

Don or Dawn?

Perception and Production of / ɑ ~ ɔ / in Southern Ohio

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The merger of / ɑ / and / ɔ / has long been observed in both the United States and Canada, but debates continue concerning its exact provenance as well as its phonetic realization. A tape recording of three female voices representing three distinct dialect regions and reading a passage containing the words *Don* and *dawn* was played to 222 undergraduates at Ohio University, most of whom were from three general dialect regions of Ohio. Listeners were asked to answer a hypothetical question based on events in the story. Their answers reflected their interpretation of a key word in the passage as *Don* or *dawn* based in part on the phonetic shape of the vowel in each reader's voice. Results show that only the Northern Indiana voice elicited a clear distinction between the two target words; that is, her phonetic realizations were heard as representing the classic distinction between / ɑ / and / ɔ /. However, the distinction also was sharpest only in the answers from Northern Ohioans, who share the same Inland North dialect region. The other two voices contained the merger of the two phonemes toward / ɑ /, though with slightly different phonetic realizations; these appear to have elicited ambiguous answers depending on the listeners' own perceptions of what those realizations represent. The shifting link between speakers' own vowel productions and their perceptions of those vowels is evidenced in these results.

Labov (1999) has observed that informants regularly differ in the degree to which they perceive and produce vowel contrasts in interviews for the Phonological Atlas of North America project. For example, *feel* and *fill* are merged in both perception and production by some subjects, merged in either perception or production only by others, and kept distinct in both modes by still other subjects. Labov, Karen, and Miller (1991) found similar results in testing /ε / and / ʌ / merging before intervocalic / r / in Philadelphia, where local residents distinguished with difficulty these near-mergers in the "Coach Test" as well as in commutation tests of their own randomized productions (i.e., at less than the 100% criterion level set for native speakers' recognition of their own vowel systems). In yet other tests of the supposed "local advantage" native dialect speakers have in recognizing regional sounds, particularly vowels and diphthongs, uttered in isolation or in reduced context, Labov (1989) and Labov and Ash (1997) found this to be a considerably limited advantage; rates of recognition of Birmingham speech by listeners in Birmingham, Philadelphia, and Chicago were minimally different at the isolated word level, lower for college-age respondents than for high schoolers, and significantly different for all groups only at the phrase and sentence level. Flanigan and Norris (2000) obtained similarly limited perceptions in a test of a Southeastern Ohio dialect speaker's taped narration of a story involving seven target words containing low back vowel mergers or near mergers and

monophthongized diphthongs.

Using a simplified version of the International Phonetic Alphabet or IPA (the “American” or “APA” version) in introductory linguistics classes taught at a branch campus of Ohio University, I frequently give test items which are transcribed by Northern/North Midland speakers with low back unrounded [ɑ] but are transcribed by students from this southern Ohio campus and its environs with low back rounded [ɔ], the nearest equivalent to the intermediate but untaught [ɒ] which they actually produce. Examples include *on*, *doll*, *body*, *follow*, *polish*, and *Chillicothe* (the site of the branch campus, in south central Ohio). In contrast, central Ohioans (North Midlanders) typically write [ɑ] for all these words as well as for *fog*, *caught*, and *talk* (unlike Northern students, and myself, all of whom transcribe the last three using [ɔ]). When asked if [ɑ] would be acceptable in transcriptions of these words, most of my Chillicothe students say it would not be, suggesting that [ɑ] and [ɔ] (or [ɒ]) represent different phonemes for them.

The issue, of course, is whether or not Southern Ohioans have merged /ɑ/ and /ɔ/; that is, are they speakers of the so-called Third Dialect posited by Labov (1991, 1994, 1996) as distinctive in much of the Midland as well as west of the Mississippi? The merger of the two phonemes into one, with the resulting loss of the “open oh” or low back rounded vowel /ɔ/, is indicative of this Third Dialect, distinguishing it from both the Northern Cities Vowel Shift and the Southern Vowel Shift. Originating in western Pennsylvania in the nineteenth century, it has gradually spread westward and is most certainly present in central Ohio, which has traditionally been mapped as North Midland (see Map 1 in Appendix A). However, southern Ohio has traditionally been considered to be South Midland (see Map 2 in Appendix A), and it has been shown to participate in some of the Southern Shift, including monophthongizing of /aɪ/ and /ɔɪ/, tensing of /ɪ/, /ɛ/, and /ʊ/, and diphthongizing of the low back vowels in some environments (see Wetmore, 1971; Hankey, 1972; Thomas, 1996; Humphries, 1999; and Williams, 1999). Of concern to this researcher is, first, the degree of /ɑ : ɔ/ merger, if indeed it is occurring in southern and southeastern Ohio at all; and second, how local residents, as well as outsiders, hear and semantically interpret words that might be ambiguous even in a narrative context.

