16. New England

Chapter 11 presented a brief characterization of Eastern New England [ENE] as a dialect area centered on the city of Boston. Its defining features were displayed in Maps 11.7 and 11.12. Eastern New England was defined as the region of *r*-vocalization where short-*a* is split into /æ/ and /ah/, as opposed to the New York City area where short-*a* is split into /æ/ and /æh/.[1]

Chapter 14 presented a brief characterization of Western New England [WNE] in Map 14.12. WNE appeared as an extension of the ED measure of the Northern Cities Shift, but the WNE system is not driven by the general raising of /æ/ and lies outside of the EQ isogloss. The WNE system may be considered as an originating matrix of the NCS as a whole.

The maps in this chapter will show a New England divided into four quadrants by two intersecting isoglosses: a north–south split formed principally by the /o/ ~ /oh/ isogloss and an east–west split formed by *r*-vocalization. Northeastern New England [NENE] is the *r*-less area with the low back merger, a sizeable area centered about Boston and extending into New Hampshire and Maine. A smaller southeastern area [SENE] is also *r*-less, without the low back merger: it is centered on Providence and Narragansett Bay. Western New England is about evenly divided into an *r*-ful northwest region with the low back merger [NWNE] including the major cities of Vermont, and a more heavily populated southwestern quadrant [SWNE], a second *r*-ful area with /o/ and /oh/ distinct which is centered about Hartford in western Connecticut and Springfield in western Massachusetts. Other features of the vowel system coincide with these criteria and reinforce the four-fold division.

16.1. New England in earlier Atlas studies

Chapter 2 of Carver (1987) sums up the evidence of LANE and Kurath (1949) on the linguistic geography of New England. Though LANE set up seven regions largely on the basis of settlement history, Carver finds the evidence scanty: "None have more than a handful of representative isoglosses and most of these have completely faded from use". (p. 27). The lexical evidence available to Kurath (1949) led him to reduce these regions to three: Northeastern (Eastern New England north of Boston), Southeastern (the Boston area and the Narragansett Bay area centered on Providence) and Southwestern (the Connecticut Valley area centered on Hartford and extending northward to western Massachusetts). The DARE evidence was based on 45 areal isoglosses, of which only 20 were found in LANE maps. The new dialect divisions based on DARE data are somewhat different from Kurath (1949), as shown in Figure 16.1.

The two maps differ in a number of ways. The essential difference is that Kurath groups Boston and Providence together, opposing them to New Hampshire and Maine, while the DARE evidence makes Boston the center of Northeastern New England, and segregates Providence quite sharply. In the revised view based on DARE data, the major dialect area of Northeastern New England includes southern Maine, New Hampshire, Vermont east of the Green Mountains, and all but the westernmost part of Massachusetts. The Narragansett Bay area surrounding Providence is distinct from Massachusetts, expanding only a little
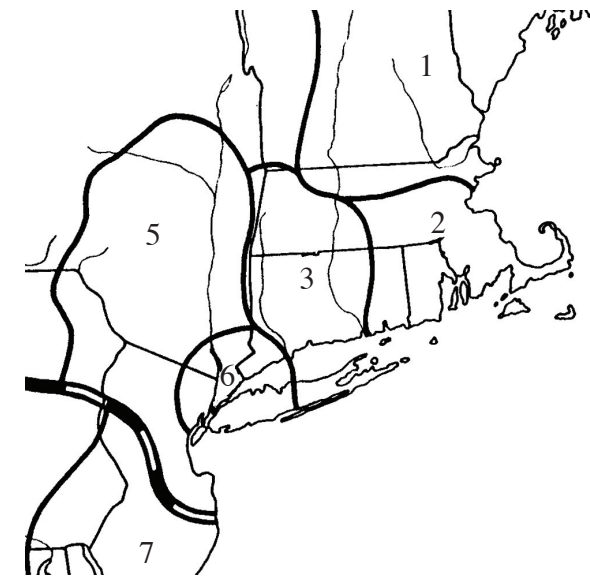
(a) Regions based on LANE data (Kurath 1949, Fig. 3): 1 Northeastern New England; 2 Southeastern New England; 3 Southwestern New England; 5 The Hudson Valley; 6 Metropolitan New York
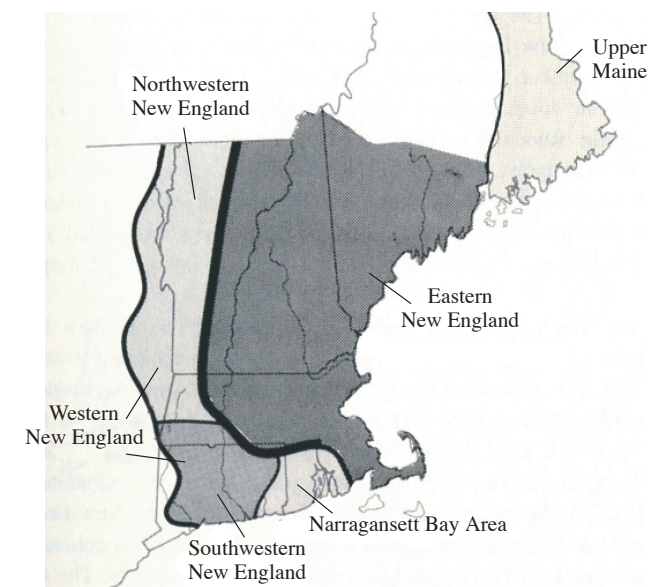
(b) Regions based on 45 DARE isoglosses (Carver 1987, Figs. 2.4, 5)

Figure 16.1. The regions of New England

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1   The Eastern New England split of /æ/ and /æh/ is more fragmentary and less consistent than the New York City split. In the general treatment of U.S. dialects in Chapter 11, "split short-*a*" does not include New England.

ways beyond Rhode Island to east and west. Southwestern New England is more limited in its northward extension, including only a small part of southwestern Massachusetts. The evidence to be presented below agrees with Figure 16.2, the Carver version.

16.2. Vocalization of /r/

Chapter 7 found *r*-vocalization in the Eastern United States in three distinct areas: the South, New York City, and ENE. All three areas participated in the trend toward replacement of vocalized *r* with consonantal *r* that began after the end of World War II. As Chapter 7 showed, the shift towards *r*-fulness took a different form in the South than in the North. While the South shows an overall shift to consistent *r*-pronunciation, the change in the North has been essentially a change in the normative attitude towards /r/, so that the change takes place primarily in careful (superposed) varieties of speech. Map 16.1 presents this situation in ENE, where a full range of *r*-vocalization is found, from 0 to 100 percent. Even in the Telsur interviews, which are relatively formal, the majority of speakers maintain a level of *r*-vocalization above 75 percent. It is only in New Hampshire where vocalized /r/ falls to very low levels. If it were not for the very close association of New Hampshire with the rest of Eastern New England on other variables, the light red isogloss might have to exclude the two New Hampshire cities.

The light red isogloss outlines the area of *r*-vocalization, as in Map 11.7. The light blue isogloss is the area with moderate approximation of /e/ and /o/ on the front–back dimension: that is, the ED measure is between 375 and 450 Hz (Map 11.12).

