 3: Imperfect rhyme from earlier writers

	WORDSWORTH		TENNYSON		MCGONAGALL	
CATEGORY	NON-NASAL	NASAL	NON-NASAL	NASAL	NON-NASAL	NASAL
1. eye-rhyme[6]	11	4	12	4	4	
2. stress-shifted	23	6	16[7]	1	17	6
3. unstressed	3		6		3	
4. ignored appendix						
5. ignored coda place						14
6. similar segment	6		12		6	
7. ignored consonant					1	

Table 4: Imperfect rhyme from other genres

	BLUES		FOLK	
CATEGORY	NON-NASAL	NASAL	NON-NASAL	NASAL
1. eye-rhyme			2	
2. stress-shifted	3	1	6	2
3. unstressed			2	2
4. ignored appendix	9	20	4	3
5. ignored coda place		14	8	10
6. similar segment	8		8	10
7. ignored consonant	1			

the totals in Tables 3 and 4 for any writer/genre add up to more than fifty, it is because some rhymes fitted more than one category.

7.1 Results

All the poets in Table 3 exploit the same categories of imperfect rhyme, and these are the categories which were also exploited by Coward. Thus we can view Coward as an exponent of the same tradition as these high-culture poets. However, McGonagall differs from the others in a very interesting way: he exploits the Lehrer Effect where the others do not. Where does McGonagall get this usage from?

Table 4 provides a likely answer: he gets it from the folk traditions where the Lehrer Effect is also exploited. While Blues and folk music do not adhere to quite the same traditions of rhyme (no doubt as a result of the distinct influences on their phonological processes), nevertheless they share the use of the Lehrer Effect and the preference for imperfect rhymes where there is a nasal coda. If there is any evidence of incompetence in McGonagall's rhymes, it is simply that he uses a type of imperfect rhyme not generally used in the tradition in which he believes himself to be writing.

7.2 Discussion

We seem here to have clear evidence for distinct rhyming traditions. On the one had we have the high-culture tradition where the Lehrer Effect is not exploited, and on the other we have various folk traditions (which themselves illustrate different patterns of imperfect rhyme) which have in common the exploitation of the Lehrer Effect for good rhyme. What makes Dylan stand out

in twentieth-century song-writing is that he appears to be influenced by both traditions, and brings the folk traditions more into the cultural mainstream than they have previously been. The Beatles also show the effect of similar traditions, but not to the same extent, since the influence on them, particularly the influence of the Blues, is less direct.

8. Study 4

This final study is a repeat of the earlier studies but with different materials and slightly different categories, based on the discussion above. The data comes from the published lyrics of two songwriters, Joni Mitchell (1976, 1983, 1988) and Paul McCartney (sometimes with Linda) (n.d.a, n.d.b). Rhymes are counted as before, based on the printed versions of the songs, and songs repeated in more than one publication are ignored, as are repeated sections, refrains, etc. The same distinction between nasal and non-nasal rhymes is made as previously, but rather more categories of imperfect rhyme are included to get a more accurate picture of the use of consonance and assonance. Unfortunately, no examples of consonance were discovered, though the categories are mentioned in Table 5 for completeness.

It should be noted that some rhymes are counted twice in Table 5, where they fit into more than one category. Twenty rhymes of Mitchell's and two of McCartney's have been counted twice in this way. We see here, as previously, that individual writers differ as to their use of rhyme. In category 7 we also see the Lehrer Effect, though Mitchell is more likely to ignore place of articulation in non-nasals than any of the other writers that have been considered. We also see that stress-shifted rhyme occurs preferably in non-nasal contexts. Surprisingly few of these rhymes involve the *happy* vowel.

Of particular interest here is the new information provided in categories 5 and 6. Where the appendix in a rhyming syllable comprises an inflectional morpheme (e.g. *stairs/care*), the two words are much more likely to rhyme in non-nasal codas than in nasal ones; where the coda occurs as part of a root morpheme (e.g. *down/found*) it is far more likely to be part of a nasal coda. We can reanalyse this a different way, however, since Pierrehumbert (1994: 172) gives an independent definition of when something should be counted as an appendix. According to her definition, none of the examples given here would count as having appendices, they would all count as being part of the coda. To be an appendix, a coronal obstruent must follow an obstruent or /l/.

