Tracing Historical Sound Change from Modern Evidence: The Development of Middle English /ɪ/, /ɛ/, /ʊ/ + Intervocalic /r/ in Northumbrian English

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1. Introduction

This paper is concerned with the historical development of Middle English /ɪ/, /ɛ/ and /ʊ/ before intervocalic /r/ in Northumbrian English dialects. The modern Northumbrian dialect area is situated in the northeast of England, and comprises Northumberland, most of Tyne & Wear and a small part of Co. Durham. The extent of the Northumbrian area is indicated in Figure 1. The southern boundary by and large coincides with the original southern limit of the so-called Northumbrian Burr, that is, a uvular or velar realisation of /r/ (=[ʁ], [ʀ], etc.) (see further 2.2f).

Words with Middle English /ɪ/, /ɛ/, /ʊ/ + intervocalic /r/ constitute three small lexical sets, which will here be referred to as SPIRIT, MERRY and WORRY. The SPIRIT set comprises words such as *mirror, squirrel* and *syrup*, as well as *spirit* itself (Middle English /ɪ/); MERRY comprises words like *bury, herring, merry* and *terrible* (Middle English /ɛ/); and WORRY includes words such as *currant, Durham, furrow* and *worry* (Middle English /ʊ/).[1] The present classification of lexical items is based on what appears to have been their normal vowel in Northern Middle English, and takes no

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[1] As here defined, the lexical sets SPIRIT, MERRY and WORRY include only words which are attested in Middle English. A somewhat wider definition is given in Rydland, forthcoming, where SPIRIT, MERRY, WORRY comprise all words with modern Standard English (Received Pronunciation) /ɪ/, /e/, /ʌ/ before intervocalic /r/, including words of post-Middle English origin (e.g. *America, hurricane*).

account of Middle English variants with other vowels, such as /ɪ/ in *bury, merry* and /eː/ in *herring.*[2]

Middle English /ɪ/, /ɛ/ and /ʊ/ before intervocalic /r/ have a great variety of reflexes in the modern Northumbrian dialects. In the sources for this study (see 2.1), Middle English /ɪ/ in SPIRIT has a total of seven phonemic reflexes, /ɛ/ in MERRY has as many as nine, and /ʊ/ in WORRY has five. The number of phonetic reflexes is even higher, as three of the phonemes have two or more distinct realisations. Table 1 lists the Northumbrian vowel phonemes of SPIRIT, MERRY and WORRY, and specifies the principal cases of phonetic variation. The table also indicates the relative frequency of each phoneme in the source material (see 2.2 for more information about the modern material).

Table 1. Northumbrian reflexes of Middle English /ɪ/ in SPIRIT, /ɛ/ in MERRY and /ʊ/ in WORRY

Phonemes & major variants	SPIRIT	MERRY	WORRY
/ɪ/	++	(+)	
/ɛ/ [ɛ~æ]	+++	+++	
/a/ [a~ɑ]	+++	+++	
/ɔ/ [œ~ɔ]	+++	++	++++
/ʌ/			+
/ʊ/	(+)	(+)	++
/ə/	++	+	++
/aː/		+	
/ɑː/		+	
/ɔː/	+	+	+
Attestations (no. of words/localities)	7/32	26/49	15/37

++++ vowel very common; +++ vowel common; ++ vowel less common; + vowel rare; (+) vowel rare, and apparently restricted to specific words

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[2] Middle English /eː/ in *herring* is the source of the modern Northumbrian forms with [iə] (see Orton et al. 1978: Ph22 and Rydland 1998).
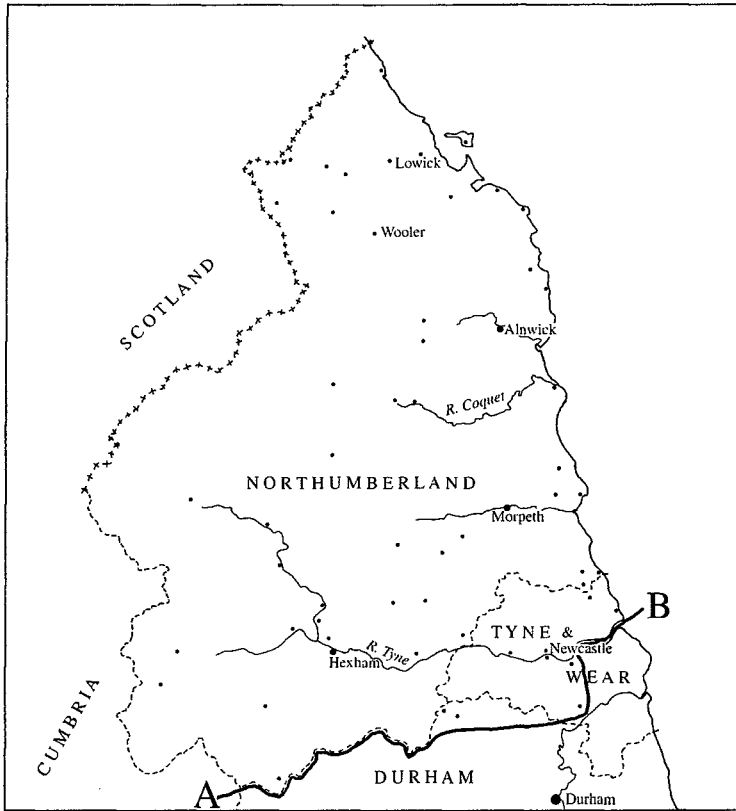
Figure 1. The Northumbrian dialect area
A – B: southern boundary
Small dots indicate localities represented in the material