The division between ENE and WNE on the basis of *r*-vocalization appears to be quite firm. The definition of ENE based on *r*-vocalization does not appear at first to be related to the definitions of the North, Canada, and the South in Chapter 11, which reflected active chain shifts in progress. However, the maps to follow will show that many of the characteristic features that sub-divide ENE lie within the subsystem of vowels before /r/, and the dynamics of this subsystem depend on whether or not /Vhr/ is merged with /Vh/. The major ENE cities, Boston and Providence, are the most consistent in *r*-vocalization. The consequences for the vowel system will be developed in the maps to follow

## 16.3. The contrasts of /ohr/ and /ɔhr/ in New England
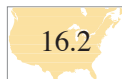
Chapter 2 showed that the initial position of North American English vowels maintained a distinction between the lower and upper mid–back rounded vowels /ohr/ and /ɔhr/ in *hoarse ~ horse, mourning ~ morning, port ~ storm*, etc. In Chapter 8, Map 8.2 displayed this nearly completed merger across the continent, with scattered remnants of this distinction in the South and a fairly strong concentration in New England. Map 16.2 gives a more detailed view of the situation in Eastern New England, using the same key as in Map 8.2. The blue symbols indicate speakers for whom the merger is complete. Although all of this area showed the distinction in the PEAS data of the 1940s, here the blue circles predominate in much of the region. Clearly different production of the two vowel classes is registered by the red stars; if the production seemed 'close' to the analyst, a red circle appears. Yellow circles are speakers who are intermediate in one respect or another.

The overall display shows that the distinction is maintained only in Eastern New England. In Western New England, there is only one speaker – an octogenarian in Middlebury, Vermont – who makes a distinction: all the others have a total merger. There is also a clear indication of the weakening and disappear-

ance of this distinction in ENE. Map 16.2 follows the convention of ordering the speakers by age, with the oldest at upper left and the youngest at lower right. In Bangor, Portland, Manchester, and Worcester, there is some evidence of age-grading, with younger speakers losing the distinction. Boston and Providence are mixed, and do not show this pattern.

Figure 8.1 displayed an acoustic analysis of the /ohr/ ~ /ɔhr/ distinction for Alex S. of Providence, located at lower right in the group of six Providence subjects in Map 16.2. While the two vowel distributions overlap for him, they are significantly different (for F1, by 66 Hz, $p < .005$). Given the fluctuating character of the opposition and its gradual decay, overall statistics may be deceiving. Figure 16.2. shows the back vowels before /r/ for Joseph T., 42, of Boston. Figure 16.2a shows that /ohr/ and /ɔhr/ are clearly distinguished on the front–back dimension, significant for F2 with a *t*-test of 2.27 at the .025 level. However, several odd aspects of this distribution can be observed. There is considerable overlap in the main group of upper right, with the /ɔhr/ token *born* the highest. This may be due to a reclassification of *born* as a consequence of its labial onset. The situation is
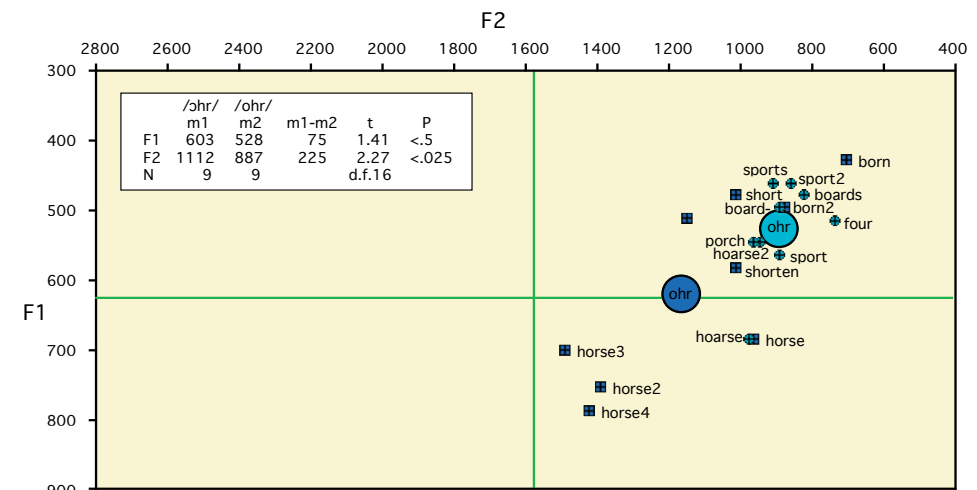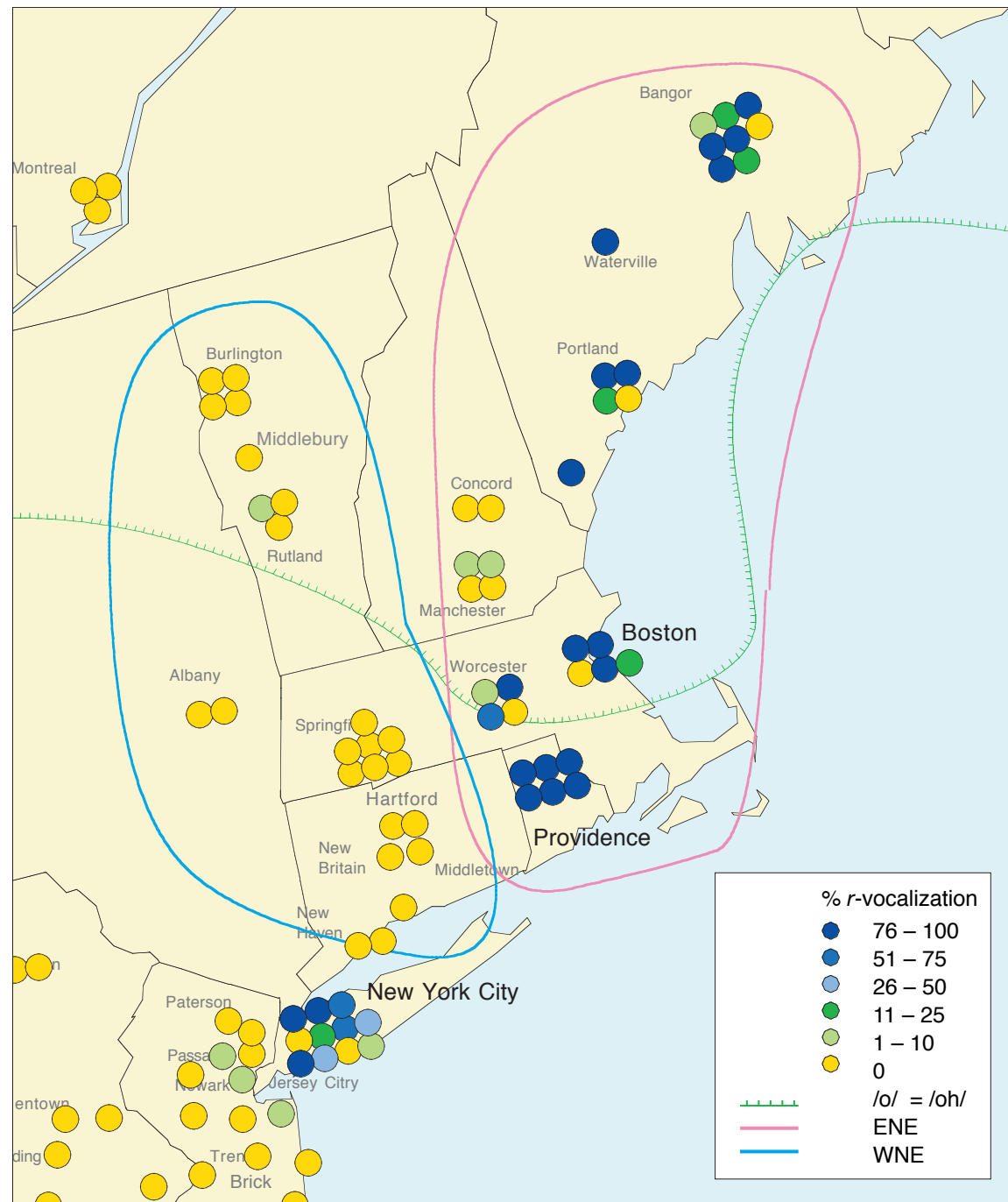

