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## The Reversal of a Sound Change in Cincinnati

# The Reversal of a Sound Change in Cincinnati

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## 1 Introduction

One of the most important variables for characterizing and distinguishing American English dialects is the phoneme /æ/, or "short-a", the sound of *mat*, *mass* and *man*. Many dialects have two main allophones of /æ/: a tense [æh], characterized by phonetic raising along the outer perimeter of the vowel space and the development of a central in-glide; and a lax, monophthongal [æ] more or less in the position of cardinal [æ]. In some dialects these allophones have split into two phonemes. Labov (1991:12), in putting forth a tertiary typology of English dialects, calls this split one of two "pivot points" in American English.

Some of the oldest American dialects, those on the Atlantic Coast and in the South, have tense /æ/ in a restricted set of environments, most commonly before front nasals, voiceless fricatives and varying subsets of the voiced consonants. The tensing rule in some of these dialects also interacts with syllabicity. The dialect of the large industrial cities around the Great Lakes, known as the Northern Cities dialect, tenses in every environment. The speech of the West Coast exhibits tensing only and always before nasals, while Canadian English shows no tensing at all.

While /æ/-tensing has been thoroughly studied in Atlantic Coast dialects (Trager 1930, 1934, 1940, Cohen 1970, Ferguson 1975), and has been well described as part of the Northern Cities Shift, much less is known about the phonology and dialect geography of /æ/-tensing in the lower Midwest. This broad and populous region, intervening between the Northern Cities and the South, is part of the Midland of traditional American dialectology (Kurath 1949). The status of (æ) in most of the major Midland cities is virtually unknown. One of the oldest and largest of these cities is Cincinnati, located on the northern bank of the Ohio River, across from Kentucky, in southwestern Ohio. Preliminary research on Cincinnati phonology was carried out as part of a Telephone Survey of Change in Progress in North American English, or TELSUR, now underway at the Linguistics Lab of the University of Pennsylvania. The TELSUR data revealed a unique situation that demanded further study.

In the first major study of Cincinnati speech, part of which was presented at the 1995 Penn Linguistics Colloquium (Boberg and Strassel 1995), we examined a wide range of phonological, syntactic and lexical variables. Of the phonological variables, the most interesting proved to be short-a. Our data on this variable revealed not only a unique set of tensing environments, distinguishable from every other regional system hitherto described, but an apparent reversal of an earlier change toward tense short-a. As this finding, if confirmed, would represent one of the few documented cases of a historical change reversing its direction, we decided to study it in greater detail, using more data from a wider range of speakers. This expanded database would also allow us to resolve apparent discrepancies from the first study, particularly a lack of consistency among the youngest speakers.

## 2 Background and Methods

Our original study entailed interviews with fourteen native Cincinnatians in three age groups: young (under 30 years old), middle (31 to 50) and old (over 50), with two women and two men in each category. For this paper we added data from four Cincinnatians who had been interviewed for the TELSUR project, making a total of eighteen Cincinnati informants; a nineteenth Cincinnati was interviewed especially for this paper. We also examined eight interviews in nearby cities, many of which were supplied by the TELSUR project. In every case, the interviews consisted of a mix of formal elicitation tasks (such as word lists, minimal pairs and semantic differentials) and spontaneous speech. While our original analysis relied exclusively on formally elicited data, the present paper is based mostly on data from spontaneous speech.

The research for the present paper involved an impressionistic analysis of every available token of short-a from the spontaneous speech of each of our 19 Cincinnati informants and eight speakers from surrounding communities. We examined stressed and unstressed tokens alike, excluding vowels which were excessively reduced. Judgments of tense vs. lax were made by listening for the phonetic characteristics of raising and inglides normally associated with tense short-a. Cases that were too difficult to categorize or that the coders couldn't agree on were classed as indeterminate. In all, we rated over 1400 tokens of short-a, including the tokens from formal elicitation, an average of 54 tokens per speaker.