Table 1 clearly demonstrates that Middle English /ɪ/ in SPIRIT, /ɛ/ in MERRY and /ʊ/ in WORRY have had a much more complex development in Northumbrian dialects than in Standard English. In this paper, I shall try to identify and describe the historical processes by which the modern Northumbrian vowels have evolved. The paper represents the first attempt at a complete and systematic description of this particular aspect of Northumbrian historical phonology. The account is based mainly on the evidence provided by the modern forms, as there is little relevant historical material,

but also draws on the standard descriptions of historical English phonology.

2. Sources and Material

2.1 The modern Northumbrian material dates from the mid-twentieth century (*c.*1930–*c.*1970), and represents a form of traditional vernacular speech which shows little influence from Standard English. At the turn of the twenty-first century, this particular variety of Northumbrian is no longer in general use.

The principal sources are the Orton Corpus (see Rydland 1998), Orton 1935–39 and the Survey of English Dialects (SED) (Orton & Halliday 1962–63; SED 1950, 1953–55, 1953–74). Together, these account for about 90% of the material. In addition, small amounts of data have been excerpted from the following sources: Berger 1980; Borgis 1936; Fenwick 1956; Grenfell Smith 1971; Halliday 1972; Linguistic Survey of Scotland n.d.; Viereck 1966; Voges 1948; Walsh 1963. The sources cover some fifty localities in various parts of the Northumbrian dialect area (see Figure 1). The size of the material from each locality varies from only one word to over thirty words.

In spite of the large number of sources examined, the total amount of material is relatively small (see Table 1). The reason is that none of the sources investigate SPIRIT, MERRY and WORRY systematically, but simply record a few arbitrary items, which are treated together with other words with Middle English /ɪ/, /ɛ/ and /ʊ/. In consequence, the lexical as well as the geographical coverage is very uneven.

2.2 Below follows more detailed information about the modern Northumbrian material (a complete survey of the material is given in Rydland, forthcoming).

a.   Some of the vowels recorded in SPIRIT, MERRY and WORRY are geographically restricted. First, /ʌ/ occurs only in the northernmost parts of the Northumbrian area (see 3.2.3); second,

/ɑː/ is absent in the southwestern corner of Northumberland (which thus has no contrast /ɑː/ • /aː/; see Rydland 1993: 44–5, 50 and 3.3.2 below); third, the phonetic types [æ] (=/ɛ/), [ɑ] (=/a/) and [œ] (=/ɔ/) (see Rydland 1995: 567–8) are absent in southwest Northumberland, and [œ] seems to be lacking also in the border districts in the far north (see Rydland 1999: 2).

 b. There is a fairly clear preference for certain vowels in each of the three lexical sets: /ɛ/, /a/ and /ɔ/ predominate in SPIRIT; /ɛ/ and /a/ are prevalent in MERRY; and /ɔ/ is the normal vowel in WORRY. The other vowels recorded are relatively infrequent by comparison, but may be common in specific words.

 c. All three lexical sets to some extent have different vowels in different words. In the set SPIRIT, for example, *spirit* itself appears with /ɪ/, /ɛ/, /a/, /ɔ/, /ə/, while *syrup* has /a/, /ɔ/, /ɔː/. Similar discrepancies are found in MERRY (e.g. /ɛ/, /a/, /ɑː/ in *errand*, the same three plus /ə/, /aː/, /ɔː/ in *herring*) and WORRY (e.g. /ɔ/, /ɔː/, /ʌ/, /ʊ/ in *currant*, the first two plus /ə/ in *Durham*). Some of the differences between words of the same set are undoubtedly due to the dearth of material (see 2.1) rather than actual usage. Thus it is likely that a systematic investigation of SPIRIT, MERRY and WORRY would have shown a greater variety of vowels in many words; for instance, *syrup* in all probability has /ɪ/, /ɛ/ and /ə/ in some forms of traditional Northumbrian speech, and *spirit* may well have /ɔː/.