Mergers and Splits

The merger of /ɑ/ and /ɔ/ has been observed in American and Canadian English for several generations (Kurath & McDavid, 1961; Bailey, 1973; Wells, 1982; Labov, 1991, 1994; Clarke, 1993), but the phonetic shape of the merger has not always been clearly defined. Moreover, the maintenance of a phonemic distinction bears examination, especially when it may occur in some phonetic environments and not in others. For example, Bailey (1973) claimed that the merger of the two phonemes begins in the environment __tV (as in *naughty*), spreads to pre-alveolars (*caught*, *dawn*), and finally includes pre-velars (*hawk*), and that this change in progress can be observed cross-generationally. Allen (1976) noted the same kind of gradual change in young people in Minnesota who were not included in the database of the *Linguistic Atlas of the Upper Midwest*, which describes that area as maintaining distinct phonemes. Kurath and McDavid (1961) and Wells (1982) both cited the variability in pronunciation of some words even by Americans who retain the distinction—words like *fog*, *hog*, *water*, and *pa* are sometimes realized differently even in the same region.

When the merger occurs, however, its phonetic shape tends to vary systematically both by region and by word class (or lexical set, to use Wells' 1982 terminology).¹ Kurath and McDavid (1961) noted that the LOT and THOUGHT lexical sets merged at the intermediate low back rounded vowel / ɒ / in western Pennsylvania. Wetmore (1959) also described this backing toward, but not quite to, / ɔ / and Hankey (1972, p. 49) suggests that "this [ɑ] = [ɒ] phonological feature" is "the best single descriptive reference" to what he calls the West Penn-Ohio dialect. Kenyon and Knott (1953, p. xxxviii) had earlier observed that in New England "many speakers [have] only one phoneme (usually of / ɔ / quality) in such words as *cot* and *caught* or *collar* and *caller*." Lance (1994, pp. 356-358) suggests that this merger can be traced to developments in Early Modern English that have been retained in modern British English and in Northeastern and Canadian English. This change differs from the twentieth century merger to /ɑ / documented in much American English today in that (RP) British and (eastern) Canadian English maintain a three-way phonemic distinction (in the lexical sets FATHER, LOT, and THOUGHT), whereas northern (or Inland North) American English retains two phonemes (FATHER/LOT vs. THOUGHT) and the North Midland and West of America and western Canada are merging all three to /ɑ /.

The likelihood that use of two or even all three of these phonetic realizations might cause semantic confusion in the absence of clear disambiguation is therefore the basis of the present study. In a large university which draws its students and faculty from all sections of the United States and Canada as well as from other English-speaking countries, all of the above permutations of the low back vowels are heard, and anecdotal evidence suggests that misinterpretations are frequent, at least in the early stages of exposure to an unfamiliar dialect.²

Method and Hypotheses

A "Don/dawn" story test was given in three taped versions to 222 students taking an introductory linguistics course on the main campus of Ohio University in Athens; 192 (86.5%) of the respondents were from Ohio and represented all three dialect areas of the state (see Map 2 in Appendix A). Course sections used were divided into three roughly equal groups, with each group hearing one tape only. All three speakers on the tapes were female and represented three distinct dialect regions of North America: the Northwest (Oregon), the Inland North (northern Indiana), and eastern Canada (Ontario). The story contains two target words: *Don* as the name of the narrator's old boyfriend, and *dawn* as the early morning hour which appeared to arrive suddenly (see text in Appendix B). Demographic information about the students' childhood residences as well as those of their parents was obtained in order to determine primary home region and depth of exposure to its dialect (Payne, 1980), and then the students were asked to respond in writing to the question asked on the tape at the end of the reading: "What do YOU