(a) Distinction of /ohr/ and /ɔhr/: F2 differences significant at the .025 level.
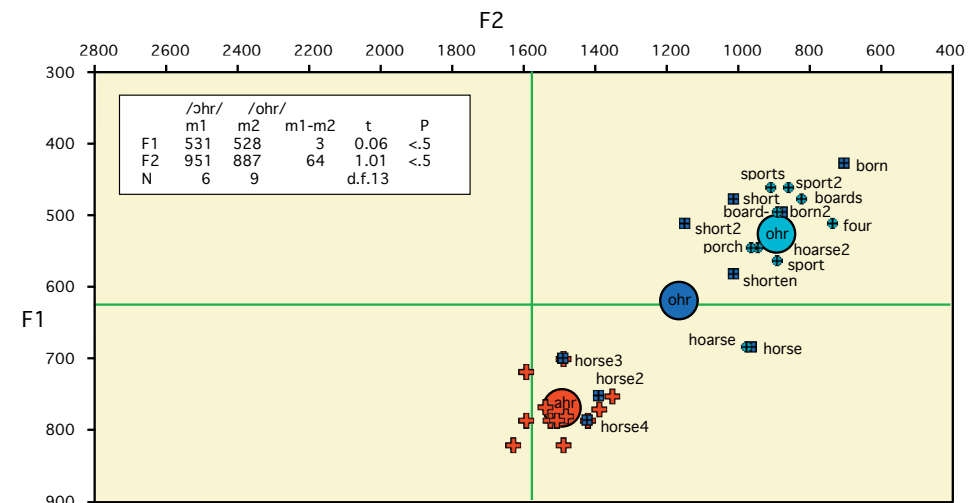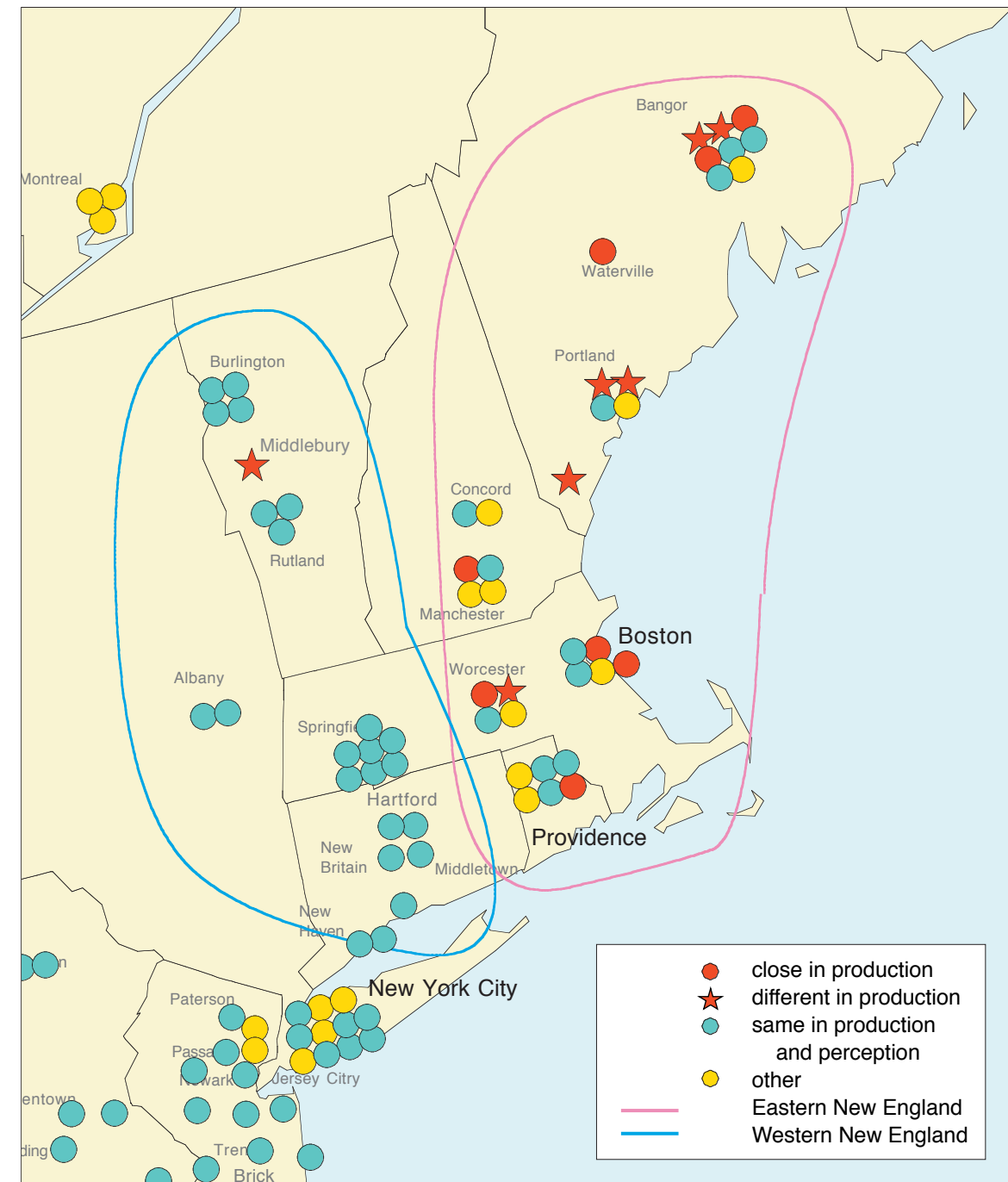

(b) Re-calculation of means with removal of three tokens of *horse* from minimal pairs, merged with /ahr/

Figure 16.2. The /ohr/ ~ /ɔhr/ distinction of Joseph T., 42, Boston, MA, TS 454

Map 16.1. r-vocalization in Eastern New England

Map 16.2. The distinction between /ohr/ and /ɔhr/ in Eastern New England

A defining feature of ENE is the vocalization of /r/ in *fear*, *fair*, *car*, *card*, *board*, etc. as shown by the pink isogloss. Although it is being replaced by consonantal /r/ in formal speech, ENE shows a high level of vocalization for most speakers. The weakening of this feature is most notable in New Hampshire and central Massachusetts; it is most consistent in Providence.

The contrast between *four* and *for*, *mourning* and *morning* was once quite general in the North and ENE, but it survives now principally in ENE. The red stars designate the six speakers who show this relic distinction most clearly. The light blue symbols show what is now the prevailing situation for most speakers – these two word classes are exactly the same.

even more difficult to resolve when we examine the tokens at lower left and right. While *hoarse* and *horse* are in identical position at lower right, at lower left there are three tokens of *horse* that are far removed from the *hoarse*2 token in the main distribution.

Adding /ahr/ to the display in Figure 16.2b clarifies the situation. The three tokens of *horse* at lower left have actually been merged with /ahr/: these are all taken from minimal pair tests, while the identical *hoarse/horse* tokens at lower left are elicited outside of the minimal pair framework. When the means are re-calculated without the *horse*2–4 tokens, the means of /ohr/ and /ɔhr/ are almost identical. This situation reverses that of Bill P. in Duncannon, PA, of LYS Figure 9.2, who all but merged /o/ and /oh/ in minimal pairs but maintained the distinction clearly in spontaneous speech. Here the merger is characteristic of spontaneous speech. When maximal attention to speech is stimulated by the minimal pair test, Joseph T. recollects that *horse* is different from *hoarse*. But he no longer has access to the original phonetic differentiation of /ohr/ and /ɔhr/, and assigns /ɔhr/ to the next available vowel class, /ahr/.

