

STRICT AND LOOSE RHYMES IN TRADITIONAL CORNISH VERSE

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ABSTRACT

Hard rhymes in the traditional Cornish texts may be divided into strict and loose rhymes. If the poets strove to choose strict rhymes, and used loose ones only when unable to find a strict rhyme, then there would be significantly fewer loose rhymes in their works than if they indifferently mixed strict and loose rhymes. Analysis shows that this is the case, except for CW. The result is used to show that before CW, the reflexes of Old Cornish /-s/ and /-d/ had not fallen together.

1) INTRODUCTION

In 1978 I composed a poem in Cornish, in the Unified spelling then in common use, in which I rhymed *man* ‘nothing’ with *tan* ‘fire’. My teacher, Wella Brown, criticized this as a poor rhyme, because, as he reminded me, *man* is pronounced [ˈmann] and *tan* is pronounced [ˈta:n]. One result of this was that in due course I devised a better orthography, *Kernewek Kemmyn (KK)*, in which the two words are spelled *mann* and *tan* respectively. In my own defence, however, I pointed out that in *Bewnans Meryasek* line 3712, *tan* is rhymed with *sa ban (sa’bann)* ‘arise’ (see George 2007). Is this exceptional? How common are rhymes of this kind in the texts?

1.1 Definitions

A **hard** rhyme is a rhyme between two stressed final syllables in an utterance. In the example above, *mann* and *tan* are both stressed monosyllables placed finally in a line of verse, so the rhyme between them is a hard rhyme. It is not a perfect rhyme, however, because the two words have different pronunciations: it is a **loose** rhyme. A rhyme between *sa’bann* and *mann* would also be a hard rhyme, but because they have the same final sound sequence [ˈann], it would constitute a **strict** rhyme.

In contrast, a **soft** rhyme is a rhyme between a stressed final syllable and an unstressed final syllable, e.g. *tan* and *byghan* ‘small’. Both hard rhymes and soft rhymes are very common in traditional Cornish verse. Much of that verse is based on orthographic principles, although underlain by phonetics. The definition of rhyme was a wide one: two words were allowed to rhyme if their final syllables were spelled the same way. All words whose final syllables have the same spelling form a rhyming ensemble (Dunbar and George 1997: 94). Typically a rhyming ensemble includes both hard and soft rhymes, and the hard rhymes comprise both strict and loose varieties. The symbol \mathcal{R} is used to denote a rhyming ensemble; e.g. \mathcal{R}_{an} stands for the ensemble containing all rhyming words ending in *-an* in the textual spelling.

It needs to be pointed out that this paper is concerned only with rhymes between single final syllables. There are also examples of double and even triple rhymes in the traditional Cornish corpus, especially in *Bewnans Ke*.

1.2 The rhyming ensemble *Ram*

Before studying the ensemble *Ran* in more detail, we consider a simpler case, that of *Ram*, in order to illustrate the methodology.

1.2.1 *Ram* in *Passio Christi*

Consider all the rhymes in *Passio Christi* which end in <-am>. The rhyming pairs are listed in Table 1:

First rhyming word		Second rhyming word				Type			
Line no..	Textual spelling	English meaning	<i>Kernewek Kemmyn</i>	Sound	Textual spelling	English meaning	<i>Kernewek Kemmyn</i>	Sound	Type
1125	<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	<i>cam</i>	rogue	<i>kamm</i>	['amm]	strict
1197	<i>cam</i>	step	<i>kamm</i>	['amm]	<i>bram</i>	fart	<i>bramm</i>	['amm]	strict
1461	<i>bram</i>	fart	<i>bramm</i>	['amm]	<i>lam</i>	leap	<i>lamm</i>	['amm]	strict
2247	<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	<i>cam</i>	wrong	<i>kamm</i>	['amm]	strict
2734	<i>whym wham</i>	slapdash	<i>hwymm-hwamm</i>	['amm]	<i>cam</i>	rogue	<i>kamm</i>	['amm]	strict
2737	<i>blam</i>	blame	<i>blam</i>	['a:m]	<i>scham</i>	shame	<i>sham</i>	['a:m]	strict
2779	<i>bram</i>	fart	<i>bramm</i>	['amm]	<i>vamm</i>	mother	<i>mamm</i>	['amm]	strict
					<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	strict
					<i>cam</i>	rogue	<i>kamm</i>	['amm]	strict
2780	<i>vamm</i>	mother	<i>mamm</i>	['amm]	<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	strict
					<i>cam</i>	rogue	<i>kamm</i>	['amm]	strict
2782	<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	<i>cam</i>	rogue	<i>kamm</i>	['amm]	strict
2913	<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	<i>cam</i>	rogue	<i>kamm</i>	['amm]	strict
2928	<i>vamm</i>	mother	<i>mamm</i>	['amm]	<i>nam</i>	spot	<i>namm</i>	['amm]	strict
3034	<i>cam</i>	wrong	<i>kamm</i>	['amm]	<i>adam</i>	Adam	<i>Adam</i>	[am]	soft
3075	<i>drok lam</i>	accident	<i>droglamm</i>	['amm]	<i>bram</i>	fart	<i>bramm</i>	['amm]	strict

Note the following in Table 1:

- In order to save space, the rhyming pairs are listed in only one direction, but in the tables below, they are counted in both directions.
- *Kernewek Kemmyn* (George 2020) is used as a standard orthography, distinguished by the use of bold italic.
- Words which are mutated in the text are given in the *Kernewek Kemmyn* columns without mutation.