¹ Wells (1982) uses 24 keywords or "lexical sets" to distinguish the "reference accents" of all English vowel systems (I, 117-123), and he marks them with small capitals. Thus, PALM (or FATHER, which he notes is less ambiguous than *palm*), LOT, and THOUGHT differentiate in RP (British) English the three vowels discussed in this article, while PALM/FATHER and THOUGHT are distinct in what he calls General American English; the LOT vowel (= / ɒ /) is absent from most American English, he says.

² On first hearing the proper name *Don* pronounced as [d ɒ n], in Athens, Ohio in 1980, I assumed the referent was a woman named "Dawn." The opposite reaction occurred to a graduate student from England named Dawn who, upon being addressed in class as [d ɑ n], looked around to see who "Don" was.

think I should have done?” One’s response would presumably depend on whether the subject thought “Don” or “dawn” (or possibly “Dawn”—signaling a female friend) had arrived at a potentially embarrassing moment (in the written text it is clear that “dawn” is the intended word). Thus, responses like “Introduce Don to your new boyfriend” or “Go home and get some sleep” were typical.

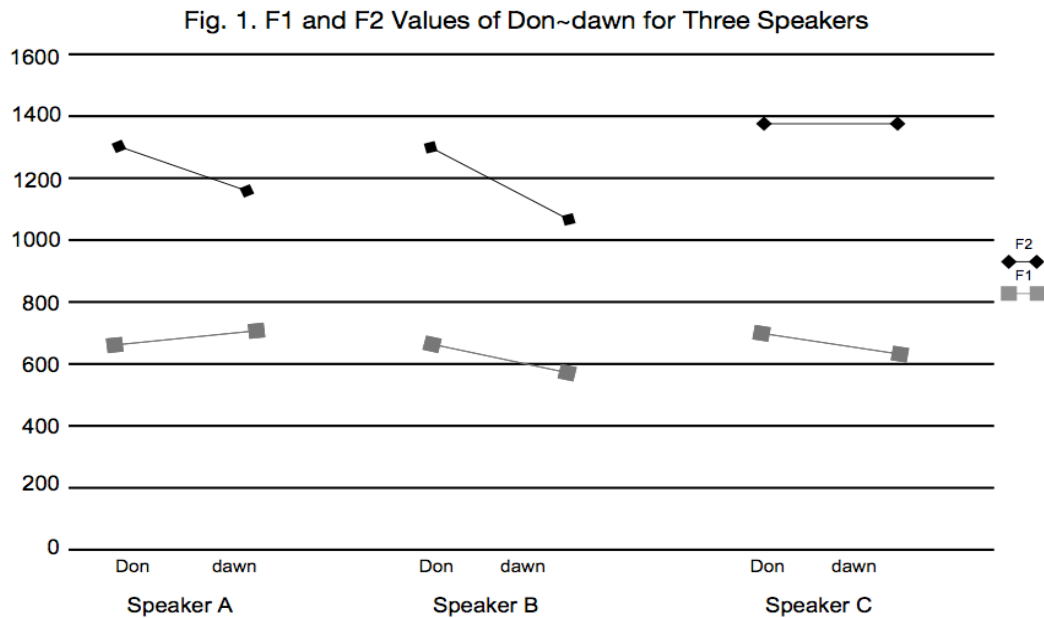
My hypothesis was that students’ responses would vary depending on their primary home region and which tape they heard. Specifically, I predicted that non-merging Northerners listening to Speaker A (on Tape 1), a merger from the Northwest who pronounced both target words as [d α n], would assume both words were intended as “Don” and reflect that perception in their answer. However, merging North Midlanders might hear either “Don” or “dawn” when listening to the same tape and reflect that ambiguity in randomly mixed responses. Southern Ohioans, I predicted, would interpret the second word as “Don” and respond accordingly. Their own typical pronunciation of both words as [d ɒ n] would presumably cause some confusion when they heard a pronunciation that did not match the phonetic shape, however shifting, of their own low back phonemes, and as a result their responses might reflect the most “logical” interpretation of the text in the absence of phonological certainty—in other words, the likelihood that Don’s arrival would cause more panic in the narrator than would the coming of morning.