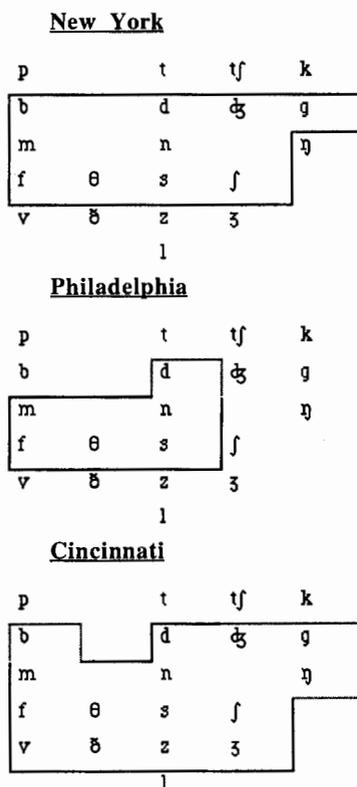
Cincinnati is a city of 360,000 people at the center of a metropolitan area of 1.7 million (1990 U.S. Census). It is the chief economic center of southwestern Ohio and also dominates adjacent areas of northern Kentucky and southeastern Indiana. The map at the end of this paper shows the location of Cincinnati with the surrounding communities involved in this study. Cincinnati and its suburbs are located on either side of the Ohio River. Forty-five miles to the north is the city of Dayton, a manufacturing center. Between Dayton and Cincinnati is the town of Hamilton. One hundred miles to the south is Lexington, the major city in central Kentucky, and a hundred miles to the southwest is Louisville, another river port.

In traditional dialect studies Cincinnati is placed in the Midland. The more recent approach of Carver (1987), shown on the map, puts Cincinnati on the border between North and South, which largely coincides with the Ohio River. In Carver's terms, Cincinnati is in the Lower North, a region settled primarily from Pennsylvania and the Middle Atlantic region. Owing to Cincinnati's location, its population also includes an admixture of settlers from the Appalachian South. In spite of the city's being across the river from Kentucky, however, our previous study found that the speech of Cincinnati was demonstrably not southern: Cincinnatians, for example, generally distinguish the vowels of *pin* and *pen* and retain the glide in the diphthong /ay/. Moreover, the set of vowel shifts that creates the effect of a so-called southern "drawl" can be observed only to a moderate extent in Cincinnati.

### 3 Cincinnati /æ/: the traditional pattern

On the basis of a thorough examination of spontaneous speech in conjunction with formally elicited data we can say with confidence that the traditional Cincinnati short-a pattern is similar to that of New York City, but remains distinct in some ways. In New York, short-a is generally tense before front nasals, voiced stops and voiceless fricatives, but lax before voiceless stops. The New York pattern is summarized below in Figure 1.

**Figure 1: Short-a tensing environments in three cities**  
(Adapted from Labov 1994: 520)



As can be seen in Figure 1, our spontaneous speech data shows that older Cincinnatians follow this pattern quite closely, with the addition of voiced fricatives as a tensing environment. No regularly apparent style-shifting between formal elicitation tasks and spontaneous speech was observed, though a few ambiguities remain in the less common environments. For instance, short-a before velar nasals was often recorded as indeterminate and our data on voiced stops other than /d/ is too thin to merit any strong conclusions; the little data we did obtain on /g/ and /b/ shows a variable pattern. However, the regularity of the tensing before /d/ and the inclusion of the palatal voiceless fricative among the tensing environments make the Cincinnati pattern look more like New York's than Philadelphia's (refer again to Figure 1 above). Moreover, the exclusion of voiceless stops as a tensing environment shows a noteworthy divergence from the prevalent pattern in the northern Midwest, while the inclusion of environments other than nasals clearly separates Cincinnati from the West.

While the similarities between the New York City and Cincinnati short-a systems are remarkable, there are also important differences. One of these concerns function words like *am* and *and*. While these words have a following nasal and should therefore be tense, they normally have reduced vowels in connected speech and so are lax in East Coast short-a systems, even when they do appear with full stress (Cohen 1970). In Cincinnati, function words are tensed like any other words with a following nasal: the morphological exception has been levelled in favor of phonetic regularity.