16.4. The low back merger in Eastern New England
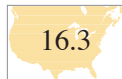
In the study of the low back merger in Chapter 9, a high concentration of merged tokens was found in Eastern New England, in agreement with previous studies. Map 16.3 shows the merger before nasals in *Don* and *dawn* in New England. The green symbols indicate complete merger of *Don* and *dawn* in production and perception. Their distribution follows the general low back merger isogloss, the oriented green line. Though there is a small amount of variation within the /o/ = /oh/ isogloss (eight of 35 speakers did not have a complete merger), there is only one green symbol outside of it: a 65 year old woman from Springfield, MA.
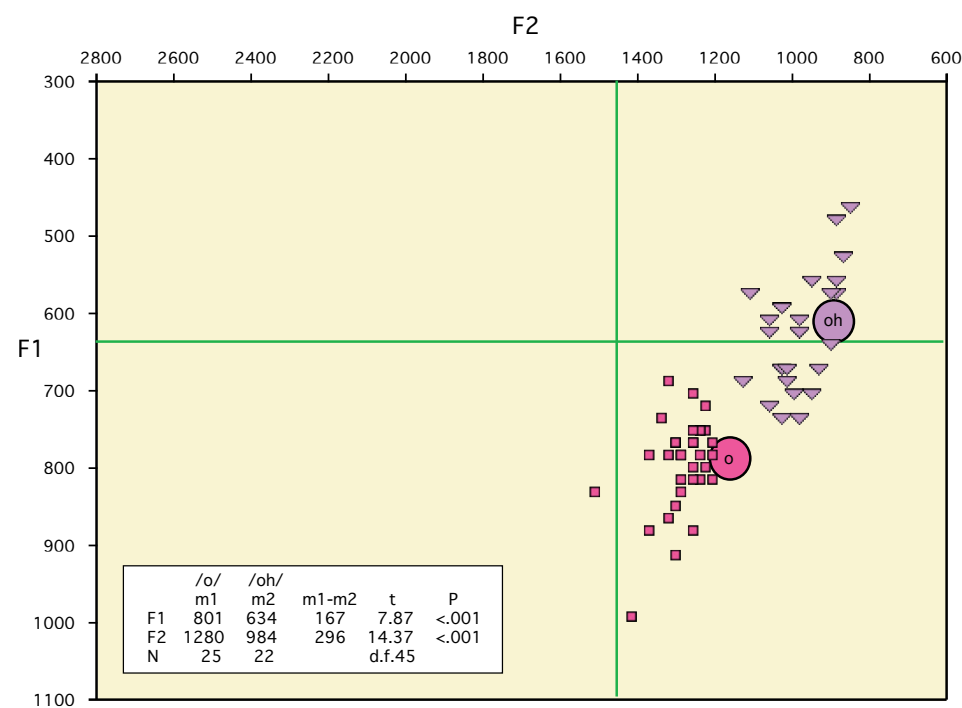

	/o/ m1	/oh/ m2	m1-m2	t	P
F1	801	634	167	7.87	<.001
F2	1280	984	296	14.37	<.001
N	25	22		d.f.45	

Figure 16.3. Low back distinction of /o/ and /oh/ for Alex S., 42, Providence, RI, TS 474. Bars and whiskers show one standard deviation from the mean

In ENE, the merger is confined to the area from Boston and Worcester northward, here labeled Northeastern New England [NENE]. On the evidence of this map and others to follow, Providence is assigned to a separate sub-dialect of Southeastern New England [SENE]. The typical Providence low back vowel opposition is shown in Figure 16.3. There is no overlap of the two distributions, and the means are widely separated. Similar distributions appear for the two other Providence speakers who were analyzed acoustically.

The low back merger subdivides Eastern New England in a way that agrees with the DARE map of Figure 16.1b rather than the Figure 16.1a representing LANE, Kurath (1949) and PEAS. The division of ENE shown in Figure 16.1a is based on lexical data from LANE, but it was reinforced by the report of Rachel Harris, the fieldworker in Providence, that the city of Providence shared the low back merger with Boston. This result was presented in Harris' dissertation (1937) and further reinforced by the phonological data published in PEAS in 1961. Map 15 of PEAS (*oxen*) and Maps 22–24 (*law*, *salt*, *dog*) do not differentiate Boston from Providence as an area of merger. Syllabus 21 for the cultivated speaker from Providence shows the same range of rounded low back phones for *crop*, *John*, *college* as for *frost*, *log dog*. This report of a low back merger in Providence became a sharply debated issue following the published discussion of Moulton (1968), who as a native speaker of the dialect, found no basis for a low back merger in his own experience. McDavid (1983) discusses the issue in some detail, concluding that the problem lay in the fact that Harris was a speaker of a one-phoneme dialect and could not hear the phonetic distinctions that were present in the Providence dialect. Data in several previous chapters have distinguished Providence from the NENE area centered on Boston. Map 11.14 established a clear separation between Providence and Eastern New England by means of the UD line, by Providence joined to the North by /ʌ/ backer than /o/.[2] This phonemic and phonetic arrangement of the low back vowels makes Providence more similar to New York City than to the rest of New England, though the city's nasal short-*a* system prevents us from making this classification at a broader level.

Within WNE, Boberg (2001) argued that the geographic distribution of the low back merger forces us to recognize two distinct dialect regions: a northwestern region of merger, similar in most respects to the Canadian region above it; and a southwestern region which maintains the distinction, similar in most respects to the Inland North. Boberg's division between NWNE, comprising most of Vermont, and SWNE, comprising the western sections of Massachusetts and Connecticut, is clearly substantiated by the data in Map 16.3.
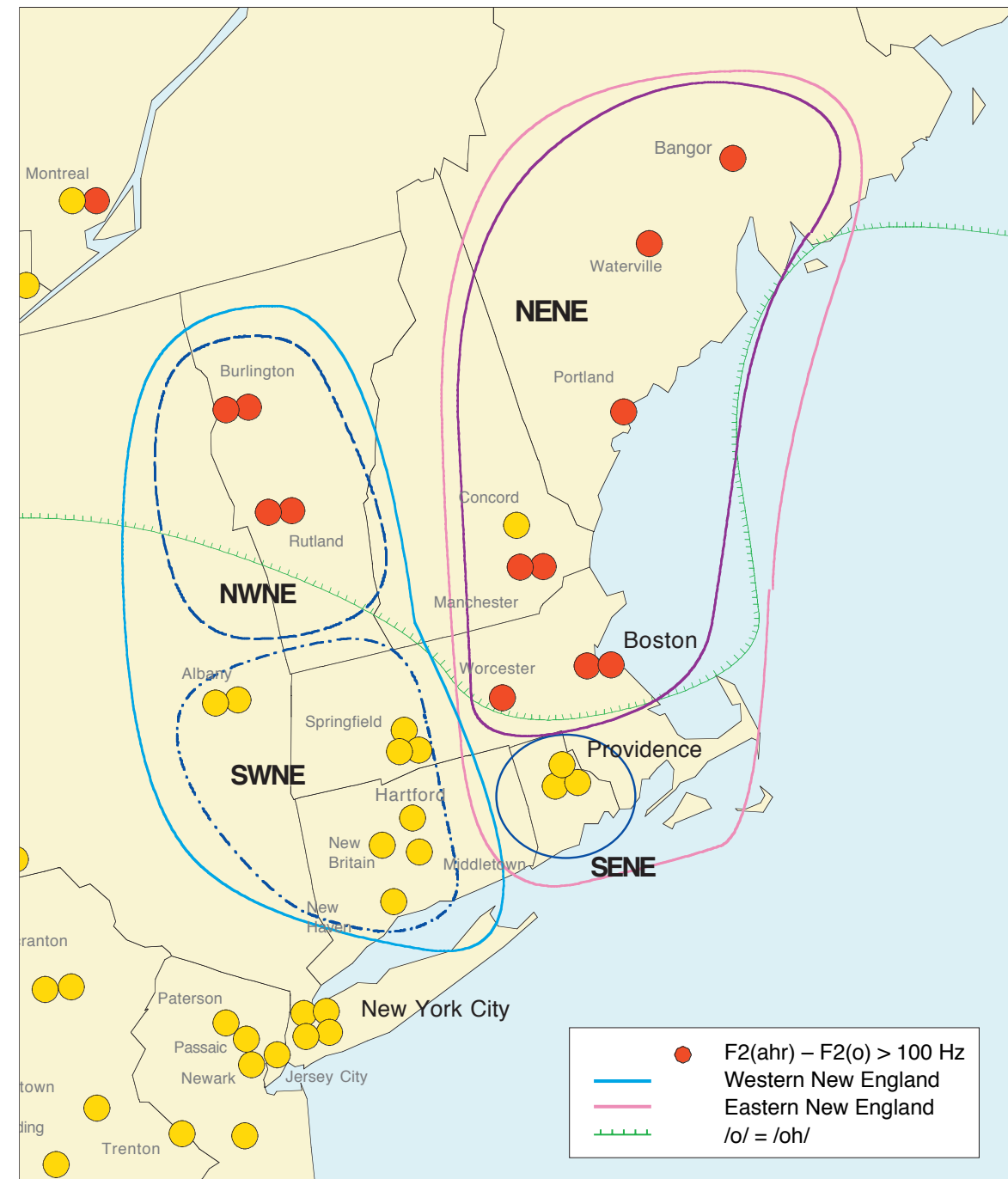
16.5. The fronting of /ahr/ and /ah/
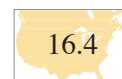
The separation of Providence and SWNE from Boston and NENE is repeated in Map 16.4, which displays the relative fronting of the /ahr/ class. For most dialects of North America, the nucleus of the /ahr/ class is identified with the /o/ class. In most U.S. dialects, /o/ is merged or very close to the /ah/ class and the nucleus is associated with /ahr/. The two sections of Northern New England are exceptional in this respect. Map 16.5 plots the difference between the second formant of /ahr/ and the second formant of /o/; red circles are speakers for whom this difference is greater than 100 Hz. All but one of the NENE and NWNE speakers who were analyzed acoustically show this feature. This division matches the geographic distribution of the low back merger, a north–south divide in which Vermont is united with NENE, and Providence with SWNE. No Providence subject shows