Contrariwise, when [d ɒ n] was read in the passage (by Speaker B, from the Inland North, on Tape 2), I hypothesized that Northerners would hear their own “open oh” and respond in a way that reflected their hearing of “dawn”; and North Midlanders, aware of a distinction made by others if not by themselves, would accommodate to the Northern pattern and respond in a similar manner. Southern Ohioans, on the other hand, should vacillate in their perceptions between “Don” and “dawn,” again because of the closeness of / α / and / ɒ / in their highly variable phonological systems.

In Tape 3 of the story, the target words were both pronounced with the lower back rounded / ɒ / variant commonly heard in western Pennsylvania and southern Ohio (see Hankey, 1972; Thomas, 1989, 1996). Since this vowel is phonemic in eastern Canada, so that *Don* and *dawn* are homophonous but at a different height than they are in the North Midland (Kenyon & Knott, 1953; Lance, 1994), I asked a graduate student from Toronto (Speaker C) to read this third version of the story. (I chose not to use a southern Ohio voice in order to avoid potential listener bias caused by other local, and often stigmatized, pronunciations.) My hypothesis was that this intermediate low back vowel would cause some confusion in all three dialect groups, and that subjects’ responses would be based, even more than they might normally be, on the internal “logic” of the story. (It should be noted that this narrative logic might have influenced responses to all three tapes, of course, and some students commented on this likelihood in their responses, noting that either word might be appropriate but that Don’s coming made “more sense.” This will be discussed more later.) An “Other” group of respondents, all non-Ohioans, would presumably respond to all three tapes in varying patterns depending on their own home dialect regions.

Acoustic measurements for all three taped speakers’ pronunciation of *Don* and *dawn* were taken at the center of the vowel and averaged from three readings by each; they are displayed in Figure 1. F1 formant values correlate inversely with degree of vowel height; thus, the vowel in *dawn* is slightly higher than that of *Don* for Speakers B and C (F1 = 570 and 639 respectively for Speaker B, and 622 and 708 for Speaker C), but it is slightly lower for Speaker A (F1 = 690 for

dawn and 640 for *Don*). However, it is the F2 which is diagnostic for degree of frontness or backness; front vowels have high F2 values, while back vowels have low ones. Speaker B, from northern Indiana, clearly shows a lower F2 in *dawn* than in *Don* (F2 = 1037 and 1313 respectively), while Speaker A, from Oregon, backs the vowel only slightly for *dawn* (F2 = 1190 vs. 1296 for *Don*) and Speaker C, from Toronto, has identical formants for both words (F2 = 1365). Rounding of the back vowel also decreases both F1 and F2; thus Speaker B, who makes the phonemic distinction, has lower values for *dawn* in both formants.



Results and Discussion

Although not as definitively as predicted, the results of the survey generally supported the three hypotheses stated above (see Table 1). In response to Speaker A, who grew up in Oregon and has the classic “Third Dialect” merger (or near-merger) of /ɑ/ and /ɔ/ to /ɑ/, students from the traditionally Northern dialect area of Ohio (part of the “Inland North” on the Phonological Atlas maps of Labov, 1999 and Labov, Ash, & Boberg, 2006) almost unanimously interpreted the second target word (the “arriving” d-word) as *Don*, reflecting their own clear separation of the two vowels. Almost three-fourths of the North Midlanders (from Columbus and environs) also heard *Don*, more than expected in light of the fact that they tend to be mergers; if they were sensitive to the speaker’s similar merging of the vowels, they should have randomly heard *Don* or *dawn*. The “story logic” may have tipped the balance here, however, with the likelihood that the old boyfriend’s arrival would cause alarm prompting that response. The South Midlanders (from the southern third of the state, including Cincinnati, Chillicothe, and Athens) also interpreted the second word as *Don*, at a ratio of 4 to 1, possibly in response to the “story logic” but also reflecting a general phonemic ambiguity between /ɑ/ and /ɔ/ in this region. Although some merging occurs in this area, it tends to take the phonetic shape of the intermediate low back

