"CANADIAN RAISING" IN SOME DIALECTS OF THE NORTHERN UNITED STATES

TIMOTHY J. VANCE
University of Hawaii at Manoa

THE PRONUNCIATION OF ONTARIO ENGLISH, according to Joos (1942, 141) is nearly identical to that of GENERAL AMERICAN. He notes only two differences of any consequence, and his discussion focuses on one of these, namely the existence of two variants for the diphthongs /ay/ and /aw/ in Ontario. As Joos describes it, the basic Canadian pattern is that these diphthongs have higher starting points before voiceless consonants than in other environments. The examples in (1) illustrate.[1]

1. *sight* [sʌit] *clout* [klʌut]
   side [said] *cloud* [klaud]

General American speakers, says Joos, have [ai] in both *sight* and *side* and [au] in both *clout* and *cloud*. Chambers (1973, 113) attributes the higher starting points before voiceless consonants to a rule which he calls CANADIAN RAISING, but as he is careful to point out, the phenomenon is not confined to Canada.

Householder (1983, 7) suggests that the Canadian border is in fact the isogloss for the higher diphthongs, and this is consistent with Joos's (1942, 141) claim that speakers in rural New York and Wisconsin have the lower diphthongs in all environments. Maps 26–29 in Kurath and McDavid (1961), however, show several locations in upstate New York with a higher variant of /aw/ in *mountain* and/or *out* and even more locations with a higher variant of /ay/ in *nine* and/or *twice*. The higher /ay/ in *twice* is particularly common. It has been my experience that a higher variant of /ay/ before voiceless consonants is now widespread in the cities of the region labeled INLAND NORTHERN by Baugh and Cable (1978, 370), which extends from western New England across the Great Lakes. In particular, I have lived for extended periods in Minneapolis, Chicago, and Rochester (New York), and a higher variant of /ay/ is certainly the norm in all three cities for middle-class speakers of my own postwar "baby boom" generation as well as my parents' generation. On the other hand, a parallel higher variant of /aw/ is not general for such speakers. It seems to occur only before /s/ in such words as *house* and *mouse* in my own speech.[2]

As Chambers (1973, 129–34) notes, higher variants of both /ay/ and

/aw/ are also found in the southeastern United States (e.g., in Tidewater Virginia and around Charleston, South Carolina; see also Kurath and McDavid 1961, maps 27 and 29) and on Martha's Vineyard off the coast of eastern Massachusetts. Labov (1963, 281–82) argues that /ay/ had a higher starting point in all environments in North America until well into the nineteenth century. He also notes that the records of the *Linguistic Atlas of New England* (Kurath et al. 1941) show the higher variant surviving in rural New England and in the Genesee Valley of western New York. It also survived before voiceless consonants in the South. The history of /aw/, Labov says, was different. For one thing, /aw/ seems to have lowered considerably earlier than /ay/ in England. The *Linguistic Atlas of New England* records show something like [ʌu] only in a few locations in upstate New York and (before voiceless consonants) in Virginia. As Labov's well-known work (1963, 1972) shows, of course, there was considerable movement toward [ʌu] on Martha's Vineyard in the thirty years after the fieldwork for the *Linguistic Atlas of New England* was done.

There are no speakers from Minneapolis or Chicago represented in Kurath and McDavid (1961), but there is a synopsis for a Rochester speaker. This speaker apparently showed no tendency toward higher diphthongs before voiceless consonants, but she was 65 years old when McDavid interviewed her in 1949 (Kurath and McDavid 1961, 24). This means a difference of two or three generations between this speaker and the speakers I am most likely to interact with. In addition, the speakers McDavid chose for interviews were intended to be models of "cultivated speech," and Kurath and McDavid (1961, 16) suggest that higher diphthongs were common for speakers from other social groups in the region. It is therefore not clear to me whether the existence of two variants of /ay/ in Rochester and other northern cities of the United States reflects a relatively recent raising before voiceless consonants or an older lowering in the complementary environment. I also do not know whether upper-class Rochester speakers still maintain the pronunciation with a single variant.