Table 5: Rhyme patterns for Mitchell and McCartney

CATEGORY	MITCHELL NON-NASAL		MITCHELL NASAL		MCCARTNEY NON-NASAL		MCCARTNEY NASAL	
		%		%		%		%
1. Perfect rhyme	170	39	62	14	119	57.5	42	20
2. Eye rhyme	0		0		0		0	
3. Stress-shifted rhyme	25	6	13	3	9	4	3	1.5
4. Unstressed rhyme	6	1.5	3	0.5	2	1	0	
5. Ignored appendix, inflectional	43	10	17	4	5	2.5	4	2
6. Ignored appendix within a morpheme	9	2	24	5.5	2	1	10	5
7 Ignored coda place of articulation	18	4	31	7	1	0.5	10	5
8. Ignored coda voicing	4	1	1	0	0		0	
9. Ignored coda manner	1	0	0		0		0	
10. Coda mismatch on more than one parameter	2	0.5	1	0	0		0	
11. Different vowel height	0		0		0		0	
12. Different vowel backness	0		0		0		0	
13. Different vowel length	0		0		0		0	
14. Vowel mismatch on more than one parameter	0		0		0		0	
15. Extra ignored consonant	4	1	2	0.5	0		0	
TOTAL	282	64.5	154	35.5	138	66.5	69	33.5

Following this much more restrictive definition of an appendix, we get very different results. In Table 6 we see the raw numbers adjusted from Table 5 in the light of Pierrehumbert's definition. It is clear that the vast majority of nasal appendices reported in category 6 of Table 5 are precisely of the *down/around* type with a coronal consonant following a nasal consonant. If these

are not appendices (following Pierrehumbert's definition) we need some other generalisation to explain why they are so common. The answer cannot be simply that inflection is not viewed as relevant. Mitchell, who in the data analysed has 38 instances where inflections are ignored for a rhyme, also has 37 perfect rhymes involving inflections. The major point is that /nd/ and nasal + /z/ clusters can be taken to rhyme with unclustered /n/ or unclustered nasal respectively. Nasality is clearly important in this process, but why that should be the case remains unexplained.

Table 6: The effect of a restrictive definition of appendix

	MITCHELL		MCCARTNEY	
CATEGORY	NON-NASAL	NASAL	NON-NASAL	NASAL
5. Ignored appendix, inflectional	17	7	2	0
6. Ignored appendix within a morpheme	4	0	2	0

9. Back to phonology

9.1 Appendices

It might seem that having words rhyme even though they have different coronal appendices, or where one lacks an appendix which the other shows, would be direct evidence for the difference between appendices and consonants belonging to the coda proper. If appendices are extra-metrical, then having them literally not count for some real-language use seems like an ideal piece of supporting evidence.

Unfortunately, the evidence is not strong enough to support any such conclusion. With the very narrow definition of appendices provided by Pierrehumbert, it is not clear that appendices are being treated in any special way in the rhyming process. With the wider definition of appendices first used, there is some evidence that appendices can be widely ignored, but with important differences between the patterns found in nasal and in non-nasal environments. Given the finding from variationist studies that final /d/s are more likely to be maintained when they mark past tenses than when they do not, it is interesting to note that none of the examples from Mitchell or McCartney involved ignoring a past tense or past participle /d/ (e.g. *down/browned*). There may thus be linguistic constraints at work here whose influence is hard to

determine, and these constraints may link with the semantico-morphological structure of the items concerned.

9.2 Nasality

It might well be possible to work out a feature-geometry under which place of articulation is irrelevant where codas are nasal along the lines of the one provided by Bauschatz (2003), but such a move would not be explanatory. Ideally we would like to know why place of articulation in codas is irrelevant under the Lehrer Effect, but appears still to be relevant (at least for most of the writers considered) where nasals are not involved.