The second difference between Cincinnati and the East Coast systems is in the effect of syllable structure. In New York and Philadelphia, the tensing rule only operates when an appropriate consonant is in the coda of the syllable containing the short-a; with some morphological exceptions, short-a in open syllables is not generally tensed, giving an alternation between *ham*, with a tense vowel, and *hammer*, with a lax vowel. This tautosyllabic constraint, like the class of morphological exceptions, has for the most part been done away with in Cincinnati, again in favor of phonetic regularity. Only one speaker, GeorgeK, who at 68 is one of our oldest informants, showed any trace of a tautosyllabic constraint, producing *manner* and *family* with lax vowels but *pants*, *canvas* and *ham*, for example, with tense vowels. He also pronounced *anathema* with a lax vowel but had tense vowels before tautosyllabic voiceless fricatives. It is possible that he represents the last remnant of a true East Coast pattern in this respect, perhaps the original Cincinnati pattern that held sway before levelling occurred. Interestingly, GeorgeK had one tense and one lax token of *catholic*. This variation is likely due to the variable presence of a medial schwa, which determines whether the syllable containing short-a is open or closed. The variable pronunciation is surprising in light of the finding of Ferguson (1975: 265) and Kiparsky (1989: 401) that the absence of a medial schwa did not affect the lax [æ] in words like *family*, *catholic* and *camera*.

Given that Cincinnati has what amounts to a regularized East Coast short-a pattern, it is mysterious that this pattern is more similar to New York's than to Philadelphia's. The settlement history of the North Midland region indicates overwhelming influence from Pennsylvania rather than from New York. Moreover, Labov (1994:535-36) points out that the Philadelphia pattern is probably closer to the original American short-a pattern than that of New York. It would seem strange that Cincinnati and New York innovated in the same direction independently.

The next question to consider about the traditional Cincinnati pattern is its regional distribution outside Cincinnati. The limited data available in our previous report had relatively little to say on this point. Having examined the formal and spontaneous speech of five speakers in nearby Ohio communities and three in Kentucky, we can say that the traditional Cincinnati short-a pattern is only found in greater Cincinnati. It is most remarkably not shared with the smaller city of Dayton, to the north. Our three Dayton

informants, all in their forties, produced virtually no tokens of tense short-a other than before nasals, a western system. By contrast, Cincinnatians in their forties either have the eastern pattern referred to above or show variation; none of the middle group of Cincinnatians has a pure western system. Our data from Hamilton, a smaller town between Cincinnati and Dayton and actually within the Cincinnati Consolidated Metropolitan Area as defined by the U.S. Census, is less clear because both of our Hamilton informants are younger than forty. However, both the 20-year-old and the 34-year-old have western systems with no trace of the traditional Cincinnati pattern.

In Kentucky we find a southern rather than a western system. Both our Louisville informant and our older Lexington informant have tense short-a almost everywhere. Whereas in Cincinnati voiceless stops as a whole are excluded from the tensing environment, in Kentucky only /k/ regularly blocks tensing. While the Kentucky system is not as strikingly different from that of Cincinnati as the western system we found in Dayton, it is nonetheless not the same system. As a result, we must conclude that Cincinnati's short-a pattern is not a regional feature but a unique feature of urban Cincinnati, much as the systems of Philadelphia and New York are identified uniquely with those cities. This finding supports the central theme of Labov, Ash and Boberg (1995): while we observe extraordinary uniformity in speech over the whole Northern Cities region, the cities of the North Midland region are remarkable instead for their diversity.

#### 4 Cincinnati /æ/: the emerging pattern

The Cincinnati short-a pattern just described was considered traditional because it was observed consistently in the oldest group of speakers and relatively consistently, though with some variation, in the middle group. As for the youngest group, our previous paper reported some puzzling ambiguities. Two of the young women showed some tensing in the traditional environments, one as much as the oldest group. A third young woman and both of the young men, however, tensed only before nasals. It looked as though we were witnessing a change in progress away from the traditional eastern system to an emergent western system. However, we were left wondering whether this change was a primarily male phenomenon, or whether it might be due to dialect mixture, given that the young woman who showed variable tensing had one parent from Dayton (a city which, as noted above, has the western pattern of tensing only before nasals). An analysis of larger quantities of data from spontaneous speech and the addition of another young female speaker clarified the picture. The results of this analysis can be seen in Figure 2 on the following page.