Joos (1942, 142) argues that whatever the original quality of the /ay/ and /aw/ diphthongs may have been, the two variants of each in Canadian English are a phonetically natural development from an original length difference. It is widely known, of course, that English vowel nuclei are shorter before voiceless consonants than before voiced consonants (Peterson and Lehiste 1960; Hyman 1975, 172). Joos makes the plausible suggestion that a shorter duration favors a less dramatic movement in tongue position from the beginning to the end of a diphthong, and clearly a higher starting point for /ay/ or /aw/ leaves a shorter distance to the endpoint.

DATA COLLECTION. I collected the data I will consider here while on vacation in Rochester in 1975. I first compiled a list of 504 words (including many compounds) containing /ay/ and then elicited judgments from three speakers as to whether the diphthong in each item was [ai] or [ʌi]. For 446 of the 504 words, each of the three speakers had a clear intuition about which variant was correct.[3] In the remaining 58 cases, one or more of the speakers either could not decide whether [ai] or [ʌi] was correct or simply did not know the word.

I used myself (TV) as one speaker because I had noticed some peculiarities in the distribution of the two variants of /ay/ in my own speech. I was born in Minneapolis in 1951 and lived there until age 12. I then lived for just over two years in Bethesda, Maryland, a suburb of Washington. I am quite certain that the norm for /ay/ among my junior-high-school peers was [ai] in all environments, and I suspected that this was the cause of the peculiarities I had noticed. I subsequently lived in Rochester until graduation from high school, and I spent summers there while attending college in St. Louis. I was a graduate student living in Chicago when I collected the data.

The second speaker (JV) was my mother, who was born in rural Minnesota near Fergus Falls in 1930 and moved to Minneapolis at age 17 to attend college. She, too, spent just over two years in Bethesda, but was 33 at the time of the move, and I suspected that her pronunciation was less affected by the experience than my own. When I interviewed her, she had lived in Rochester continuously since 1965.

The third speaker (NR), a high-school classmate of mine, was born in Rochester in 1951 and had been away for extended periods only to attend college in Northampton, Massachusetts. I assumed that she would show a pristine Rochester distribution of the variants of /ay/.[4]

DISTRIBUTION OF THE VARIANTS OF /ay/. I have mentioned several times already that the higher variant of /ay/ generally occurs before voiceless consonants in the dialects under consideration, but a careful look at the data makes it clear that this statement of distribution is only approximate. I will first consider cases of [ai] before voiceless consonants and then consider cases of [ʌi] in environments other than before voiceless consonants.

Chambers (1973, 116–17) notes that the higher variant generally does not occur in Canadian English when the voiceless consonant of the environment follows the boundary in a compound. This was also true for my speakers. For example, the words *dry#clean, eye#piece,* and *fly#swatter* all have the COMPOUND STRESS PATTERN (i.e., main stress on the first element), and all three of my speakers gave [ai] for the diphthong in each

word. On the other hand, there are two exceptions to this generalization about compounds. Chambers says that a minority of his Canadian informants had [ʌi] in *high#school,* and all three of my speakers pronounced it this way. My speakers also had [ʌi] in *high#chair.* This anomaly is apparently restricted to these two items; even other compounds with *high* as the first element, such as *High#Point* (the city in North Carolina) and *high#tops* (a kind of athletic shoes), have [ai].

Chambers (1973, 124–27) also notes that the lower variant of /ay/ generally occurs before a voiceless consonant in Canadian English when the syllable containing /ay/ does not carry the main stress and the immediately following syllable is stressed to some degree. Some of his examples are given in table 1 along with the judgments of my three speakers. (A question mark indicates that the speaker was uncertain.) The examples in table 2 are from my data and have the same stress pattern as those in table 1. With the exception of *micrómeter,* my Rochester speaker (NR) conformed to the generalization in question. JV and TV were less consistent, with a good deal of uncertainty in their intuitions. As Chambers points out, this stress-related tendency gives rise to alternations between the two variants of /ay/ in morphologically related words. For example, my speakers all had [ʌi] in *psýche* (cf. *psychólogy*), *cíte* (cf. *citátion*), and *vítal* (cf. *vitálity*).