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2   This is partly a consequence of the fact that Providence does not have the low back merger that shifts /o/ to lower mid-back.position.
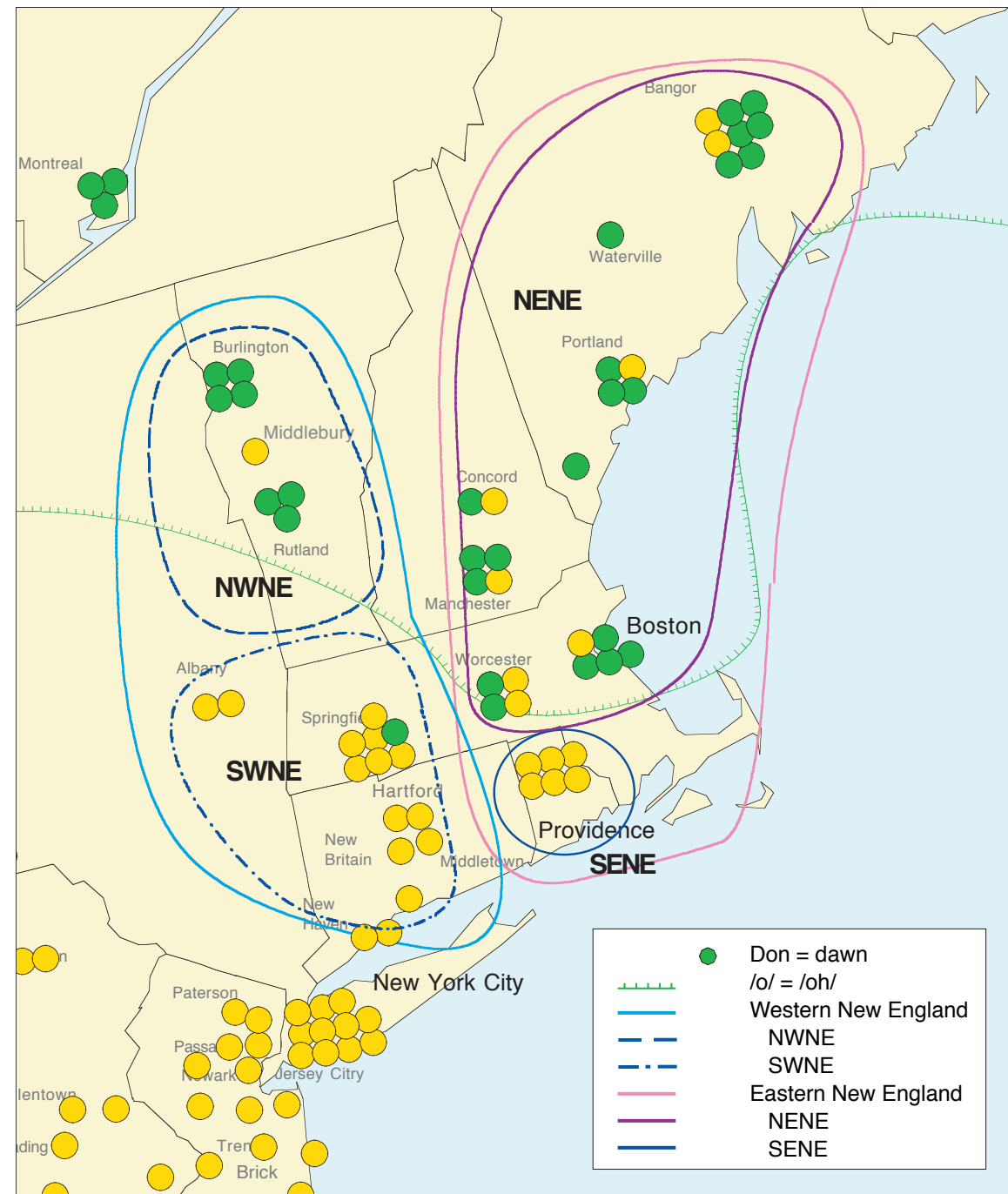
Map 16.3. The low back merger in New England

Map 16.4. Fronting of /ahr/ in Eastern New England

The merger of /o/ and /oh/ is shown here by the minimal pair *Don ~ dawn*, which was found to be almost totally merged in Canada. In ENE., it is almost as consistent but establishes a different set of boundaries than those shown in the last map. Providence is excluded, and the northern part of Western New England is included. The NENE region shows a consistent unity for the features of Maps 16.1–16.3.

For many North Americans, the vowel of /ahr/ in *car*, *card*, etc. has shifted up and to the back, but in ENE it is located in a much more central position. This feature unites Northeastern and Northwestern New England, along with the Atlantic Provinces as seen in Map 15.6.

this relative fronting of /ahr/, nor do any of the speakers from western Massachusetts or Connecticut.[3]

The fronting of /ah/

The features that separated the Boston area from the Providence area in Maps 16.3, 16.4, 11.14, and 14.8 are not specific to NENE, but are shared by NWNE. The aspect of the vowel system that distinguishes NENE most clearly from other sections of New England is the fronting of the /ah/ class in *father*, *spa*, *pa*, *pajama*, *aunt*, *half*, etc., separating it from /o/.[4] The identification of the /ah/ class with the fronted /ahr/ class is the inheritance of the long-established *r*-vocalization of ENE, and though the *r*-less pattern is weakening, the identification of the two nuclei remains.