Table 1

Interpretations of Target Word by Respondents' Region (N = 222)

	Speakers				Responses
Speaker A: dawn = [d a n]					
	Northern	North Midland	South Midland	Others	
Don	16	17	18	9	
Dawn	1	5	4	3	
Both	0	1	1	1	
Totals	17	23	23	13	
% Don	94.1%	73.9%	78.3%	69.2%	
% dawn	5.9%	21.7%	17.4%	23.1%	
Speaker B: dawn = [d ɔ n]					
	Northern	North Midland	South Midland	Others	
Don	7	11	9	4	
Dawn	10	13	11	5	
Both	0	3	3	0	
Totals	17	27	23	9	
% Don	41.2%	40.7%	39.1%	44.4%	
% dawn	58.8%	48.1%	47.8%	55.6%	
Speaker C: dawn = [d ɒ n]					
	Northern	North Midland	South Midland	Others	
Don	14	17	16	5	
Dawn	4	4	5	2	
Both	2	1	0	0	
Totals	20	22	21	7	
% Don	70.0%	77.3%	76.2%	71.4%	
% dawn	20.0%	18.2%	23.8%	28.6%	
Pop. Totals	55	61	76	30	
% of Total	24.8%	27.5%	34.2%	13.5%	

rounded vowel [ɒ], which is more likely to be phonemically interpreted as /ɔ/ (if my

Chillicothe students are representative of the area), with / ɑ / reserved for words in the FATHER lexical set as well as some newly shifting words containing the mid-central schwa (in the traditional STRUT lexical set) followed by / l /, such as *color*, which is variably homophonous with *collar* and *caller* in southern Ohio (Flanigan & Norris, 2000). Thus, the near-merger of Speaker A's vowels would be more likely to match the common Southern Ohioan vowel in *color* and *collar* and result in a preference for *Don* over *dawn* in this test. (See also Hankey, 1972; Kelley, 1997; Humphries, 1999; Williams, 1999 on the dominance of the rounded intermediate low back vowel in this region, even in merging populations; Hankey maintains that / ɒ / is the "best describer" of Eastern [he includes southeastern] Ohio speech.)³

Speaker B, who is from northern Indiana and has a distinction between / ɑ / and / ɔ /, was predicted to elicit a near-categorical response of *dawn*-type interpretations from the Northern subjects; however, their only 60:40 favoring of *dawn* may again reflect the semantic likelihood that Don would be a more surprising arrival than dawn. North Midlanders should have also heard *dawn* in higher numbers than they did, on the assumption that they would be aware of the Northern split even if they don't produce it; whether the story logic was again a contaminating factor can only be speculated on. Of interest, however, is the fact that three respondents wrote both words, commenting on the ambiguity they perceived in the speaker's pronunciation. Their wavering across dialect boundaries, rather than the speaker's (nonexistent) ambiguity, may in fact be a consequence of a developing awareness of other forms in a mixed dialect speech community like the university, a sensitivity noted by Labov and Ash (1997).⁴ South Midlanders, however, also vacillated fairly evenly between *Don* and *dawn* responses; Speaker B's use of the fully rounded vowel in *dawn* might have been interpreted as the intermediate vowel by those who maintain a split, while mergers of / ɑ / and / ɔ / to [ɑ] are frequent enough in the area to elicit a *Don*-type response. Three respondents in this group also wrote both words as possible, reflecting their uncertainty as to how to interpret the vowel.⁵

³ For the present, I will not discuss the "Other", i.e., the Out-of-State category of respondents since I have not analyzed it in detail. However, a number of Pittsburgh area students are in this category and their similar merging of vowels toward the intermediate / ɔ / may account for the larger ratio of *Don* responses found here also. (See Hankey, 1972 and McElhinny, 1999.)