It has been suggested to me that this could be a result of the phonology of English. The place of articulation of nasals is irrelevant when there is a post-nasal obstruent in the coda, since under such circumstances the place of articulation of the nasal is always derivable from the place of articulation of the following obstruent: consider instances such as *cant, camp, hank, dance, lymph, lunch*. Perhaps the irrelevancy of place in such environments extends to contexts where there is no following obstruent, so that *line* and *rhyme* can rhyme. While this has the benefit of working from the known to the unknown, it does not appear to me to be totally convincing. It is not convincing because place of articulation is still relevant for the clusters at the ends of *cant, camp, hank, dance, lymph, lunch*, etc., it is not simply that place fails to be a useful node at all.

We also have to look at the use of imperfect rhymes which in general seems to be higher in environments in which there is a nasal in the coda. Indeed, Dylan's verse seems to have more nasal codas than we would expect on the basis of the number of nasal codas in the vocabulary in general. Thus he may be exploiting something which is inherent in nasality in order to use fewer perfect rhymes. Precisely how this works remains a mystery at present.

9.3 Closeness of rhyme

It does seem, however, that there may be some evidence here for what we might term 'closeness' of rhyme: e.g. the notion that two consonants that differ only in place of articulation are more like each other than consonants which differ only in manner of articulation. This is easily shown in a feature geometry, and indeed a feature geometry such as that given in Broe (1992) would capture this relationship. However, we have seen that while place of articulation seems less important than voicing in coda position, in onset position consonants are said to be too similar if they differ only in voicing, but not if they differ only

in place of articulation. Thus the study of rhyming behaviour may lead us to conflicting demands upon a feature geometry. This is made particularly clear if we compare the results given by Bauschatz (2003) with those reported here, since the two sets of findings would lead to conflicting conclusions about the structure of phonological segments.

The results on which vowels are close enough to rhyme was summarised above in section 6.9. Zwicky (1976) suggests that vowels can be used in imperfect rhymes if they differ by just one distinctive feature, but this fails to account for the preferences noted here.

If we assume a fairly traditional vowel-system for (British) English as illustrated in Table 7, divided up according to the features shown below (following Broe 1992), it is not clear that we can define any notion of 'adjacent in vowel space'. Neither is it clear that we can give any particular reason why STRUT and LOT should be the most likely vowels to be taken as close enough to rhyme. This might be different in American English (where the LOT vowel is not rounded and not "tense"), but the same pattern is found for the Beatles as for Dylan. This is despite the fact that for the Beatles STRUT and FOOT may be phonemically identical. The data from rhyme may have something to contribute to the phonology of vowels in the longer term, but a more precise evaluation of what rhyme can show will be needed.

Table 7: A feature system for the vowels of RP

	CORONAL		BACK	
High	**iː**, ɪ		ʊ, **uː**	
	e	**ɜː**	**ɔː**	round
Low			ɒ	
	æ	ʌ	**ɑː**	

bold face indicates ATR

Note: Since the LOT vowel is not rounded in US English, and the PALM vowel is not tense, the STRUT vowel cannot be distinguished from the LOT/PALM vowel as shown in this table for British English, and accordingly, STRUT has to be seen as the non-ATR congener of the NURSE vowel. This is often reflected in the use of the [ə] symbol to transcribe this vowel in US transcriptions.

10. Conclusions

The major conclusions of this paper are

- Perfect rhyme can be defined as here, but this is too restrictive to illustrate actual rhyming use in English verse.
- There is not just one rhyming tradition in English verse, there are several.
- The differences in rhyming traditions are shown (at least partly) in the use of imperfect rhymes.
- There is difference in rhyming practice between different individuals as well as between different rhymed genres.
- The Lehrer Effect is real, and appears to be a phenomenon which marks popular rhyme genres in English.

As a result of the research in this paper it becomes clear that we need further research to determine

- A taxonomy of imperfect rhymes. The classification used in Table 5 divides the traditional literary categories of consonance and assonance into categories that may provide more useful linguistic insights. Even this classification may require further development, though.
- Precisely what vowels are deemed to be close enough to what others to count as rhyming, and whether this can shed any light on feature systems.
- Whether dialect differences affect the closeness of vowels for rhyming purposes.
- The constituent structure of feet.
- Whether there is any hierarchy of acceptability of imperfect rhymes, or whether this is purely a matter of individual variation.