In Map 16.5, dark red circles show speakers with the fronting of /ah/ relative to /o/ as well as the fronting of /ahr/ relative to /o/ that was displayed in Map 16.4. The bright red circles in NWNE indicate speakers who front only /ahr/, not /ah/. There are no exceptions in NENE: all six speakers for whom we have sufficient data show the dark red symbols.[5]

Figure 16.4 displays this pattern in the low vowels of a 75-year-old woman from Manchester, New Hampshire. In her system, short-*a* vowels follow the nasal configuration shown to be characteristic of New England in Chapter 13. *Ham* and *man* are higher and fronter than other short-*a* words, followed by syllables ending in palatals and other voiceless stops. The word *can't* is assigned to the broad-*a* class in low center position; *half* might also be considered for this class, since it is quite far removed from the other words with voiceless fricative codas (*athlete*, *fast*). These /ah/ words are associated with the /ahr/ class, represented by *scarf*, *barbecue*, *hard*, etc. Both /ah/ and /ahr/ are near the normalized grand mean of 1550 Hz. The short /o/ tokens are in low back position, around 1200 Hz, and are fully merged with /oh/ (not shown here).

The distribution of the /ah/ ~ /o/ distinction in Eastern New England

Map 16.5 indicates a uniform distinction of /ah/ and /o/ in NENE that can be considered a defining property of the dialect area. But the six acoustic records in this
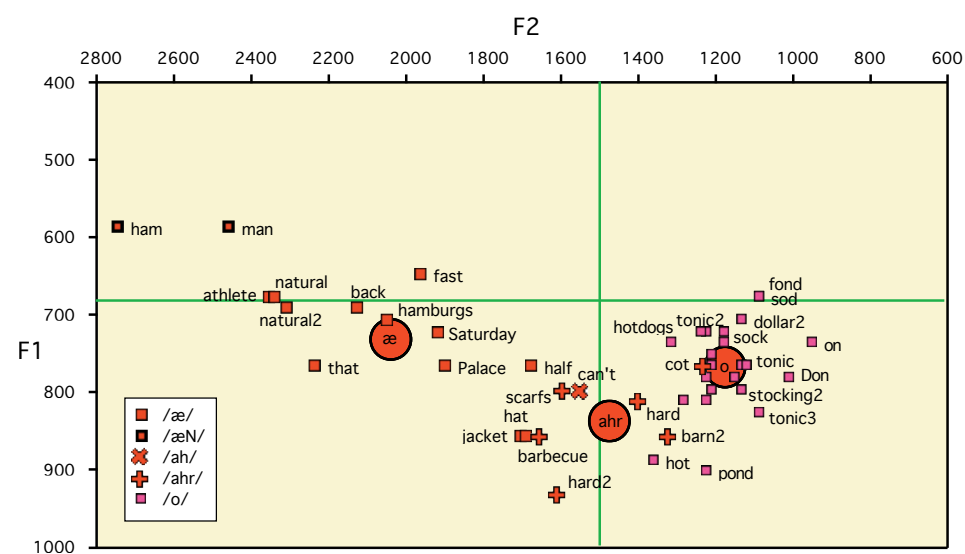

Figure 16.4. Low vowels of Adrienne M., 75, Manchester, NH, TS 447

area do not provide a dense enough coverage to make this uniformity clear. Nagy (2001) provides information on 474 subjects interviewed by University of New Hampshire students. The question posed was, "Does *father* rhyme with *bother*, like *feather* and *weather*"?[6] Massachusetts subjects showed a solid distinction, except for those most distant from Boston. In New Hampshire, the merger was reported by 20 to 60 percent, but here it was the regions closest to Boston that showed the highest percent of merger. This tendency of New Hampshire people to distance themselves from Boston is most noticeable among younger speakers (Nagy 2001, Table 1).

The east–west New England line

The evidence presented so far agrees with Figure 16.1 in the general placement of the line separating ENE from WNE, in that it passes somewhere near the Vermont–New Hampshire border, and through the middle of Massachusetts and Connecticut. In this respect, the results from LANE (16.1a) and DARE (16.1b) do not differ. However, a more detailed comparison of Maps 16.1–16.5 with Figures 16.1a, b is not possible, since LANE and DARE included data from a number of small towns and rural communities near the border that were not included in the survey of urbanized areas conducted for TELSUR. In Kurath (1949) and Carver (1987), a great deal of attention is necessarily given to the location of the boundary separating ENE from WNE. The line passes east of the Connecticut Valley cities (Springfield and Hartford), and divides the eastern part of Vermont (the northern Connecticut valley) from western Vermont (Burlington and Rutland), following the Green Mountain divide. There are no ANAE data that can relate to this level of detail, since that line is defined by rural communities that are absent from Map 16.1: a more precise contemporary delineation of the borders between the subregions of New England awaits more detailed local studies.

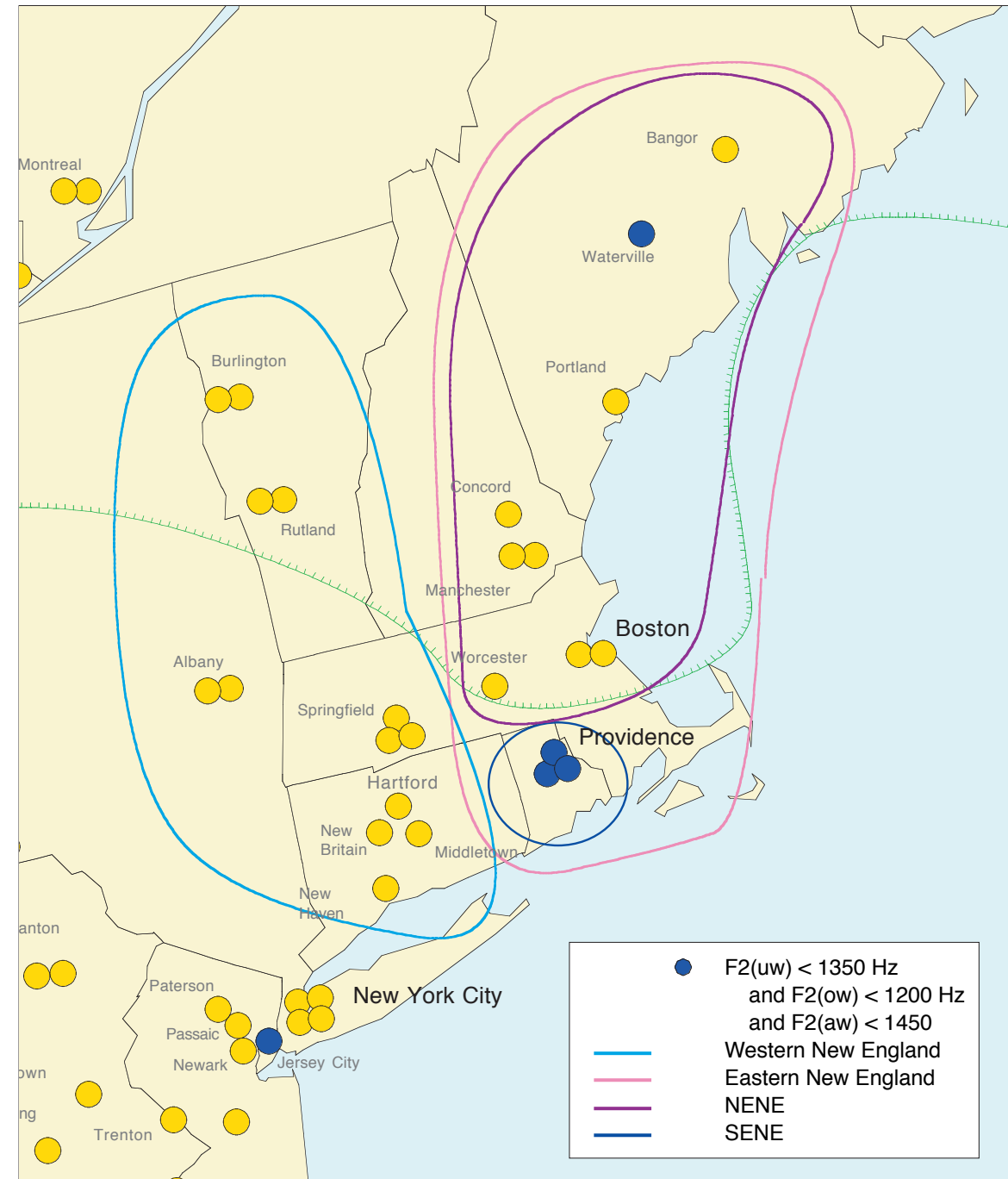## 16.6. The conservative position of Providence