⁴ Examples of responses reflecting ambiguity either of phonological perception or of semantic content were: "Have breakfast with Don at dawn." "If Don is the thing that came up, then you should choose between the two men. If dawn is what came up, then you should go to class, work, whatever." "It depends on whether you are referring to Don or dawn. Don—she should say hello and introduce her new boyfriend to him. Dawn—she could have kept better track of the time." "She should forget about Dawn or Don and hang out with her [new] boyfriend." "Either her boyfriend Don came or dawn came: the sun rose because they were out so long. It is too hard to tell because her pronunciation is the same, or nearly the same." "Uses Don and dawn, but it is hard to tell that there is a difference; second dawn could be either 'Don' or 'dawn'." "It sounds like a person from the Midwest, maybe even Ohio. If she is, I am guessing the Cincinnati area because she says 'Don' just like 'Dawn'. She seems to have what some might call Standard English." This last comment is particularly interesting in light of the observation by Strassel and Boberg (1996) that the / ɑ ~ ɔ / distinction has persisted in Cincinnati. It may be that the younger generation is hearing a shift toward the general Southern Ohio merger as increased in-migration from rural areas of Ohio and Kentucky affects the vowel system of this region. (See also Irons, 2007.)

⁵ It should be noted that a good deal of individual variation exists in the dialectally mixed Athens community and in southeastern Ohio in general. Of the two secretaries in the Linguistics department at

Speaker C, from Toronto, with the eastern Canadian merger to phonemic / ɒ /, elicited a return to *Don*-based responses in roughly three-fourths of the subjects in all three groups of Ohioans (and in the “Other” group as well). In this case, two Northerners were ambivalent in their choices, as was one North Midlander, suggesting that this intermediate vowel was not familiar to them. However, most subjects, including the out-of-state respondents, interpreted the vowel as closer to / ɑ /, whether they were mergers or splitters. Thus it appears that the “confusion” hypothesized to occur in all three regions by Speaker C was resolved in favor of *Don* by all, with results very similar to those obtained for Speaker A except for the Northern group, who responded rather more ambivalently to C than to A. As Herold (1997) and McElhinny (1999) have observed, the Third Dialect appears to be less homogeneous than had previously been thought, but the Toronto speaker’s merger and that of the Oregon speaker were both close enough to / ɑ / to trigger thoughts of the old boyfriend in all three groups. It is interesting to note, however, that one respondent listening to the Toronto speaker thought he was hearing Cincinnati because “she says ‘Don’ just like ‘Dawn’” (see footnote 4); this recognition of Southern Ohio’s similar merger was then linked by the writer to “Standard English”, again reflecting an awareness of the spreading trend toward merger.

Statistical tests applied to these results showed significant differences in the responses to the question “What do you think I should have done?” A Kruskal-Wallis ANOVA test found variation of response based on speaker to be significant ($p < .001$), reflecting the wide range of percentages seen in Table 1. However, a chi-square test on responses based on interpretation of the second target word as *dawn* was significant only for Speaker B (on Tape 2), whose clear distinction between the first-uttered *Don* and the second-uttered *dawn* (see Figure 1) was highly perceptible in all regions ($p < .001$).⁶

Ohio University (both lifelong local residents), one varies between / ɑ / in *color/collar* and / ɔ / in *caller* in words where the vowel precedes [-l] but merges the two vowels to / ɒ / before [-t, -n] (as in *cot/caught* and *don/dawn*), while the other merges the two to / ɒ / when the vowel precedes [-n] but to /ɑ / when it precedes [-t, -l]. Such mixed situations have also been noted by Thomas (1989) and Humphries (1999). Thomas (1989, 2001) has suggested that for speakers without “consistent” distinctions, all such variants should probably be considered allophones of a single phoneme, merged from two. However, / ɑ / is being extended to some words, like *color*, where the phoneme that appears to be shifting is / ʌ /, which is either lowered or backed; *color*, *doll*, *dull*, and *solve* have all been attested as moving in either direction but generally as a set. Wells (1982, p. 485) maintains that in “General American” / ʌ / is realized only as a “centralized back vowel, the fronted qualities ([a-] etc.) which are found in some parts of the south of England being unknown in North America.” However, Harold Paddock (personal communication) has attested that [k ɑ l ə r ~ k ʌ l ə r] is common in Newfoundland, and it is frequently heard in Athens County in southeastern Ohio.