Chambers (1973, 125–26) compares *biséxual,* in which his Canadian informants had [ai], with *bícycle,* in which they had [ʌi]. He says that these

TABLE 1
Informant Judgments for Chambers' Data (1973, 124–27)

	NR	JV	TV		NR	JV	TV
citátion	ai	ai	?	*isósceles*	ai	ʌi	?
dichótomy	ai	ai	ai	*micrómeter*	ʌi	ʌi	?
hypótenuse	ai	ai	?	*psychólogy*	ai	?	?

TABLE 2
Informant Judgments for Words
Having Same Stress Pattern as Chambers' Data (1973, 124–27)

	NR	JV	TV		NR	JV	TV
bicárbonate	ai	ai	ai	*mitósis*	ai	ai	ai
disúlfide	ai	ai	ai	*psychótic*	ai	?	?
icónic	ai	ai	ai	*tycóon*	ai	?	ai
itínerary	ai	ʌi	?	*typhóon*	ai	?	ai
itálics	ai	ʌi	ai	*vitúperate*	ai	?	?
licéntious	ai	ai	?	*vitálity*	ai	?	ai

two words share the same prefix+stem pattern, and he uses the contrast to argue that the conditioning factor is the stress pattern rather than the morphological structure. However, the responses from my speakers indicate that morphological structure is in fact relevant for them. In the words *bíceps, bífocals, trípod,* and *víscount,* the main stress is on the prefix (i.e., the syllable containing the diphthong), but all three of my speakers had [ai] in all four words. Two of my speakers also had [ai] in *dípole,* a word unfamiliar to the third speaker. McCarthy (1982, 586) mentions [ai] in *bicenténnial* and *trisyllábic,* and another example of this kind is *anti-Semític,* in which all three of my speakers had [ai]. Although the syllable containing the diphthong in each of these last three items does not carry the main stress, the immediately following syllable is not stressed. These three words are therefore not covered by the stress-pattern condition given above.

McCarthy (1982, 585–86), following Kiparsky (1979, 440), suggests that [ai] occurs before a voiceless consonant when a STRESS-NEUTRAL boundary intervenes.[5] The problem with this proposal is that a particular prefix cannot be specified once and for all as stress-neutral or not. The prefixes *bi-* and *tri-* are stress-neutral in *bicenténnial* and *trisyllábic,* but not in *bícycle* and *trícycle.* My three speakers all had [ʌi] in these last two words. If a single affix can be stress-neutral in some words and stress-determining in others, McCarthy's suggestion will work for *bícycle* and *trícycle.* It appears, however, that two distinct boundaries are actually necessary in the stress-determining cases. To see why, it is sufficient to compare *bícycle* with *bífocals* and *bicúspid.* In *bicúspid* the prefix is stress-neutral, and all three of my speakers had [ai]. In *bícycle* and *bífocals* the main stress appears on the prefix, and as noted above, all three speakers had [ʌi] in *bícycle.* In *bífocals,* on the other hand, all three had [ai]. There is, of course, an obvious difference between *bícycle* and *bífocals.* In *bícycle* the first vowel of the stem is different from the corresponding vowel in *cýcle,* but in *bífocals* the first vowel in the stem is the same as the corresponding vowel in *fócal.* Intuitively, the prefix and stem are more tightly unified in *bícycle* than in *bífocals,* and this suggests that a three-way boundary distinction is necessary to save McCarthy's generalization: stress-neutral (*bicúspid*), loose stress-determining (*bífocals*), and tight stress-determining (*bícycle*).

Even when morphological structure and stress pattern are taken into account, a residue of exceptions remains. Each of my speakers had [ai] in a few items for which there is no apparent regularity. I give a complete list of the relevant items in table 3. (A dash indicates that the speaker did not know the word.)