 d. A number of lexical-incidental usages in SPIRIT, MERRY, WORRY appear to belong predominantly to specific parts of the Northumbrian area, that is, they may be regional features within Northumbrian English. An example is the use of /ɔ/ in MERRY, which is attested mainly in the southeast (see further 3.2.1).

 e. Some of the forms with long vowels (/aː/, /ɑː/, /ɔː/) have very unusual structures: they show Burr Deletion, that is loss of the intervocalic /r/ (=[ʁ] etc.), and Schwa Loss (/ə/ > Ø) is also common, so that several forms are in fact monosyllabic. Examples with long vowels include the following: /bɔːɪk/ *Berwick*; /kɔːn(t),

kɔːrənt/ *currant*; /dɔːm/ *Durham*; /ɑːnd/ *errand*; /haːn, hɑː(ə)n, hɔː(ə)n/ *herring*; /mɔː(r)ɪ/ *merry*; /sɔːrəp/ *syrup*; /tɑːbl, tɔːbl/ *terrible*; /wɔːɪ/ *worry*.

f. /r/ in SPIRIT, MERRY and WORRY usually appears as a burr ([ʁ, ʀ]) in the material. Apical /r/ occurs above all in southwest Northumberland, parts of which may never have had the burr (see Påhlsson 1972: 22). Besides, apical /r/ alternates with the burr on Tyneside, along the Scottish border in the far north and in Durham near the southern boundary of the Northumbrian area.

3. Developments and Processes

3.0 The great variety of modern Northumbrian vowels in SPIRIT, MERRY and WORRY is the outcome of several different historical processes, which together span a period of about six hundred years. The earliest changes can be dated to late Middle English, more specifically, the fourteenth century. Further changes took place in early Modern English, in the nineteenth century, and finally in the early 1900s. I shall discuss the various developments in chronological order.

3.1 Late Middle English

The late Middle English period saw a number of changes in the vowels of SPIRIT and MERRY. These changes were not specifically Northumbrian, but are known from other regional varieties as well, including the predecessor of Standard English. There were two main processes, both of which involved variable lowering of front vowels, /ɪ/ and /ɛ/, in the environment of a following intervocalic /r/. The two changes were chronologically separate, and may be referred to as *Early Lowering* and *Later Lowering*. These processes are illustrated in Figure 2. A third change, much less widespread, resulted in raising of /ɛ/ in the same environment.

3.1.1 Early Lowering

Early Lowering affected the original /ɪ/ of SPIRIT, which tended to be replaced by /ɛ/ from about 1300 (see Dobson 1968: 570–71; Jordan 1974: 234–5). This change is the source of modern Northumbrian /ɛ/ in SPIRIT. Since the change was variable, the original /ɪ/ was kept, and SPIRIT words accordingly came to have alternation /ɛ/ ~ /ɪ/ in late Middle English: forms in /ɛ/ were adopted in some districts and by some speakers, while other districts and speakers kept the original forms in /ɪ/. In the Northumbrian area, Early Lowering seems to have been common in most districts north of the River Tyne, but was apparently rare or perhaps absent in the southernmost districts.
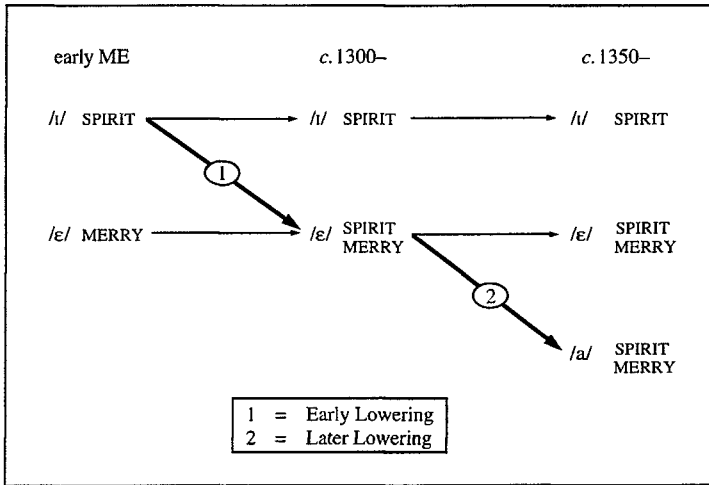

Figure 2. The Northumbrian development of original
Middle English /ɪ/ and /ɛ/ before intervocalic /r/