Nearly all of the rhymes in Table 1 are strict rhymes between monosyllables with ['amm]. Although ***droglamm*** is now written as one word, in the texts it appeared as two words (*drok lam*), implying that *lam* was stressed¹. The phrase *whym wham* has [-'am] in English, but it is supposed that English [-'am] was identified with Cornish [-'amm] by Cornish speakers.

The other rhymes are *cam* – *adam*, which being soft is beyond the scope of this paper, and *blam* ≡ *scham*, a strict rhyme in [-'a:m]. Because Proto-Brythonic /-am/ had become /-av/, all rhymes in [-'a:m] are of loan-words from English. There are no loose rhymes in Table 1.

¹ Compare, however, Breton *drouklamm*, which is stressed on the first syllable.

1.2.2 *Ram* in all of the texts

Table 2 gives the numbers of rhyming pairs with various characteristics. The pairs are counted in both directions, e.g. the rhyming pair *bram* \equiv *lam* counts as 2.

			Text ² \rightarrow								
			PA	PC	RD	OM	BM	BK	CW	LC	Total
Rhyme	Sounds	<i>KK</i>									
strict	['amm] \equiv ['amm]	<i>-amm</i> \equiv <i>-amm</i>	0	28	0	16	38	24	10	0	116
strict	['a:m] \equiv ['a:m]	<i>-am</i> \equiv <i>-am</i>	0	2	2	0	10	10	6	0	30
loose	['amm] – ['a:m]	<i>-amm - -am</i>	0	0	0	0	0	0	12	0	12

Of the total of 158 rhymes, 146 (92%) are strict. Rhymes in ['a:m] and rhymes in ['a:m] were kept strictly apart. If the monks of Glasney College had rules for the versification of Cornish, then “do not rhyme ['a:m] and ['amm]” appears to have been one. The exception is CW, whose unusual form of stanzas suggests that it was composed after the demise of Glasney; this idea is supported by the loose rhymes in Table 2.

1.3 The rhyming ensemble *Ran*

Ram (Table 2) is far more clear-cut than other rhyming ensembles. We return to *Ran* and carry out a similar analysis:

			Text ² \rightarrow								
			PA	PC	RD	OM	BM	BK	CW	LC	Total
Rhyme	Sounds	<i>Kernewek Kemmyn</i>									
strict	['ann] \equiv ['ann]	<i>-ann</i> \equiv <i>-ann</i>	10	4	12	10	20	10	2	0	68
strict	['a:n] \equiv ['a:n]	<i>-an</i> \equiv <i>-an</i>	0	4	0	4	4	2	2	2	18
loose	['ann] – ['a:n]	<i>-ann - -an</i>	0	2	0	16	4	0	4	0	26

As with *Ram*, the strict rhymes with the geminate consonant are the commonest, but here there are significantly more loose rhymes. In OM, there are more loose rhymes than strict ones. There are also more loose rhymes than strict rhymes with [-'a:n]. Were the poets favouring the strict rhymes, as with *Ram*, or were they treating the available rhyming words with [-'a:n] and [-'ann] as one large mixed pool from which to select rhymes? In order to answer this question, we take the latter assumption, and see how many loose rhymes might result.

This is similar to the well-known problem of choosing two balls from a bag containing N_1 red balls and N_2 green balls, with replacement.

The chance of choosing a red ball is $N_1 / (N_1 + N_2)$, and

the chance of choosing a green ball is $N_2 / (N_1 + N_2)$.

The chance of choosing a red ball and then a green ball is the product of these two probabilities, viz. $(N_1 \times N_2) / (N_1 + N_2)^2$.

Likewise the chance of choosing a green ball and then a red ball is $(N_2 \times N_1) / (N_1 + N_2)^2$.

Thus the chance of choosing two different coloured balls (equivalent to the chance of choosing a loose rhyme) is $(2 \times N_1 \times N_2) / (N_1 + N_2)^2$.

² PA = *Pascon agan Arluth*, PC = *Passio Christi*, RD = *Resurrectio Domini*, OM = *Origo Mundi*, BM = *Bewnans Meryasek*, BK = *Bewnans Ke*, CW = *Creacon of the World*, LC = Late Cornish.

This formula is applied to the totals in Table 2.

$$\begin{aligned} N_1 &= \text{number of rhyming words with [-'ann]} \\ &= \text{no. of strict rhymes ['ann]} \equiv ['ann] + \frac{1}{2} \text{ no. of loose rhymes ['a:n]} - ['ann] \\ &= 68 + (\frac{1}{2} \times 26) \\ &= 81 \end{aligned}$$

$$\begin{aligned} N_2 &= \text{number of rhyming words with [-'a:n]} \\ &= \text{no. of strict rhymes ['a:n]} \equiv ['a:n] + \frac{1}{2} \text{ no. of loose rhymes ['a:n]} - ['ann] \\ &= 18 + (\frac{1}{2} \times 26) \\ &= 31 \end{aligned}$$

So if all the potential rhyming words are mixed up in one pool, the chance of selecting a loose rhyme is $2 \times 31 \times 81 / (31 + 81)^2$

$$\begin{aligned} &= 5022 / 12544 \\ &= 0.400 \end{aligned}$$

One would then expect the total number of loose rhymes to be $0.400 \times (31 + 81) \approx 45$. The actual number is only 26, which suggests that the assumption of one large pool is false. The implication is that **poets favoured strict rhymes**, trying to use them wherever possible, but on occasion having to resort to loose rhymes.