TABLE 3
Informant Judgments: Exceptions

	NR	JV	TV		NR	JV	TV
*bíson**	ʌi	ai	ai	*líke*	ʌi	ʌi	ai
colítis	ʌi	ʌi	ai	*neurítis*	ʌi	ʌi	ai
*Cýclops***	ai	ai	?	*níce*	ʌi	ai	ai
Elísha	—	ai	ai	*nítrate*	ʌi	ai	ʌi
glýcogen	ʌi	ai	ai	*pýthon*	ai	ai	ai
ícon	ai	ai	ai	*stípend*	ʌi	ai	ai

*NR had either [bʌisn̩] or [baizn̩], but JV and TV had [baisn̩].

**Chambers (1973, 117) notes that some of his Canadian informants also had [ai] in *Cyclops*.

I now turn to examples of [ʌi] in environments other than before a voiceless consonant. One large group of such examples consists of words in which /ay/ is immediately followed by /r/. All three of my speakers agreed that the following words have [ʌi]: *fire, firing, fiery, inquire, iris, inspire, Ireland, Irish, iron, pirate, spiral, tired, wire,* and *wiry.* It is clear from these examples that, in the dialects under consideration here, /ay/ before /r/ tends to be [ʌi]. This is true whether or not the /r/ is syllabic. For example, compare *iris,* with nonsyllabic /r/, and *iron,* with syllabic /r/.

On the other hand, there are also several words in which all three of my speakers had [ai] before /r/. The complete list of such examples is as follows: *briar, crier, diary, flier, friar, gyrate, higher, liar.*

In *crier, flier, higher,* and *liar,* of course, /ay/ is followed by a morpheme boundary. In *briar* and *friar,* however, there is no boundary unless we posit some sort of folk reanalysis. The ordinary pronunciation of *diary* for my three speakers has only two syllables, but perhaps we can attribute the [ai] to an alternative three-syllable pronunciation in which the second syllable is schwa: *di$a$ry.* Aside from *gyrate,* the *Vr* spellings of these words indicate that the /r/ has been in a separate syllable ever since English spelling was codified. Although words like *fire* and *wire* in the all-[ʌi] list clearly have two syllables in my own pronunciation, the *re* spellings indicate that they were monosyllables at some point in the past. Notice also that *fiery* and *wiry* allow a two-syllable pronunciation, whereas *briary* does not. I have no suggestions to offer for *gyrate.*

As I noted above in connection with the examples in tables 1 and 2, my Rochester speaker (NR) conformed almost perfectly to the stress-pattern generalization concerning [ai] before voiceless consonants. To reiterate, when the syllable containing /ay/ does not carry the main stress and the immediately following syllable is stressed to some degree, her responses

generally had [ai] even before voiceless consonants. The parallel generalization for /ay/ before /r/ seems to hold, but the only two relevant words in my data are *irónic* and *iráte*. Both NR and JV had [ai] in these two words, whereas both had [ʌi] in *írony* and *íre*.

The words in my data containing the sequence /ayr/ and not listed above are given in table 4; for all these examples there was some disagreement among my speakers or some uncertainty in judgments.

There are a few examples of [ʌi] before voiced stops in my data. A complete list of these is given in table 5. In each example in table 5, /ay/ is in the syllable that bears the main stress, and the following syllable is unstressed and contains a liquid. The other words in my data with the same characteristics are listed in table 6.