⁶ The significant differences in perception of the target word as produced by different speakers support the contention reaffirmed recently by Frazer (1994, 1997), Johnson (1994), Flanigan (1996), and others that the Midland, and the South Midland in particular, constitutes a distinctive dialect area rather than being merely a “transition” zone between North and South (Davis & Houck, 1992), and also that it extends farther north into Ohio than Carver (1987) had suggested. The overlapping of this area with the area traditionally labeled “Appalachian” creates a wide range of variation in the South Midland, most notably in the pronunciation of the low back vowels but in grammar and lexicon as well (see Hartman, 1966; Clark, 1972; Dakin, 1971; Wetmore, 1971; Hankey, 1972; Wolfram & Christian, 1976; Montgomery, 1989; Kelley, 1997; Humphries, 1999).

A minimal pair test of contrasts and mergers in other / α ~ ɔ / words (such as *cot/caught* and *hock/hawk*) has also been given to several classes at Ohio University. Each student is asked to listen to a partner's pronunciation of a list of 16 (traditionally) minimal pairs and indicate whether the words in each pair sound the same, different, or "close." (See Appendix C.) The total number of "sames" out of 16 presumably indicates whether a speaker is a "merger" or a "non-merger" of / α / and / ɔ /. However, it has been found that listeners often "mishear," in some cases imposing their own merging or non-merging systems onto the speech of their partners. Although results of these combination production/perception tests have not been tabulated and analyzed, it is clear that, as in Labov, Karen, and Miller's (1991) commutation tests, subjects frequently misinterpret or reanalyze vowel systems that represent local changes those subjects may or may not be participating in themselves.

Conclusion

As in the earlier studies referred to above, the high degree of dialect contact present in a mixed community like that of a university (or in a demographically changing city like Philadelphia or New York) may lead to a confusion of interacting systems; only "outsiders," like Labov's non-Philadelphians, seem able to keep the competing systems distinct, and even they do not reach categorical agreement (Labov et al., 1991). In this study, as in the study by Flanigan and Norris (2000), undergraduates from different dialect area backgrounds become, to a degree, "semi-insiders" who are no longer sure of their own distinctive systems and in some cases unconsciously accommodate their systems to those of others, as others do to theirs. Only the self-acknowledged "Northerners" maintain clearly distinct systems in the minimal pair tests; but in the "Don/dawn" story test even they seem ambivalent when asked to respond to what should be an easy question in light of their non-merging of / α / and / ɔ /. We must conclude, with Labov and Ash (1997), that recognition by users of their own or other users' alternate variants is evident only to a limited degree in high-contact dialect areas like that of the typically diverse university community.