3.1.2 Later Lowering

Later Lowering involved late Middle English /ɛ/, which was variably lowered to /a/ from about 1350 (see Dobson 1968: 562–3; Vikar 1922: 156). The change evidently affected the

recently developed /ɛ/ in SPIRIT (see 3.1.1) as well as the original /ɛ/ of MERRY, and therefore yielded /a/ in both sets. This development is the origin of modern Northumbrian /a/ in SPIRIT and MERRY.[3] Because the change was not categorical, the original forms in /ɛ/ survived, and both SPIRIT and MERRY therefore show alternation /a/ ~ /ɛ/ from the late fourteenth century onwards (SPIRIT also had /ɪ/; see Figure 2). To judge from the modern evidence, Later Lowering occurred in most parts of the Northumbrian area, though in SPIRIT it is attested only in the districts which had formerly been affected by Early Lowering (see 3.1.1).

In early Modern English, Northumbrian /a/ was sufficiently common in SPIRIT and MERRY to serve as a model for the pronunciation of new words with Standard English /ɪ/ or /ɛ/ + intervocalic /r/. Both /ɪ/ and /ɛ/ were sometimes replaced by /a/ in such words in Northumbrian dialects, as is clear from modern /a/ in for instance *irritate, terrace* and /ɑː/ in *America* (/əˈmɑːɪkə/). In the latter word, /ɑː/ depends on an earlier form in /a/ (see 3.3.1–2).

Later Lowering was an extension of the common fourteenth-century change /ɛ/ > /a/ before non-prevocalic /r/, in words such as *dark, far, starve* (< *derk, fer, sterve*). The latter change occurred with great regularity in late Middle English (see Luick 1964: 477–9; Dobson 1968: 558ff), while lowering before intervocalic /r/ was very infrequent, and apparently confined to northern dialects (see Orton et al. 1978: Ph22–3).

3.1.3 Raising of /ɛ/

Late Middle English /ɛ/ underwent occasional raising to /ɪ/ in various phonetic contexts (see Luick 1964: 376–8; Dobson 1968: 567–9). Raising before intervocalic /r/ is documented in *cherry*

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[3] But Northumbrian /a/ in *errand* may derive from early Middle English /a/ < Anglian shortened *ǣ*; (see Luick 1964: 348, 351).

(Middle English *chiri(e)* etc.; see *Middle English Dictionary*), and may have occurred in other MERRY words as well. The modern Northumbrian material includes sporadic /ɪ/-forms in *cherry* and *terrible*, both of which may have developed /ɪ/ by Middle English raising of /ɛ/.

3.2 Early Modern English

The Northumbrian vowels of SPIRIT, MERRY and WORRY were subject to several changes in the early Modern English period. It is necessary to distinguish three different processes, all of which were evidently variable. Two of them occurred in all three sets, and resulted in a partial merger of /ɪ/, /ɛ/ and /ʊ/. These changes will be referred to as the *First Merger* and the *Second Merger*. The third development comprises lowering and unrounding of original /ʊ/ in WORRY. The relative chronology of the changes is not entirely clear, but the modern evidence suggests that they were contemporaneous rather than consecutive. The general development may be illustrated as shown in Figure 3.