2) ANALYSES OF RHYMING ENSEMBLES

The analyses of the two rhyming ensembles performed hitherto suggest that strict rhymes were used by poets in preference to loose ones, but to confirm this, we need to examine many more ensembles. There are about 160 different rhyming ensembles in Cornish, but only a few of them have enough attested cases to produce a statistically significant result. A rule of thumb says that one needs at least 30 cases, and because the rhyming pairs are counted in both directions, the ensembles analysed here have a total ($N_1 + N_2$) of at least 60.

The results are presented in the form of tables with the same format. The actual numbers of loose rhymes are highlighted in green, and the expected number if the rhyming pool were fully mixed are highlighted in red. Ensembles *Ram* and *Ran* are repeated for completeness. The rhyming words used are listed; note that there may be other attested rhyming words, e.g. those making soft rhymes but not hard.

2.1 Results for ensemble *Ram*

Cornish rhyming words in *-amm*:

bramm ‘fart’, *droglamm* ‘accident’, *kamm* ‘wrong’, *lamm* ‘leap’, *mamm* ‘mother’, *namm* ‘spot’, *tamm* ‘piece’.

Words whose final sound-sequence was identified with Cornish [-'amm]:

from English: *hwymm-hwamm* ‘whym-wham’; from Latin: *jamm* ‘never’.

Loan-words from English in *-am*:

blam ‘blame’, *gam* ‘game’, *nam* ‘name’, *sham* ‘shame’, *tam* ‘tame’.

Table 4 Numbers of hard rhyming pairs in ensemble <i>Ram</i>											
Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	['amm] ≡ ['amm]	-amm ≡ -amm	0	28	0	16	38	24	10	0	116
strict	['a:m] ≡ ['a:m]	-am ≡ -am	0	2	2	0	10	10	6	0	30
loose	['amm] – ['a:m]	-amm - -am	0	0	0	0	0	0	12	0	12
N_1 = number of rhyming words with -amm			0	28	0	16	38	24	16	0	122
N_2 = number of rhyming words with -am			0	2	2	0	10	10	12	0	36
$N_1 + N_2$ = total number of rhyming pairs			0	30	2	16	48	34	28	0	158
Expected no. of loose rhymes if fully mixed			0	11	1	6	17	12	10	0	56

2.2 Results for ensemble *Ran*

Cornish rhyming words in -ann:

a-vann ‘above’, *mann* ‘nought’, *gwann* ‘weak’, *pann* ‘cloth’, *rann* ‘part’, *sa’ bann* ‘arise’, *splann* ‘brilliant’, *tann* ‘take’, *war-vann* ‘upwards’, *yn-bann* ‘upwards’.

Cornish rhyming words in -an:

bran ‘raven’, *eghan* ‘alas’, *glan* ‘clean’, *gwan* ‘wool’, *kan* ‘song’, *tan* ‘fire’

Table 5 Numbers of hard rhyming pairs in ensemble <i>Ran</i>											
Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	['ann] ≡ ['ann]	-ann ≡ -ann	10	4	12	10	20	10	2	0	68
strict	['a:n] ≡ ['a:n]	-an ≡ -an	0	4	0	4	4	2	2	2	18
loose	['ann] – ['a:n]	-ann - -an	0	2	0	16	4	0	4	0	26
N_1 = number of rhyming words with -ann			10	5	12	18	22	10	4	0	81
N_2 = number of rhyming words with -an			0	5	0	12	6	2	4	2	31
$N_1 + N_2$ = total number of rhyming pairs			10	10	12	30	28	12	8	2	112
Expected no. of loose rhymes if fully mixed			4	4	5	12	11	5	3	1	45

2.3 Results for ensemble *Ren*

Cornish rhyming words in -enn:

fenn ‘base?’, *gwenn* ‘anus’, *krows-prenn* ‘cross’, *omdenn* ‘withdraw’, *penn* ‘head’, *prenn* ‘timber’, *tenn* ‘pull’, *yn-tenn* ‘stretched’.

Cornish rhyming words in -en:

ben ‘woman’, *den* ‘man’, *gwren* ‘we do’, *hen* ‘old’, *hepken* ‘only’, *ken* ‘reason’, *kren* ‘shakes’, *len* ‘faithful’, *mab-den* ‘mankind’, *men* ‘stone’, *nahen* ‘any more’, *plen* ‘plain’, *pren* ‘buys’, *toeth-men* ‘high-speed’, *ren* ‘we give’, *sten* ‘tin’, *yn-fen* ‘strongly’.

Table 6 Numbers of hard rhyming pairs in ensemble <i>Ren</i>											
Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	['enn] ≡ ['enn]	-enn ≡ -enn	8	14	14	4	0	16	0	0	56
strict	['e:n] ≡ ['e:n]	-en ≡ -en	28	10	12	14	12	16	0	6	98
loose	['enn] – ['e:n]	-enn - -en	14	4	2	4	6	0	0	0	30
N_1 = number of rhyming words with -enn			15	16	15	6	3	16	0	0	71
N_2 = number of rhyming words with -en			35	12	13	16	15	16	0	6	113
$N_1 + N_2$ = total number of rhyming pairs			50	28	28	22	18	32	0	6	184
Expected no. of loose rhymes if fully mixed			24	13	13	10	9	15	0	3	87

2.4 Results for ensemble *Rel*

Cornish rhyming words in *-ell*:

a-bell ‘distant’, *bell* ‘war’, *fell* ‘cruel’, *gwell* ‘better’, *mell* ‘link’, *nell* ‘strength’, *nep-pell* ‘some way off’, *pell* ‘far’, *tell* ‘holes’.