We have not made any progress in defining rhyme more closely than was done in section 4, but we have traversed a number of the problems which must be considered if that goal is to be met.

In the larger scheme of things, we know that the use of rhyme is not a universal in literary production, and it would be nice to see whether there are phonological bases which allow or fail to allow rhyme as a relevant literary form, and whether there is any typology of rhyme that can be established.

Notes

1 I here use the lexical sets established by Wells (1982). The MOUTH vowel is the vowel which occurs in the word *mouth* and other similar words. This notation, which is not phonemic (since the THOUGHT vowel may be phonemically identical with the FORCE vowel in some varieties of English but not in others), is of great value when talking about individual vowels, since it is auditorily less ambiguous than mentioning the sound in isolation. In this context it also avoids, to some extent, the need for transcriptions.

2 Sonority is loosely defined as perceived loudness in relation to constant output effort. Vowels are generally accepted as being the most sonorous segments, with fricatives rather more sonorous than corresponding plosives. For the most part, English syllables are most sonorous at their peaks, and there is a monotonic decline in sonority towards both edges of the syllable. These words provide rare counterexamples.

3 The terminology of MASCULINE and FEMININE is obscure in English, but makes good sense in French (the immediate source of the English usage, though it stems originally from Provençal). French does not have word-stress as such, but stresses the last non-schwa syllable in the phonological phrase. Given that we do not find French words with two schwa-containing syllables at the end, this means there are two possible ways in which words can rhyme in French: they can rhyme by having identical rhyme-constituents in the final stressed syllable of the line (corresponding to the end of the phonological phrase), or they can have an identical rhyme-constituent in final stressed syllable of the line and an identical unstressed syllable whose vowel is schwa. Since this last pattern occurs most strikingly in feminine nouns and adjectives, where the final schwa (derived from a Latin final /a/) is the feminine gender marker, this is naturally termed a 'feminine rhyme'. The lack of the feminine ending is correspondingly 'masculine'.

4 Although I believe that care must be taken with the notion of structural analogy (see Bauer 1994), the syntactic equivalent to a stressed syllable and following unstressed syllables in the same foot would appear to be a main clause with following subordinate clauses. In such instances, the verb and the following subordinate clauses belong in one constituent, while the subject is in a separate one. So given a sentences like *Kim saw the fire-engine when it had its lights flashing before the ambulance overtook it*, there is a point at which *Kim* is in a separate constituent from the rest of the sentence. The parallel with phonology

would be that the initial /p/ in *paradox* belongs to one constituent, while /ærədɒks/ is the next. This argument is apparently never made. This is not relevant to any conclusions that are drawn here, but is a matter of proper representation of structures.

5 It is my feeling that the unpredictability in related rhyming cultures such as that used in Danish or in German is to be found in the use of the lexically unexpected rather than in the use of the phonologically unexpected. Bauschatz (2003: fn 27) implies that my impression is false; nevertheless we have the possibility, at least, of rhyming traditions differing in the extent to which they accept imperfect rhymes at all, while still finding an element of unpredictability in verse to be a positive thing.

6 It has been suggested to me that I may have exaggerated the number of eye-rhymes for these poets by failing to recognise that certain phonological changes occurred after their period. That may be so, although the number of eye-rhymes collected from the older folk songs is far smaller. However, if there are errors of that type here, they do not appear to be particularly important: they do not create imperfect rhymes in a larger number of categories.

7 For Tennyson, the *happy* vowel rhymes with PRICE rather than with FLEECE. This must be a deliberate anachronism/archaism (perhaps sometimes a matter of eye-rhyme), since even Wordsworth rhymes *happy* with FLEECE.

> And so it was—half-sly, half-shy,
> You would, and would not, little one!
> Although I pleaded tenderly,
> And you and I were all alone.
> (Tennyson n.d.: 67, 'The miller's daughter')

> But there may come another day to me—
> Solitude, pain of heart, distress and poverty.
> (Peacock 1930: 595, Wordsworth's 'Resolution and independence)

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