Chapter 12 identified some areas of the North that did not participate in the general fronting of back vowels, and in this respect, the city of Providence was extreme. The vowel system of Alex S. of Providence was displayed in Figure 12.8, showing the back position of /aw/, /ow/, and /uw/. Map 16.6 shows the location of the most conservative dialects in regard to the fronting of these three vowels. The blue circles are speakers for whom the mean F2 value for the nucleus of /uw/ is less than 1350 Hz (200 Hz further back than the normalized mean of 1550 Hz), the F2 mean of /ow/ less than 1200 Hz, and the F2 of /aw/ less than 1450 Hz. All three Providence speakers are so marked. Outside of Providence, there is only one such speaker in New England (in Waterville, Maine), and one in New York City. The conservative treatment of the back upgliding vowels is therefore a hallmark of the SENE dialect.[7]

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3   The other side of the coin is the fact that /ah/ is fronted towards the center of the vowel system in absolute terms; but it is the distinction between /ah/ and /oh/ that forms the structural definition of this region.

4   See Chapter 2 for the history and specific composition of this class, which incorporates the original *father* set with a large body of foreign loan words, and in Northeastern New England, a certain number of the British broad-*a* words, irregularly distributed across individual speakers..

5   Since the /ah/ class was not the focus of direct elicitation, there are some speakers who did not have sufficient information on that class to be displayed here.

6   Results are currently posted at http://www.unh.edu/linguistics/NN/papers/survey.S99.html

7   There are only five other such speakers in North America: one in Rochester, NY, and four in Wisconsin.
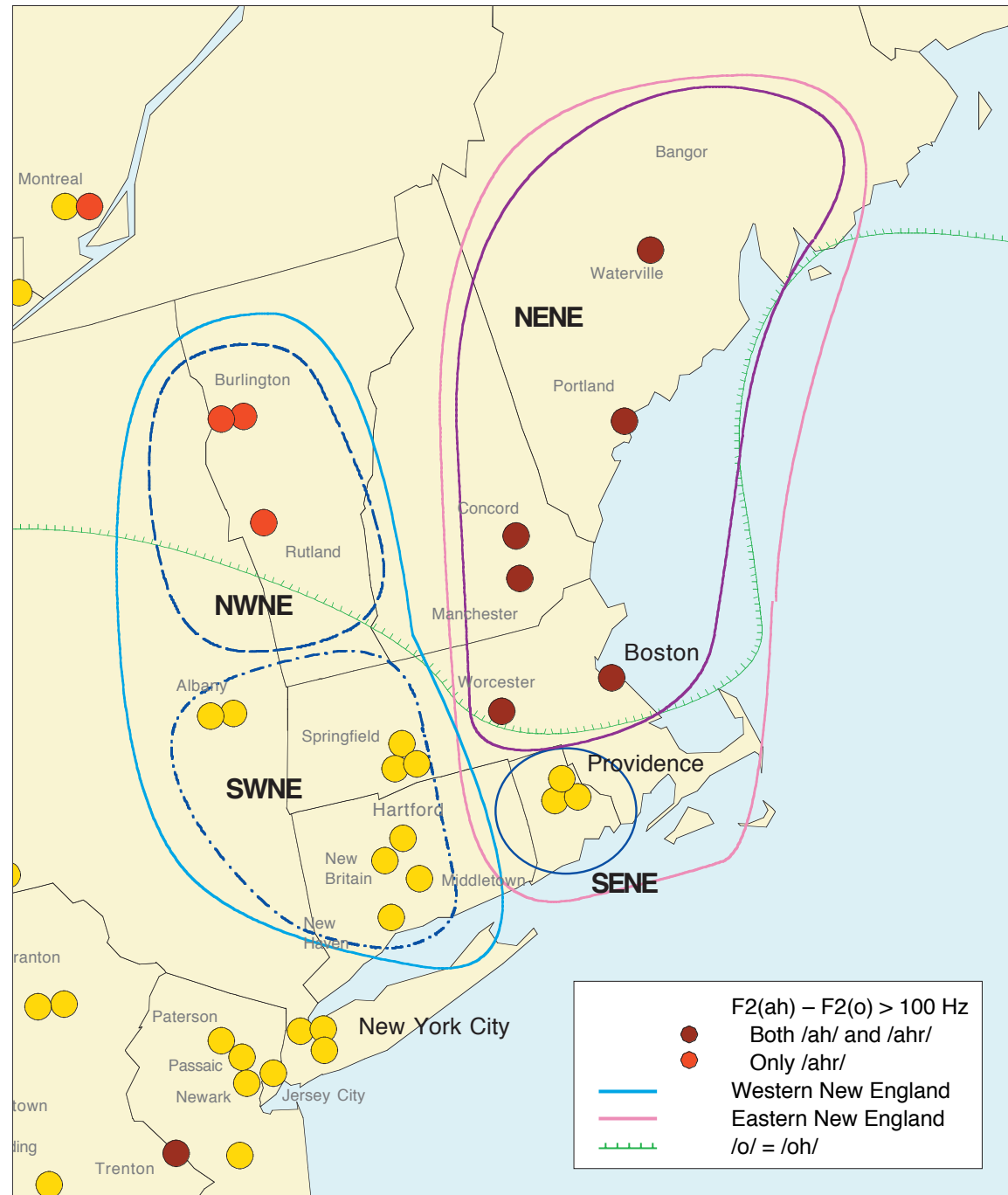
Map 16.5. Fronting of /ah/ in Northeastern New England

Map 16.6. The conservative treatment of back upgliding vowels in Providence

Northeastern New England is particularly marked by the central position of the vowel in *father*, *pa* along with "broad-*a*" words like *can't*, *aunt*, and *half*. While this class merges with /o/ in other dialects, it is distinct here. Only in NENE does it merge with the larger /ahr/ class in *car*, *card*, etc. when /r/ is vocalized. Compare this map with Map 16.4.

In Chapter 12, it appeared that Providence was the most conservative city in respect to the fronting of /uw/ and /ow/. This map shows how Providence contrasts with the rest of ENE in this respect, and is also differentiated from SWNE at the center of a separate SENE region.

16.7. Short-*a* systems

Chapter 13 presented a range of different organizations of the short-*a* word-class characteristic of American dialects. The New England patterns are displayed in Map 16.7. As Chapter 13 indicated, the nasal system predominates in both ENE and WNE. The red circles designate those speakers for whom words with nasal codas are higher and fronter than the rest, with a clear separation that can extend from the top to the bottom of the phonological space available. Figure 13.5 shows the vowel system of Dana L. of Boston, the rightmost of the two Boston speakers in Map 16.7. The nasal short-*a* pattern is dominant in both ENE and WNE, though WNE has more speakers with the continuous variant.