MarissaS, one of the three girls who showed some of the traditional tensing pattern, turned out to be a non-tenser: the variability had arisen from a single tense short-a in the word *dad* (which due to its position between two coronals is phonetically the most likely to be tensed) and tensing was not extended into other environments in spontaneous speech. It was MarissaS, however, who we speculated might have been influenced by having a parent from Dayton. The new informant, JodiA, was selected for having both parents from Cincinnati and showed a categorical western system with no tensing except before nasals.

Figure 2: Short-a tensing environments for 19 Cincinnati informants

**Environment**

	/n,m/	/d/	+vcd fric	-vcd fric	/l/	-vcd
<b>stop</b>						
<b>Speaker</b>						
KerM, 17	T	T	T	T	L	L
AnneT, 18	T	T	I	T	L	L
JodiA, 18	T	L	L	L	L	L
AmyR, 18	T	L	n/a	L	n/a	L
MarissaS, 18	T	I	L	L	L	L
DavidH, 23	T	L	L	L	L	L
GregS, 23	T	L	n/a	L	L	L
-----						
LindaH, 40	T	I	L	L	L	L
SharonM, 43	T	T	T	T	L	L
CarolS, 47	T	T	I	L	n/a	L
JerryH, Jr., 40	T	I	T	T	L	L
BruceL, 44	T	T	I	T	n/a	L
GaryS, 46	T	T	T	T	n/a	L
-----						
PatM, 57(f)	T	T	T	T	L	L
LoisM, 58	T	T	T	T	L	L
JoyH, 63	T	T	T	T	L	L
MarilynS, 63	T	T	T	T	n/a	L
JerryH, Sr., 68	T	T	T	T	n/a	L
GeorgeK, 68	T	T	T	T	L	L

**Key: T=Tense L=Lax I=Indeterminate n/a=no data**

- Notes: a) There was not enough data available for /b/ and /g/ to categorize their status with relation to the tensing of short-a.  
 b) Of 37 tokens preceding a velar nasal, 20 were judged to be indeterminate and the remainder were split between lax and tense. Acoustic analysis will be adopted in future studies to resolve this uncertainty.

The evidence from JodiA confirms not only that the change is taking place among truly native young Cincinnatians but also that females participate in it as much as males. We now have only two of seven young people who show the traditional pattern of tensing. These individuals must be regarded as conservative in light of the behavior of the majority of young speakers. Given the stability of the vernacular once it has been acquired, it seems highly unlikely that young speakers with a western short-a pattern will revert to the traditional Cincinnati pattern later on in adulthood. We must therefore conclude that the traditional Cincinnati short-a pattern is being replaced by an emergent western system. Among a majority of the young, this change has already reached completion: those with the western system exhibit no significant stylistic variation. In terms of Labov's (1991) "three

dialects of English", young Cincinnatians are making a transition from the second to the third dialect. A developing merger of *cot* and *caught*, reported in Boberg and Strassel (1995), further confirms this transition.

It is interesting to note that we found signs of a similar change in progress in Lexington, Kentucky. We mentioned earlier that our 43-year-old Lexington speaker shared with our Louisville speaker a southern tensing pattern which had consistently lax short-a only before /k/. Our second Lexington speaker, however, a teenage girl, was radically different. Like most of her contemporaries in Cincinnati, she had eliminated tense short-a except before nasals, the emergent western system. While we do not have sufficient data to draw any firm conclusions about change outside Cincinnati, it may be that while the traditional Cincinnati short-a pattern we discovered is limited in its distribution to the city of Cincinnati, the change toward a western system may be a regional phenomenon not restricted to Cincinnati.