3.2.1   The First Merger

The First Merger comprises three different changes, which are numbered 1a–1c in Figure 3. The input vowels were /ɪ/, /ɛ/ and /ʊ/, all of which became Northumbrian /ɔ/ before an intervocalic /r/. However, there appear to have been certain regional differences. Changes 1a and 1b, which produced /ɔ/ in SPIRIT and MERRY, seem to have occurred mainly in the southeastern districts, south of the River Coquet (see Figure 1). By contrast, change 1c, which yielded /ɔ/ in WORRY, apparently took place in most parts of the Northumbrian area, the only exceptions being the southwestern corner and the extreme north.
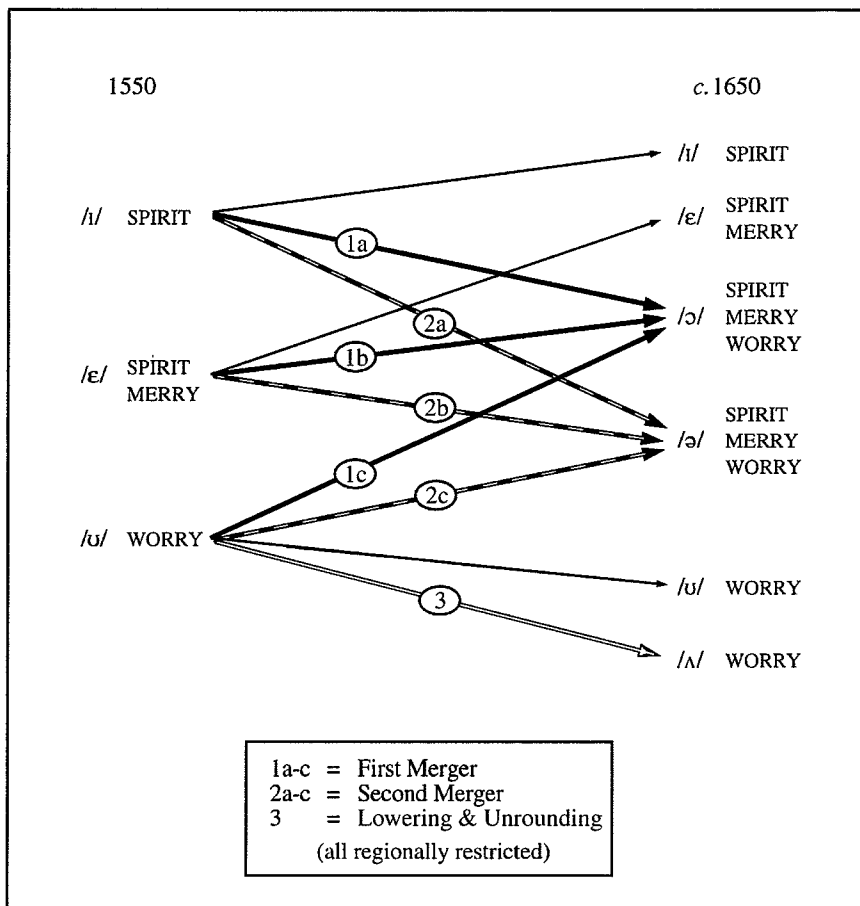
Figure 3. The Northumbrian development of early
Modern English /ɪ/, /ɛ/, /ʊ/ before intervocalic /r/

Changes 1a (/ɪ/ > /ɔ/) and 1b (/ɛ/ > /ɔ/) seem to have been exclusively Northumbrian, while 1c (/ʊ/ > /ɔ/) probably occurred in other northern dialects as well, as suggested by modern /ɔ/ in WORRY in various parts of the north (see e.g. Wright 1905: Index; Klein 1914: 123; Orton et al. 1978: Ph 57a). In the Northumbrian area, all three changes may have been initiated by the Northumbrian

Burr, which was probably firmly established by the early 1600s. Burr-conditioned backing and lowering of vowels are well documented in the later history of Northumbrian (see 3.3.2–3), but there is no evidence of pre-burr rounding.

The First Merger offers a straightforward and economical account of the development of modern Northumbrian /ɔ/ in SPIRIT, MERRY and WORRY. The process was part of a more extensive Northumbrian change of short /ɪ/, /ɛ/ and /ʊ/ in pre-/r/ environments: all three vowels in fact tended to become /ɔ/ also before a *non-prevocalic* /r/, in words such as *first, perch* and *hurt*. The latter change is the Northumbrian equivalent of the contemporary pre-/r/ centralisation (> /ə/) in Standard English (see Dobson 1968: 746ff). Owing to later lengthening (see 3.3.1), seventeenth-century /ɔ/ before non-prevocalic /r/ commonly appears as /ɔː/ in modern Northumbrian (/fɔːst/ *first*, /pɔːtʃ/ *perch*, /hɔːt/ *hurt*; see Rydland 1998).

Orton (1933: 262ff) and Dean (1962: 351–3) propose a different path of change for modern Yorkshire /ɔ/ in the *first* and *hurt* classes: it is assumed that early Modern English /ɪ/ and /ʊ/ before non-prevocalic /r/ first became /ə/, which was then retracted and rounded to /ɔ/. However, Northumbrian /ɔ/ in SPIRIT, MERRY and WORRY can hardly be a further development of earlier /ə/, as such a change would be very difficult to reconcile with the modern distribution of /ɔ/ and /ə/ in the three sets.

3.2.2 The Second Merger

The Second Merger involves centralisation of /ɪ/, /ɛ/ and /ʊ/ before an intervocalic /r/ (see Figure 3, changes 2a–2c), and yielded /ə/ in SPIRIT, MERRY and WORRY. This process was apparently rare in Northumbrian, but seems to have occurred sporadically in various parts of the area, above all in the southeast. However, some examples of modern Northumbrian /ə/ may be borrowings from the neighbouring dialects of Cumbria and Durham, which commonly use /ə/-type vowels in SPIRIT, MERRY and WORRY (see Hedevind

1967: 98, 114, 142; Rydland 1982: 159–61; Orton et al. 1978: Ph22–3, 32, 57a).