Not all New England short-*a* systems show the clear separation of Figure 13.5. Figure 16.5 shows a variant of this system, with a small set of words in syllables closed by nasal consonants in high–front position, and a second set only slightly higher than the main formation of lax /æ/ words. These include /æ/ before nasals in open syllables or polysyllables. It is characteristic of New England that vowels before voiceless fricatives are low, considerably lower than vowels before voiceless stops like *that*.[8] Another variant of the nasal system is found in Maine, where the nasal group is separated exclusively by F2: that is, vowels before nasals are considerably fronter than others (orange symbols in Map 16.7). To the south is found the split short-*a* system (Figure 13.3) characteristic of NYC. To the west are the general raising patterns of the Inland North, shown on Map 16.7 as blue circles.
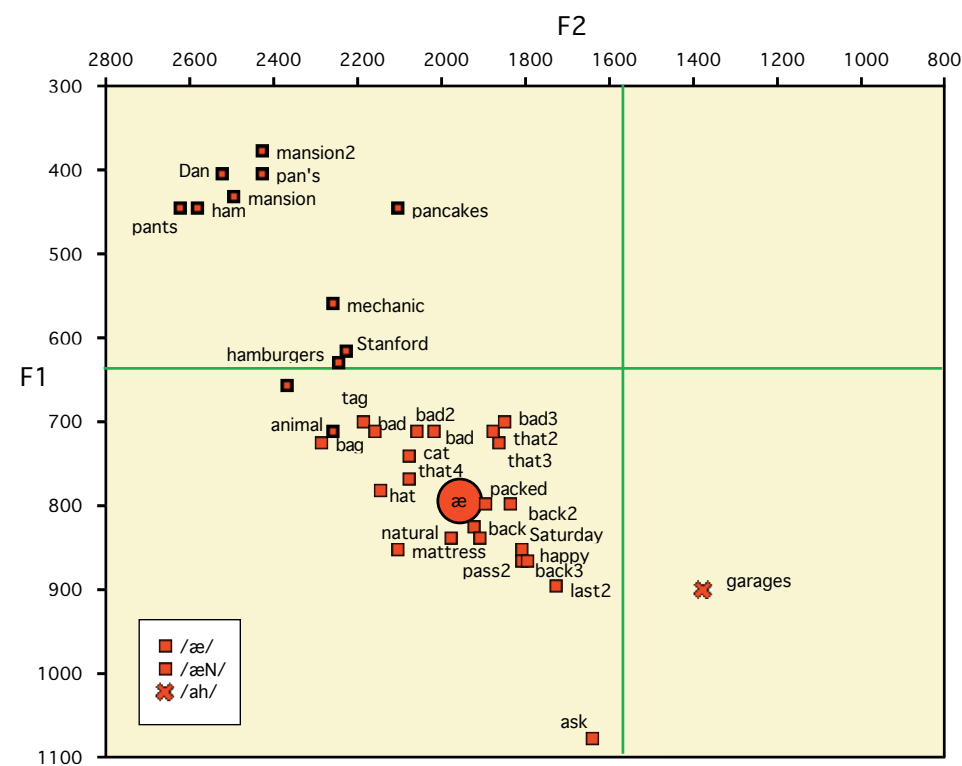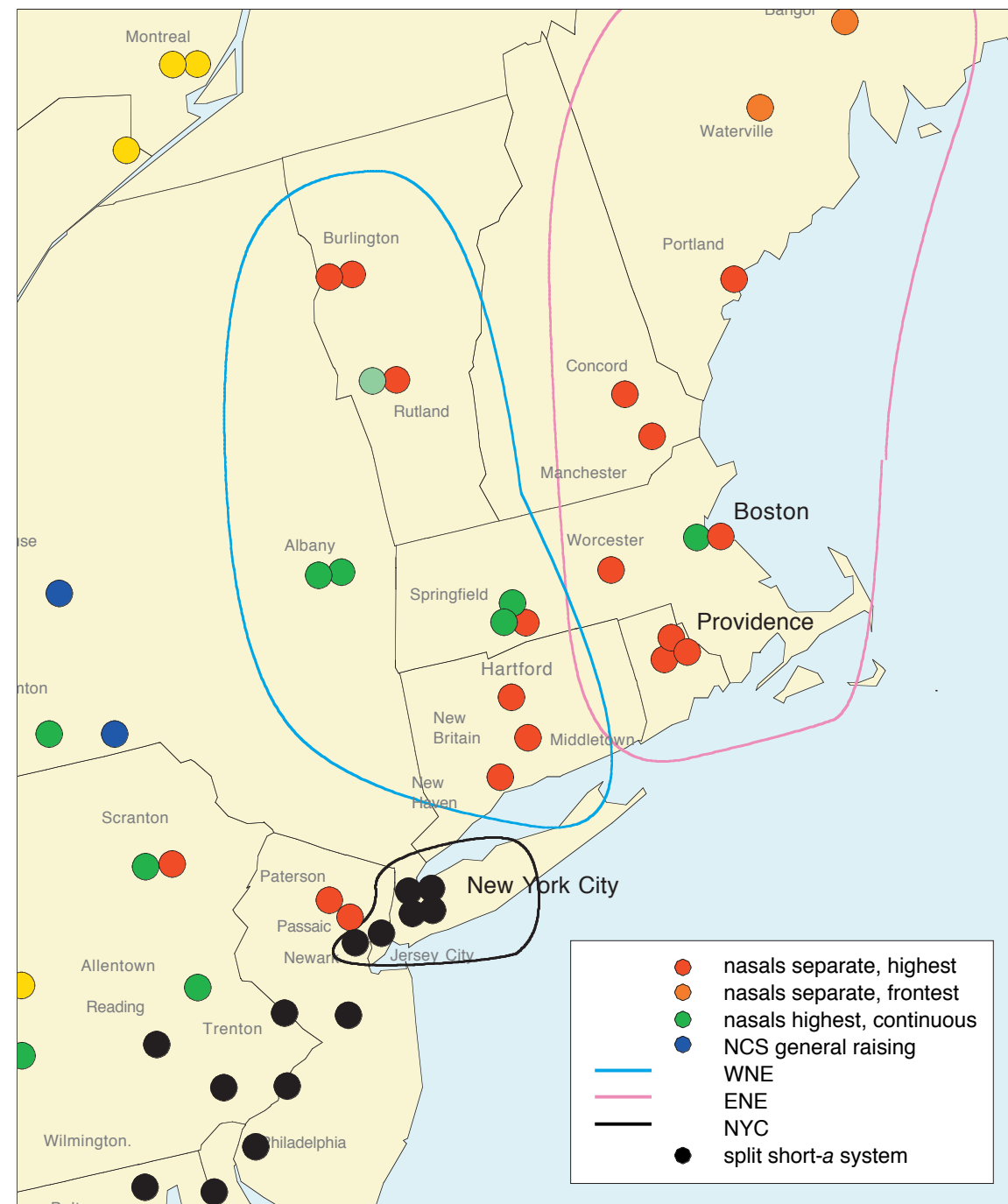

Figure 16.5. Short-*a* system of Natalie M., 45 [1998], Portland, ME, TS 724

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8   The word *ask* in Figure 16.5 may in fact be assigned to the /ah/ ("broad *a*") class, along with *garage*.

Map 16.7. The New England short-*a* system

The short-*a* nasal system is predominant in New England, where /æ/ is tensed and raised in any word ending with a nasal consonant, in *man*, *manage*, *animal*, *Spanish*, etc., but never elsewhere. Although this is the default system in many areas, it takes its most extreme form in ENE, as shown in Chapter 13 as well.