Words whose final sound-sequence was identified with Cornish [-'eɪl]:

From English: *farwell* ‘farewell’, *hell*; from German: *snell* ‘quick’.

Cornish rhyming words in *-el*:

el ‘angel’, *gwel* ‘sees’, *gwel* ‘field’, *hel* ‘generous’, *hwel* ‘work’, *kel* ‘hidden’, *mel* ‘honey’.

Loan-word from English in *-el*:

lel ‘loyal’.

Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	['eɪl] ≡ ['eɪl]	<i>-ell</i> ≡ <i>-ell</i>	6	12	2	14	10	22	0	4	70
strict	['e:l] ≡ ['e:l]	<i>-el</i> ≡ <i>-el</i>	0	0	4	0	4	8	4	2	22
loose	['eɪl] – ['e:l]	<i>-ell - -el</i>	2	8	0	2	2	0	4	0	18
N_1 = number of rhyming words with <i>-ell</i>			7	16	2	15	11	22	2	4	79
N_2 = number of rhyming words with <i>-el</i>			1	4	4	1	5	8	6	2	31
$N_1 + N_2$ = total number of rhyming pairs			8	20	6	16	16	30	8	6	110
Expected no. of loose rhymes if fully mixed			3	8	2	6	6	12	3	2	45

2.5 Results for ensemble *Rol*

Cornish rhyming words in *-oll*:

foll ‘foolish’, *koll* ‘loss’, *oll* ‘all’, *poll* ‘pool’, *toll* ‘hole’, *troll* ‘wheel of torture’.

Other words in *-oll*:

Apoll’ (name of god, shortened), *boll* ‘translucent’.

Cornish rhyming words in *-ol*:

ol ‘trace’, *skol* ‘school’.

Loan-word from English, thought to have [-ɔ:l]:

rol ‘roll’.

Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	['ɔll] ≡ ['ɔll]	<i>-oll</i> ≡ <i>-oll</i>	24	10	8	18	2	26	0	2	90
strict	['ɔ:l] ≡ ['ɔ:l]	<i>-ol</i> ≡ <i>-ol</i>	0	0	0	0	4	0	0	0	4
loose	['ɔll] – ['ɔ:l]	<i>-oll - -ol</i>	0	2	0	0	2	2	0	0	6
N_1 = number of rhyming words with <i>-oll</i>			24	11	8	2	19	27	0	2	93
N_2 = number of rhyming words with <i>-ol</i>			0	1	0	0	5	1	0	0	7
$N_1 + N_2$ = total number of rhyming pairs			24	12	8	2	24	28	0	2	100
Expected no. of loose rhymes if fully mixed			3	2	1	0	3	4	0	0	13

2.6 Results for ensemble *Ryth*

Cornish rhyming words in *-yth*:

byth ‘ever’, *denvyth* ‘nobody’, *gwryth* ‘deeds’, *pyth* ‘thing’, *syth* ‘upright’, *travyth* ‘nothing’, *vyth* ‘at all’.

Cornish rhyming words in *-ydh*:

a’fydh ‘will have’, *bydh* ‘will be’, *dohajydh* ‘afternoon’, *dydh* ‘day’, *fydh* ‘faith’, *gwydh* ‘trees’, *seuladydh* ‘formerly’

Note: Stressed monosyllables with [-i:θ], such as *skwith* ‘tired’ were frequently loosely rhymed with words with [-i:θ], because there were not enough of them to form many strict rhymes. These belong to the ensemble *Ryth*, because they were spelled <-yth>, but they are excluded from this analysis.

Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	[i:θ] ≡ [i:θ]	<i>-yth</i> ≡ <i>-yth</i>	2	6	2	0	0	0	0	0	10
strict	[i:ð] ≡ [i:ð]	<i>-ydh</i> ≡ <i>-ydh</i>	4	10	14	22	0	8	2	0	60
loose	[i:θ] – [i:ð]	<i>-yth</i> – <i>-ydh</i>	0	4	2	0	0	4	4	0	14
<i>N</i> ₁ = number of rhyming words with <i>-yth</i>			2	8	3	0	0	2	2	0	17
<i>N</i> ₂ = number of rhyming words with <i>-ydh</i>			4	12	15	22	0	10	4	0	67
<i>N</i> ₁ + <i>N</i> ₂ = total number of rhyming pairs			6	20	18	22	0	12	6	0	84
Expected no. of loose rhymes if fully mixed			2	6	6	7	0	4	2	0	27

2.7 Results for ensemble *Reth*

Ensemble *Reth* is complicated because words with *-eth* come from several sources.

2.7.1 Historic /-εθ/ and /-εð/

The obvious ones are those with historic /-εθ/, spelled *-eth*:

diveth ‘shameless’, *eth* ‘went’, *eth* ‘hearth’, *feth* ‘defeats’, *gweeth* ‘worse’, *keth* ‘same’, *kweth* ‘cloth’, *leth* ‘milk’, *meth* ‘shame’, *Penntreth* (surname), *pleth* ‘plait’, *soweth* ‘alas’, *treth* ‘beach’

and those with historic /-εð/, spelled *-edh*:

a-gledh ‘to the left’, *bedh* ‘grave’, *edh* ‘thou goest’, *dredh* ‘thou bringest’, *fredh* ‘ardour’, *gwredh* ‘thou makest’, *kledh* ‘left’, *medh* ‘mead’, *ynwedh* ‘also’.