The Second Merger was an extension of the usual seventeenth-century centralisation /ɪ, ɛ, ʊ/ > /ə/ before non-prevocalic /r/ (see 3.2.1). Centralisation before intervocalic /r/ seems in the main to be a feature of regional dialects, but also occurred sporadically in Standard English, though here the change has later been reversed (see Dobson 1968: 748, 752, 757).

3.2.3 Lowering and unrounding of /ʊ/

In a small part of the Northumbrian area, seventeenth-century /ʊ/ in WORRY underwent the same change as in Standard English: it was lowered and lost its lip rounding, becoming /ʌ/ (see Figure 3, change 3). This development was evidently confined to northernmost Northumberland, more specifically, the districts north of Wooler and Lowick (see Figure 1). In contrast to other northern dialects, this area also has modern /ʌ/ from Middle English /ʊ/ in such words as *butter, son* and *thunder* (see Kolb et al. 1979: 227, 230ff). The evidence indicates that Northumbrian /ʌ/ in WORRY evolved by a native change, and is not due to influence from Standard English.

3.3 The nineteenth century and later

The principal Northumbrian changes in SPIRIT, MERRY and WORRY in the nineteenth century include Pre-/r/ Lengthening and certain realisational modifications. The latter were due to influence from the Northumbrian Burr, the uvular quality of which tends to cause backing and/or lowering of neighbouring vowels, especially preceding ones (see Påhlsson 1972: 20; Rydland 1995: 567ff). There were also a couple of minor changes, which were confined to a small number of specific words. From about 1900, Burr Deletion gave rise to a phonemic split of one of the lengthened vowels.

3.3.1 Pre-/r/ Lengthening

Pre-/r/ Lengthening in SPIRIT, MERRY and WORRY was a sporadic change, which seems to have occurred almost exclusively in Northumbrian dialects (but see below). The vowels affected were /a/ and /ɔ/, which became /aː/ and /ɔː/, respectively. Lengthening of /a/ is attested only in MERRY (e.g. /harən/ *herring* > /haːrən/), but is likely to have occurred in SPIRIT as well. This change is the immediate source of infrequent /aː/ in a few MERRY words (see 2.2e). Lengthening of /ɔ/ is found in all three sets (e.g. /sɔrəp/ *syrup* > /sɔːrəp/, /mɔrɪ/ *merry* > /mɔːrɪ/, /kɔrənt/ *currant* > /kɔːrənt/), and has given rise to the modern variants in /ɔː/ (see 2.2e). It is assumed that Schwa Loss in such forms as /haːn/ *herring* and /kɔːn(t)/ *currant* post-dates lengthening, as indeed suggested by the frequent preservation of /ə/ after long vowels in the modern material.[4]

Northumbrian lengthening of /a/ and /ɔ/ before intervocalic /r/ can be tentatively dated to the first few decades of the nineteenth century. The change was probably contemporaneous with lengthening of /a/ and /ɔ/ before non-prevocalic /r/, in such words as *dark, hard, far* and *fork, north, storm*. The latter development appears to have occurred at a very late date in Northumbrian English: if we can trust the evidence of Ellis 1889 and Wright 1905, it cannot have begun much earlier than 1800. Northumbrian Pre-/r/ Lengthening does not seem to have been a burr-conditioned change, as it also took place in the districts where /r/ was apical (see 2.2f). The change must therefore be considered as independent of the phonetic quality of /r/.

Outside the Northumbrian area, lengthening in SPIRIT and MERRY is attested sporadically in various parts of the north (see e.g.

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[4] It should be mentioned that lengthening /a/ > /aː/ and /ɔ/ > /ɔː/ is also evidenced in other words with intervocalic /r/, such as *barrel, carry* and *borrow, orange* (modern Northumbrian forms with long vowels include /baːl, baːl, baːrəl/, /kaːi/ and /bɔːrə/, /ɔːndʒ/; see Rydland 1998).

Reaney 1927: 105; Rydland 1982: 160, 298; Rydland 1998, *terrible*).

3.3.2 Pre-Burr Backing of /aː/, Burr Deletion and the emergence of /ɑː/

In most of the Northumbrian area, /aː/ < /a/ in MERRY (also in SPIRIT?) was soon modified by a realisational change, which may be referred to as *Pre-Burr Backing*. This process involves the retraction of front vowels in the environment of a following burr, and turned front /aː/ (=[aː]) in MERRY into a back [ɑː]-type vowel ([haːʁən] *herring* > [hɑːʁən], etc.) (see 3.3.3 for Pre-Burr Backing of short /a/). The same development took place before the non-prevocalic burr, as in *dark, hard, far* (e.g. [daːʁk] *dark* > [dɑːʁk]). The data in Ellis 1889 suggests that Pre-Burr Backing of /aː/ began about the mid-nineteenth century. The change was clearly very common, and must have been categorical in many speaker groups; however, it was generally absent in the extreme southwest of the Northumbrian area (see below), and may have failed occasionally in other districts as well.