## 5 The Reversal of a Sound Change

In order to comprehend the significance of the recession of short-a tensing in Cincinnati, this development should be viewed in a national context. In every other community where this variable has been studied, the tensing of short-a has been seen as an active change in progress in American English. In Illinois, for example, Callary (1975) examines the diffusion of tense short-a from Chicago outwards into smaller communities. Labov (1966) showed tense short-a to be an advancing variant in New York City. In Philadelphia, Labov's work shows that the highest phonetic values of tense short-a are associated with speakers who are advanced in other sociolinguistic variables (1994: 502 *ff.*), while Roberts and Labov (1993) demonstrate that environments for tense short-a in Philadelphia are expanding rather than contracting.

In light of this general trend toward tense short-a in the nation as a whole, the recession of tense short-a in Cincinnati is remarkable. It is all the more surprising because it implies an actual reversal of an earlier change in which Cincinnati must have participated along with New York and Philadelphia. Our final task, then, is to consider a few potential explanations of why Cincinnati should differentiate itself in this way.

First of all, Cincinnati's relatively long history (it was founded in 1788 and incorporated in 1819) may have made it the furthest western extent of basically Eastern speech. Recent trends and the growth of the Midwest as a distinct region may have shifted the city's orientation, with the result that modern language patterns are established on a more midwestern basis: the old eastern system is gradually eroding as Cincinnatians become more integrated with the rest of the Midwest. In fact, when asked about regional identification, the vast majority of our original sample identified Cincinnati as a Midwestern city and themselves as Midwesterners.

Second, dialect mixture. It could be that the suburban growth and regional integration of the Cincinnati economy, together with a decline in industry in surrounding communities, is causing demographic shifts which are breaking down the unique features of the traditional urban Cincinnati dialect. A large influx of workers from Hamilton and Dayton, for instance, or the development of those centers into bedroom communities for people who commute to work in Cincinnati, might have this effect.

Third, media influence. We are wary of attributing any kind of language change to the influence of mass media, but in searching for a model for the behavior of young Cincinnatians we have to look beyond neighboring regions. If young Cincinnatians are imitating the speech of some other dialect, they cannot be looking to the Northern Cities or the South, both of which have tense short-a in more environments than older

Cincinnatians. Furthermore, there are no centers in central Ohio influential enough to serve as a model for Cincinnati speech. They must be looking, if anywhere, to the west. It happens that two of the major phonological changes among young Cincinnatians, the western short-a pattern and the *cot-caught* merger, are marked features of California speech, which has gained national prominence through the mass media. This argument is very tenuous, however, and not only because we know that unidirectional communication via television and radio tends to have a limited effect on local vernaculars. It also fails to explain why Cincinnatians should be affected by mass media more than other cities.