2.7.2 Lowering of /ɪ/ in historic /-iθ/ and /-ið/

Because historic /ɪ/ was lowered to /ε/ (George 2018), we find in this ensemble words which have historic /-iθ/, spelled *-yth* in *KK* but *-eth* in the texts, and pronounced [-'ε:θ]:

nep-pyth ‘something’, *perfyth* ‘perfect’, *pyth* ‘thing’, *vyth* ‘at all’

and words with historic /-ið/, spelled *-ydh* in *KK*, *-eth* in the texts, and pronounced [-'ε:ð]:

a’fydh ‘will have’, *bydh* ‘will be’, *dydh* ‘day’, *fydh* ‘faith’.

This sound-change /ɪ/ > /ɛ/ confounds the devisers of fixed orthographies for Cornish, because in many words, both <y> and <e> spellings are frequent in the texts, and it is not obvious which to choose. KK tends to choose <y>, reflecting the historical vowel /ɪ/. More generally, we have seen painstakingly produced editions of the plays, first in Unified, then in *Kernewek Kemmyn* and now in SWF, but none of these orthographies expresses the rhymes adequately, because they are fixed.

2.7.3 Unrounding of /œ/ giving /ɛ/

A second sound-change which produced /ɛ/ was the unrounding of historic /œ/. Words containing [-'ɛ:ð] < /-œð/ are usually are spelled with <eu> in *KK*, but when unrounded as here, they may be spelled with <e'>:

dige'dh 'carefree', *he'dh* 'joyful', *ke'dh* 'sorrow'.

2.7.4 Others

- The word *hwath* 'yet' had a variant *wheth* implying raising of /a/ to [-'ɛ:θ].
- The loan-word *fas* 'face' had a variant *fath* which was sometimes similarly raised, to *feth*.
- In PA.225, *anfueth* looks like a curious variant of *anfeus* 'wretchedness'.
- At OM.2370, *gwlas* 'land' is written *wleth*; this seems to have raising of /a/ > /ɛ/, but one would not expect the reflex of Old Cornish /-d/ to appear as <-th>, so this may be just a poor eye-rhyme.

Rhyme	Sounds	KK	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	['ɛ:θ] ≡ ['ɛ:θ]	<i>-eth</i> ≡ <i>-eth</i>	24	6	8	2	4	2	0	6	52
strict	['ɛ:ð] ≡ ['ɛ:ð]	<i>-edh</i> ≡ <i>-edh</i>	34	4	32	12	28	6	6	0	122
loose	['ɛ:θ] – ['ɛ:ð]	<i>-eth</i> – <i>-edh</i>	50	18	6	16	8	14	2	0	114
<i>N</i> ₁ = number of rhyming words with <i>-eth</i>			49	15	11	10	8	9	1	6	109
<i>N</i> ₂ = number of rhyming words with <i>-edh</i>			59	13	35	20	32	13	7	0	179
<i>N</i> ₁ + <i>N</i> ₂ = total number of rhyming pairs			108	28	46	30	40	22	8	6	288
Expected no. of loose rhymes if fully mixed			51	13	22	14	19	10	4	3	135

2.8 Combination of all previous results

The numbers of loose rhymes (actual and expected) in Tables 4 to 10 have been summed and given in Tables 11 and 12.

	PA	PC	RD	OM	BM	BK	CW	LC	Total
Actual number of loose rhymes	66	38	10	38	22	20	26	0	220
Expected no. of loose rhymes if fully mixed	87	58	50	56	65	62	22	9	408
Ratio actual / fully mixed as a percentage	76	66	20	67	34	32	117	0	54

The third line in the table is a measure of how strict the rhymes are in each text. In seven of the eight blocks of text, there are fewer actual loose rhymes than one would expect if the available rhyming words were fully mixed in a single pool. This indicates that **poets gave priority to strict rhymes**, and used loose rhymes when a strict rhyme could not be found.

The exception is CW, which has more loose rhymes than the fully mixed number. The unusual structure of stanzas means that there are more rhyming pairs per 1000 lines than in the other plays, which means that there are relatively more loose rhymes. This also applies to a lesser extent to PA, with its ABABABAB rhyme-scheme; this text has the second highest percentage (actual / fully mixed). The texts with the least number of loose rhymes are BM, BK and RD. See section 4 for further discussion.

If data for all of the texts are combined, the results for each rhyming ensemble may be compared (Table 12). The numbers are somewhat dominated by *Reth*, but in every ensemble the number of actual loose rhymes is less than the number expected, were no account taken of the quality of the rhymes.

Rhyming ensemble $\mathcal{R} \rightarrow$	<i>am</i>	<i>an</i>	<i>en</i>	<i>el</i>	<i>ol</i>	<i>eth</i>	<i>yth</i>	Total
Actual number of loose rhymes	12	26	30	18	6	114	14	220
Expected no. of loose rhymes if fully mixed	56	45	87	45	13	135	27	408
Percentage actual / fully mixed	21	58	34	40	46	84	52	54

3) FURTHER ANALYSES TO EXAMINE A SOUND-CHANGE

We have seen that before CW, it looks as if poets strove to use strict rhymes wherever possible, and were driven to use loose ones only when unable to find a strict rhyme.

The same approach is now used to examine rhyming ensembles with <-s> as the final consonant. Only the native Cornish sources of <-s> are considered: the reflex of Old Cornish /-d/, which suffered assibilation, and that of Old Cornish /-s/.³ In Late Cornish, the reflexes of both were sometimes spelled <-z>, indicating voicing. In Middle Cornish, they were both spelled <-s>, but this was used for both [-s] and [-z]. We cannot tell directly whether a given case was unvoiced or voiced.