Pre-Burr Backing of /aː/ was a purely phonetic development, and had no phonemic implications: the new back [ɑː] was a contextual variant of the phoneme /aː/, as long as the conditioning burr was kept ([hɑːʁən] *herring* = /haːrən/, [dɑːʁk] *dark* = /daːrk/, etc.). It should be noticed that Northumbrian /aː/ continued as an [aː]-type vowel in non-pre-burr environments in such words as *fall, draw* and *cold, snow*, all of which have /aː/ in traditional Northumbrian (/faː(l)/, /draː/, /kaː(l)d/, /snaː/). At this point Northumbrian /aː/ thus had two distinct realisations, [aː] and [ɑː], the latter of which was used only before the burr. From about the turn of the twentieth century, however, the non-prevocalic burr was gradually deleted (e.g. [dɑːʁk] *dark* > [dɑːk]), and there was also a tendency to drop the intervocalic burr after long vowels (e.g. [hɑːʁən] *herring* > [hɑːən] or, with Schwa Loss, [hɑːn]). When this happened, back [ɑː] was no longer confined to pre-burr environments: it now occurred in the same phonetic contexts as

front [aː] = /aː/, and contrasted with it in numerous minimal pairs (e.g. /kaːd/ *cold* • /kɑːd/ *card*, /faːl/ *fall* • /fɑː/ *far*, /dʒaː/ *jaw* • /dʒɑː/ *jar*, /aːnd/ *owned* • /ɑːnd/ *errand*). Burr Deletion thus brought about a phonemic split of original /aː/: the back variant [ɑː] now acquired phonemic status, becoming a separate phoneme /ɑː/.

Front /aː/ before /r/ (in MERRY and the *dark, far, hard* set) did not undergo backing in the southwestern corner of Northumberland, where the burr was rare or absent (see 2.2f). Traditional speech in this district has /aː/ corresponding to general Northumbrian /ɑː/ and uses /oː/ in words such as *fall, draw* and *cold, snow* (see Rydland 1993: 48–50).

3.3.3 Realisational changes of /ɛ/, /a/ and /ɔ/

In modern Northumbrian, /ɛ/ and /a/ have optional variants, [æ] and [ɑ], in pre-burr environments (see 2.2a for regional variation), as in [fæʁət (~fɛʁət)] *ferret* and [bɑʁi (~baʁi)] *bury* (see Rydland 1998). These variants are clearly due to burr-conditioned lowering and backing, respectively. Pre-burr lowering of /ɛ/ and backing of /a/ can be assumed to have begun in the mid-nineteenth century, about the same time as /aː/ was retracted in the same context (see 3.3.2). Both processes appear to have been much less regular than Pre-Burr Backing of /aː/. As far as can be determined, both [æ] and [ɑ] have always had the status of optional variants, while [ɑː] soon became virtually the only possible pre-burr realisation of /aː/.

Northumbrian /ɔ/ has two main variants, back rounded [ɔ] and front (centralised) rounded [œ] (the latter is absent in certain districts; see 2.2a). Historically, [œ] is the younger of the two, having developed by fronting [ɔ] > [œ] at a date which cannot be precisely ascertained (see Rydland 1999: 13). However, the fronting appears to have been prevented, or at least impeded, by a following burr. In SPIRIT, MERRY and WORRY, Northumbrian /ɔ/ is predominantly realised as [ɔ] in pre-burr contexts, while [œ] is common in forms with alveolar /r/; thus [hɔʁi], [hœɹi] *hurry* (but

see 2.2a). The same is the case in other words with /ɔ/ before /r/, such as *borrow, porridge*. Since [ɔ] is the original form, it may be assumed that the effect of the burr on the realisation of /ɔ/ was not to cause retraction of an existing front vowel (compare /a/ > [ɑ]), but rather to preserve the original back variant [ɔ].

3.3.4 Minor changes

Under this heading I shall comment briefly on the sporadic development of Northumbrian /ʊ/ in a few words belonging to SPIRIT and MERRY.

In SPIRIT, /ʊ/ is attested only in the word *squirrel*. The modern /ʊ/-form does not derive from the infrequent Middle English variants in /ʊ/ (*scurel* etc.; see *Middle English Dictionary*), but no doubt arose by contextual rounding and backing of /ɪ/ after labio-velar /w/. This is in fact a common Northumbrian development, which is well documented in words such as *whip, whisper* and *widow* (see Wright 1905: 70; Kolb 1966: 65; Rydland 1995: 572–3, 582). The date of the change is uncertain, but the paucity of *u*-spellings in early northern sources suggests that it was relatively late in most of the words concerned.