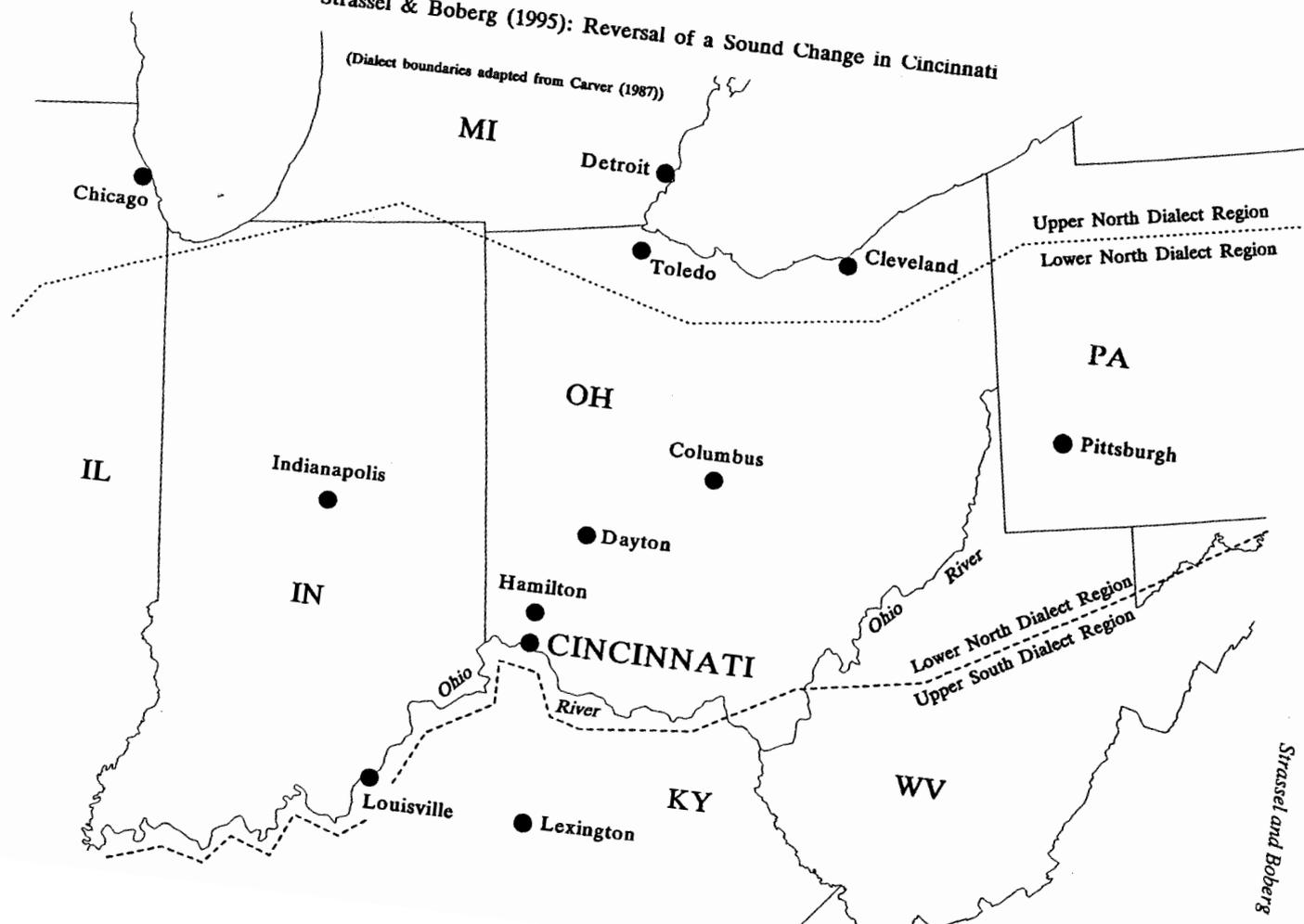
Fourth, young Cincinnatians, most of whom reported frequent travel to Kentucky, are aware at some level of the prevalence of tense short-a in southern speech and may be differentiating themselves as northern urbanites from the rural and rustic associations of the speech of Kentucky. In this vein, the apparent conservatism of two of the youngest speakers may be part of a class distinction in Cincinnati that is still reflected to some extent in the division between the city's East and West Sides. Both of the young women who have the traditional pattern of tense short-a are from the West Side, the more traditional, working class, German part of town in which many originally Appalachian families still reside. A firm conclusion about the class or neighborhood differences within Cincinnati would require a wider survey.

Fifth, internal linguistic motivation. The emergence of a western short-a pattern to replace the traditional Cincinnati pattern must be seen as a simplification of the rule system. Instead of specifying a subset of oral consonants which condition tensing, the new system singles out the phonetically natural class of nasal consonants as a unique and categorical tensing environment. To the extent that we believe that simplification is a natural or unmarked process in language change, this development in Cincinnati must be viewed as linguistically natural. This explanation, however, does not evade the old actuation problem: why should this simplification take root in Cincinnati and not in other communities? Each possibility discussed here could be taken as an avenue for further research.

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Strassel & Boberg (1995): Reversal of a Sound Change in Cincinnati  
(Dialect boundaries adapted from Carver (1987))



*Sound Change in Cincinnati*

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