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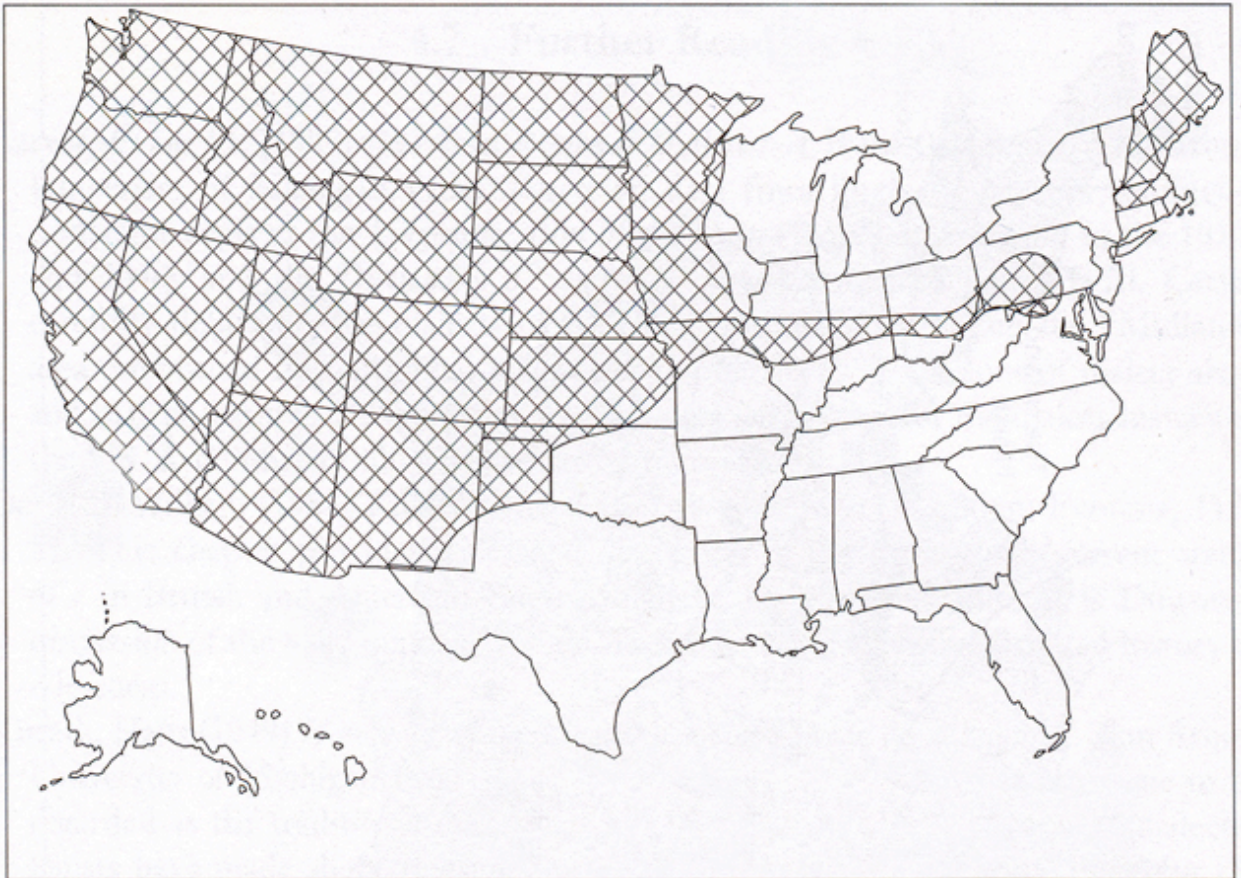
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Appendix A

Map 1

Spread of the “cot/caught” Merger



Checkered areas indicate where “cot” and “caught” are pronounced the same, usually as “cot.” (Source: Wolfram & Schilling-Estes, 1998, p. 121.)

Map 2
Dialect Divisions in Ohio



Proposed dialect boundaries for Ohio, with Northern, North Midland, and South Midland regions demarcated. (Source: Flanigan & Norris, 2000, p. 200.)

Appendix B

The Don/dawn Story Test*

Recently I was walking through the woods at night with my new boyfriend, talking about school, life, and other things. But as we talked I kept thinking about my old boyfriend *Don*. The night wore on, and soon I forgot about the past and let myself enjoy the present. Before we realized it, *dawn* arrived and took us by surprise. I didn't know what to do! What do YOU think I should have done?

* Target words are italicized.

Appendix C

/ɑ / ~ / ɔ / Production Test*

Directions: Choose a partner and pronounce the following pairs of words for each other. Each of you must decide whether the vowels in each pair are being pronounced the same or different (or close but not quite the same). Put an X in the appropriate column and then add up your "score." Your "merger index" will be your total number of "Sames" out of 16.

	Same	Different	Close		Same	Different	Close
1. sob/Saab	_____	_____	_____	2. fog/cog	_____	_____	_____
3. cot/caught	_____	_____	_____	4. Roz/gauze	_____	_____	_____
5. dawn/Don	_____	_____	_____	6. rot/wrought	_____	_____	_____
7. sock/Salk	_____	_____	_____	8. soggy/saga	_____	_____	_____
9. tot/taught	_____	_____	_____	10. bomb/balm	_____	_____	_____
11. Paul/jolly	_____	_____	_____	12. hock/hawk	_____	_____	_____
13. tock/talk	_____	_____	_____	14. raw/rah	_____	_____	_____
15. bawdy/body	_____	_____	_____	16. knotty/naughty	_____	_____	_____

Your "merger index" is _____ out of 16.

*Adapted from an instrument created by James M. Coady, Ohio University.