It is reasonable to suppose that the reflex of Old Cornish /-d/ in hard rhymes was pronounced [-z] because upon assibilation, the final consonant would keep its voiced character. Did the reflex of Old Cornish /-s/ become voiced at an early stage; e.g. at the same time as the assibilation of /-d/, in the 13th century? Or was it voiced when <-z> began to appear, c.1600?

The results of the analysis in Section 2 suggest that so long as the two reflexes remained different, the authors of the texts would try to use hard rhymes using either [-z] < Old Cornish /-d/ or [-s] < Old Cornish /-s/. They would not mix words from the two sources in a loose rhyme unless forced to do so. We therefore carry out another series of analyses. The tables include rhyming pairs only from the Old Cornish sources. They exclude pairs involving loan-words.

³ Other sibilants, in loan-words, are from Middle English /s/ and /z/, and Old French /ç/ (George 2024).

3.1 Ensemble Ras

Words in *-as* from Old Cornish /-as/:

a-has ‘hateful’, *blas* ‘taste’, *bras* ‘big’, *glas* ‘blue’, *glas* ‘maw’, *gnas* ‘nature’, *gwas*⁴ ‘fellow’, plus *tys-ha-tas* ‘noisily’, which may not be Cornish in origin.

Words in *-as* from Old Cornish /-ad/:

bras ‘trap’, *gas* ‘leave’, *gwlas* ‘country’, *has* ‘seed’, *kas* ‘war’, *las* ‘dram’, *mas*⁵ ‘good’, *pras* ‘meadow’, *ras* ‘grace’, *tas* ‘father’.

Rhyme	Rhymes by origin	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	Old Cornish /-as/ ≡ OldC /-as/	4	24	10	10	0	0	26	0	74
strict	Old Cornish /-ad/ ≡ OldC /-ad/	10	26	36	40	20	118	26	4	280
loose	Old Cornish /-as/ - OldC /-ad/	22	18	8	42	4	0	72	6	172
N_1	= no. of rhyming words from OldC /-as/	15	33	14	31	2	0	62	3	160
N_2	= no. of rhyming words from OldC /-ad/	21	35	40	61	22	118	62	7	366
$N_1 + N_2$	= total number of rhyming pairs	36	68	54	92	24	118	124	10	526
Expected no. of loose rhymes if fully mixed		15	29	23	39	10	50	52	4	222

Here the results from BK are truly remarkable. This play has the largest number of rhyming pairs from Old Cornish /-ad/, none from OldC /-as/, and no loose rhymes at all.

3.2 Ensemble Ros

Words in *-os* from Old Cornish /-os/:

dros ‘brought’, *nos* ‘night’, *plos* ‘dirty’, *ros* ‘gave’, *ros* ‘rose’, *tros* ‘noise’.

Also included here is Late Cornish *bros*, apparently from Middle Cornish *bras* ‘big’.

Words in *-os* from Old Cornish /-od/:

bos ‘to be’, *dos* ‘to come’, *glos* ‘cow-dung’, *hos* ‘duck’, *mos* ‘to go’, *os* ‘thou art’.

Rhyme	Rhymes by origin	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	Old Cornish /-os/ ≡ OldC /-os/	4	8	4	2	22	6	2	0	48
strict	Old Cornish /-od/ ≡ OldC /-od/	0	0	2	2	10	18	6	6	44
loose	Old Cornish /-os/ - OldC /-od/	4	2	0	0	2	0	12	12	32
N_1	= no. of rhyming words from OldC /-os/	6	9	4	2	23	6	8	6	64
N_2	= no. of rhyming words from OldC /-od/	2	1	2	2	11	18	12	12	60
$N_1 + N_2$	= total number of rhyming pairs	8	10	6	4	34	24	20	18	124
Expected no. of loose rhymes if fully mixed		4	5	3	2	17	12	10	9	62

3.3 Ensemble Roys

Old Cornish /ui/, itself the fusion of earlier /ui/ and /oi/, became the monophthong /o/ in early Middle Cornish, but the digraph <oy> which represented it still reflected a diphthong.

Words in *-oes*, from Old Cornish /-uis/:

gloes ‘pang’, *koes* ‘leg’, *moes* ‘table’, *poes* ‘heavy’.

⁴ Including *drogwas*, *harlotwas*, *kawghwas*, *loselwas*, all low-life characters.

⁵ Including *ben'vas* ‘goodwife’, *dremas* ‘saint’.

Words in *-oes*, from Old Cornish /-uid/:

boes ‘food’, *dewdroes* ‘feet’, *goes* ‘blood’, *koes* ‘wood’, *loes* ‘grey’, *oes* ‘age’, *scoes* ‘shield’, *troes* ‘foot’.

Rhyme	Rhymes by origin	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	Old Cornish /-uis/ ≡ OldC /-uis/	0	0	2	0	4	0	0	0	6
strict	Old Cornish /-uid/ ≡ OldC /-uid/	12	4	6	8	12	26	6	0	74
loose	Old Cornish /-uis/ - OldC /-uid/	10	0	0	0	2	2	0	0	14
N_1	= no. of rhyming words from OldC /-uis/	5	0	2	0	5	1	0	0	13
N_2	= no. of rhyming words from OldC /-uid/	17	4	6	8	13	27	6	0	81
$N_1 + N_2$	= total number of rhyming pairs	22	4	8	8	18	28	6	0	94
Expected no. of loose rhymes if fully mixed		5	1	2	2	4	7	1	0	22

3.4 Ensemble *Res*

Like *Reth*, ensemble *Res* is complicated because the vowel has several sources, even in native Cornish words.