In MERRY, /ʊ/ is found in two words with orthographic *u*, namely *bury* and the second part of the place-name *Rothbury* (probably < Middle English *-bery*; see Mawer 1920: 169), each of which has one /ʊ/-form in the material. Since /ʊ/ is highly unlikely to derive from any of the earlier Northumbrian vowels of MERRY, the two /ʊ/-forms are best explained as occasional spelling pronunciations, both of which are probably of recent origin.

3.4   Retention of Middle English /ɪ/, /ɛ/, /ʊ/

In spite of the various historical developments which have occurred in SPIRIT, MERRY and WORRY, the original Middle English vowels in some cases survive in modern Northumbrian with little or no change. Thus it is a fair assumption that modern /ʊ/ in WORRY

descends directly from Middle English /ʊ/. Modern /ɪ/ in SPIRIT and /ɛ/ in MERRY, too, are likely to be continuations of the corresponding Middle English vowels, though some examples of /ɪ/ and /ɛ/ in these sets may be standardised forms, which are likely to be fairly recent innovations. The preservation of Middle English /ɪ/, /ɛ/ and /ʊ/ in the face of a number of phonological processes was made possible by the fact that the changes concerned did not take place regularly, so that the input vowels survived in at least some forms of Northumbrian speech (see e.g. 3.1.1–2, 3.2.1–3).

4.   Summary and conclusions

This paper has tracked the Northumbrian development of Middle English /ɪ/, /ɛ/ and /ʊ/ before intervocalic /r/ in the lexical sets SPIRIT, MERRY and WORRY. It has been shown that all three vowels have been subject to substantial changes in the history of Northumbrian. The first changes occurred in late Middle English, and include Early Lowering (3.1.1), Later Lowering (3.1.2) and sporadic raising of /ɛ/ (3.1.3). The early Modern English period saw three major developments: the First Merger (3.2.1), the Second Merger (3.2.2), and lowering and unrounding of /ʊ/ (3.2.3). These were followed in the nineteenth century by Pre-/r/ Lengthening (3.3.1), Pre-Burr Backing of /aː/ (3.3.2), realisational modifications of /ɛ/, /a/, /ɔ/ (3.3.3) and various minor changes (3.3.4). The most recent developments are Burr Deletion and the accompanying phonemicisation of back [ɑː], which seem to have begun about 1900 (3.3.2). Together, these changes account for the vast majority of the modern Northumbrian vowels in SPIRIT, MERRY and WORRY. The exceptions are modern /ɪ/ in SPIRIT, /ɛ/ in MERRY and /ʊ/ in WORRY, which continue the Middle English ancestral vowels (see 3.4).

Some of the Northumbrian changes in SPIRIT, MERRY and WORRY are described here for the first time. The most important of these are the First Merger, Pre-/r/ Lengthening, the emergence of

/ɑː/ by Pre-Burr Backing and Burr Deletion,[5] and the various burr-conditioned modifications of /ɛ/, /a/, /ɔ/. The identification and description of these changes are based entirely on data from the modern Northumbrian dialects.

Most of the vowel changes in SPIRIT, MERRY and WORRY can be attributed to the influence of the intervocalic /r/. Surprisingly, few of the changes seem to have been conditioned specifically by the Northumbrian Burr. The only certain exception is the recent Pre-Burr Backing of /ɑː/. In addition, the Northumbrian Burr may have been the precipitating factor in the First Merger, that is, the early Modern English development of Northumbrian /ɔ/ from earlier /ɪ/, /ɛ/ and /ʊ/.

As far as can be decided, all the modern Northumbrian vowels of SPIRIT, MERRY and WORRY have developed by native phonological processes. There may have been some influence from other northern dialects (see 3.2.2), but hardly any from Standard English.

I have emphasised throughout that the Northumbrian vowel changes in SPIRIT, MERRY and WORRY did not occur with complete regularity. As a consequence, the input vowels did not disappear, but continued to be used alongside the new vowels. The inconsistent nature of the changes is the principal reason for the great variety of vowels in SPIRIT, MERRY and WORRY in the modern Northumbrian dialects. Moreover, the Northumbrian development of Middle English /ɪ/, /ɛ/ and /ʊ/ in these lexical sets is a good example of the linguistic variability which must have characterised the past states of many non-standard dialects.

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[5] The development /a/ > /aː/ > /ɑː/ before *non-prevocalic* /r/ is discussed in Rydland 1993.

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