Words containing [-'ɛ:s] as the reflex of Old Cornish /-ɛs/:

les ‘profit’, *mes* ‘open field’, *nes* ‘near’.

Words containing [-'ɛ:s] < Old Cornish /-œs/; usually these are spelled with <eu> in *KK*, but when unrounded as here, they may be spelled with <e'>:

e's ‘is’, *de's* ‘come’, *tre's* ‘transverse’.

Words containing [-'ɛ:z] as the reflex of Old Cornish /-ɛz/:

a-les ‘apart’, *kres* ‘belief’, *les* ‘width’, *res* ‘runs’.

Words containing [-'ɛ:z] < Old Cornish /-œd/; usually these are spelled with <eu> in *KK*, but when unrounded as here, they may be spelled with <e'>:

bre's ‘judgment’.

Words containing [-'ɛ:z] < Old Cornish /-ɪd/; the list below shows that in *KK*, these are usually spelled with <y>, reflecting their etymological vowel /ɪ/; but they were subject to the sound-change /ɪ/ > /ɛ/ (George 2018), and in the rhymes considered here, the change has taken place:

a-hys ‘outstretched’, *brys* ‘mind’, *bys* ‘world’, *gwrys* ‘made’, *drys* ‘brought’, *porres* ‘urgently’, *prys* ‘occasion’, *res* ‘need’.

Rhyme	Rhymes by origin	PA	PC	RD	OM	BM	BK	CW	LC	Total
strict	Old Cornish [-'V:s] ≡ OldC [-'V:s]	0	0	4	2	4	0	8	0	18
strict	Old Cornish [-'V:d] ≡ OldC [-'V:d]	8	0	6	2	4	0	2	26	48
loose	Old Cornish [-'V:s] - OldC [-'V:d]	0	2	0	0	0	0	0	4	6
N_1	= no. of rhyming words from OldC /-Vs/	0	1	4	2	4	0	8	2	21
N_2	= no. of rhyming words from OldC /-Vd/	8	1	6	2	4	0	2	28	51
$N_1 + N_2$	= total number of rhyming pairs	8	2	10	4	8	0	10	30	72
Expected no. of loose rhymes if fully mixed		3	1	4	2	3	0	4	12	30

4) COMPARISONS BETWEEN THE TEXTS

4.1 Ratio of actual number of loose pairs to the “fully mixed” number

This ratio, for the ensembles analysed in Section 3, is given in Table 16, as a percentage. The last line shows the corresponding percentages from the ensembles in Section 2, added from Table 11 for comparison.

		Numbers of loose rhymes in all analysed ensembles								
		PA	PC	RD	OM	BM	BK	CW	LC	Total
Actual number of loose rhymes		36	22	8	42	8	2	84	22	224
Expected no. of loose rhymes if fully mixed		32	36	34	47	36	73	69	25	353
Ratio actual / fully mixed as a percentage	Section 3	113	61	24	89	22	3	122	88	54
	Section 2	76	66	20	67	34	32	117	0	54

The closeness between the two sets of results is striking. The overall percentage (54%) is the same in both sets, and the ranking of the texts by ratio is almost the same. In Section 2, there was no doubt about the nature of the final consonants in the rhyming sequences: the differences were geminate *v.* single and voiceless *v.* voiced. Now the fact that the results for Section 3 closely resemble the control set in Section 2 confirms the validity of the methodology. The figures in the last line show that **the reflex of Old Cornish /s/ had not been voiced to [z]**, at least for the authors of RD, BM and BK.

4.2 Percentage of rhyming pairs which are loose

Another way of comparing the texts is to calculate the percentage of rhyming pairs which are loose. This is done in Table 17, separately for the ensembles examined in sections 2 and 3 above. The results for each section are similar. CW, PA and OM (in that order) have the most loose rhymes, and BK, RD and BM have the least.

		Percentage of loose rhyming pairs								
		PA	PC	RD	OM	BM	BK	CW	LC	Total
Section 2	No. of loose pairs	66	38	10	38	22	20	26	0	220
	Total no. of pairs ($N_1 + N_2$)	206	148	120	138	174	170	58	22	1036
	%age of loose pairs	32	25	8	28	13	12	45	0	21
Section 3	No. of loose pairs	36	22	8	42	8	2	84	22	224
	Total no. of pairs ($N_1 + N_2$)	74	84	78	108	84	170	160	58	816
	%age of loose pairs	49	26	10	39	10	1	53	38	27

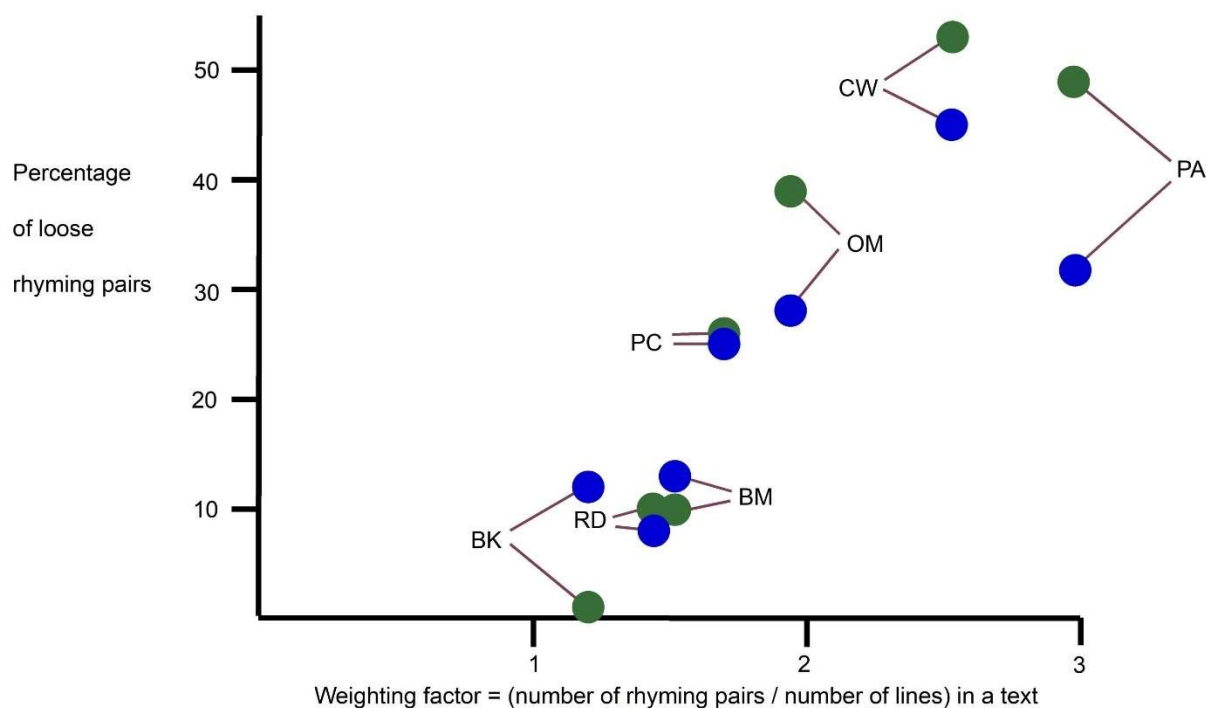
We should beware, however, of jumping to the conclusion that the author of CW was the worst rhymester, and that of BK the best. Table 17 fails to take into account the difficulty of finding rhymes to fit a particular rhyme-scheme. The high values for PA are partly attributable to the fact that the work consists almost entirely of A8 stanzas. Of the common rhyme-schemes, S8 (ABABCDDC) and S6 (AABCCB) both have one rhyming pair per line, but A8 (ABABABAB) has three rhyming pairs per line. It is much more difficult to compose A8 stanzas, because they require two sets of four rhymes⁶: it is not easy to find four words which rhyme strictly, so there will be more recourse to loose rhymes. BK, on the other hand, has no A8 stanzas, and therefore has relatively few loose rhymes.

⁶ The author discovered this when he composed *Devedhyans Sen Pawl un Bro Leon* (George 1983).

In order to take account of the different choice of rhyme-scheme, we use the ratio (number of rhyming pairs / number of lines) for each text. This weighting factor is given in Table 18.

	Calculating the weighting factor in each text							
	PA	PC	RD	OM	BM	BK	CW	LC
Total number of rhyming pairs	6168	5646	3914	5606	6948	3922	6478	430
Total number of lines ⁷	2074	3316	2714	2894	4575	3276	2562	323
Ratio (rhyming pairs / lines)	2.97	1.70	1.44	1.94	1.52	1.20	2.53	1.33

Here PA has the greatest weighting factor, almost 3 as given by theory⁸. The second highest is CW, which has a different stanzaic structure from the other Middle Cornish plays. The lowest is BK. There is a correlation between the percentage of loose rhyming pairs and the weighting factor, as shown in this diagram (blue dots = Section 2 data, green dots = Section 3 data):



One may eliminate the effect of choice of rhyme-scheme by dividing the percentage of loose rhyming pairs (Section 2 and 3 combined) by the weighting factor:

	Calculating the weighting factor in each text							
	PA	PC	RD	OM	BM	BK	CW	LC
%age of loose pairs (average)	36	26	9	33	12	6	50	28
Ratio (rhyming pairs / lines)	2.97	1.70	1.44	1.94	1.52	1.20	2.53	1.33
Result = quotient	12	15	6	17	8	5	20	21

The bottom line of Table 19 is a measure of how skilled the poets were at making strict rhymes. The texts fall into two clear groups: **the authors of BK, RD and BM are good**; the others are not so good.

⁷ The number of lines corresponds to the number of rhymes, not to the labelled numbers in the editions.

⁸ It is not exactly 3 because a few stanzas have ABABCBCB rather than the usual ABABABAB.

5) CONCLUSIONS

- Poets writing in Middle Cornish favoured using strict rhymes rather than loose rhymes. (There is insufficient data to draw a conclusion for Late Cornish).
- The least successful in applying this policy were the authors of PA and CW, because they chose more difficult rhyming-schemes.
- Of the other plays, PC and OM have relatively more loose rhymes than RD, BM and BK; but all have fewer loose rhymes than one would expect if no distinction was made between strict and loose.
- When one eliminates the effect of choice of rhyme-scheme, the best poets are still the authors of BK, RD and BM.
- The reflex of Old Cornish /-s/ remained as [-s], except perhaps in CW, contrasting with the reflex of Old Cornish /-d/, which was [-z]. Orthographies based on Middle Cornish, such as **KK** and SWF-M⁹, would therefore be improved if the latter were written <-z>.

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⁹ The internal consistency of SWF-M is ruined by the inclusion of the digraph <oo> for ['o:], since this comes from the later “signpost spelling”. **KK** <oe> is better.