In *cider, idle,* and *spider,* of course, the /d/ is usually pronounced as a flap rather than as a stop, but [d] is certainly possible in very careful pronunciation. It is widely believed that flapping simply neutralizes the distinction between /d/ and /t/, although careful phonetic studies have

TABLE 4
Words in /ayr/ for Which Informants Expressed Uncertainty and/or Disagreement

	NR	JV	TV		NR	JV	TV
admire	ʌi	?	?	*irate*	ai	ai	?
choir	ʌi	?	ʌi	*ire*	ʌi	ʌi	ai
conspire	ʌi	ʌi	?	*ironic*	ai	ai	?
desire	ʌi	ʌi	?	*irony*	ʌi	ʌi	ai
dire	ai	?	ai	*lyre*	ʌi	ʌi	ai
empire	ʌi	?	ʌi	*mire*	ʌi	ʌi	?
entire	ʌi	?	ʌi	*pyre*	ʌi	ʌi	ai
esquire	ʌi	?	?	*pyromaniac*	ʌi	ai	?
gyroscope	ʌi	ai	ai	*sire*	ʌi	ai	ai
hieroglyph	ʌi	ai	?	*spire*	ʌi	ʌi	?
hire	ʌi	ʌi	ai	*tire*	ʌi	?	ʌi

TABLE 5
Words with [ʌi] Before Voiced Stops for One or More Informants

	NR	JV	TV
cíder	ʌi	ai	?
ídle	ai	ʌi	ai
spíder	ʌi	ʌi	ʌi
tíger	ʌi	?	ʌi

TABLE 6
Other Words in Data with Stressed /ay/ Followed by Unstressed Syllable with a Liquid

	NR	JV	TV		NR	JV	TV
bíble	ai	ai	ai	*ídol*	ai	ai	ai
brídle	ai	ai	ai	*líbel*	ai	ai	ai
fíber	ai	?	ai	*Níger*	ai	ai	ai
híbernate	ai	ai	?				

shown this to be an oversimplification (Fisher and Hirsh 1976, Fox and Terbeek 1977). In any case, it is tempting to attribute [ʌi] before a /d/ that is usually flapped to the influence of words containing a /t/ that is usually flapped. For example, all three of my speakers had [ʌi] in words like *miter* and *title*. This suggestion is, of course, irrelevant in the case of *tiger*.

The putative merger of /t/ and /d/ as a voiced flap under certain conditions is centrally involved in the most celebrated examples of [ʌi] in an environment other than before a voiceless consonant. Joos (1942, 143–44) says that when the /t/ in a word like *writer* merges with /d/, some Canadians maintain the [ʌi] of *write* while others have [ai].[6] According to Chambers (1973, 122), the subdialect with [ai] has since disappeared, that is, all HEARTLAND CANADIAN speakers now have [ʌi] in *writer*. In parallel fashion, speakers of the northern United States dialects under consideration here have [ʌi] in words like *writer*, even when the /t/ is flapped. As a result, there is always a distinction between *writer* and *rider*—*writer* has the [ʌi] of *write*, and *rider* has the [ai] of *ride*.

PHONEMIC STATUS. Halle (1962, 63) uses examples like *writer* vs. *rider* to argue for the necessity of ordered rules, and Chomsky (1964, 90–91, 96, 99) uses the same data to argue against traditional phonemic representation.[7] In particular, Chomsky says that examples like *writer* versus *rider* involve a violation of what is known as LINEARITY. Chomsky assumes that *write* and *ride* have underlying representations which differ only in the voicing of the final consonants. If, as Chambers (1973) assumes, the quality of the diphthong in *write* is due to a raising rule, the derivations of *write* and *ride* include the step in figure 1. (I enclose underlying repre-

FIGURE 1
Derivations for *write* and *ride*

1. Underlying Representations:	//rayt//	//rayd//
2. After Raising:	rʌyt	rayd

FIGURE 2
Derivations for *writer* and *rider*

1. Underlying Representations	//rayt +ər//	//rayd+ər//
2. After Raising:	rʌytər	raydər
3. After Flapping:	rʌyDər	rayDər

sentations in double slashes to distinguish them from phonemic representations.) In *writer* and *rider* flapping can also apply, and since flapping neutralizes the distinction between //t// and //d//, it obliterates the environment for the raising rule, the application of which depends crucially on whether the following consonant is voiceless or voiced. In a traditional generative analysis, this means that raising must apply before flapping, as in figure 2. (I use the conventional [D] here to represent the flap.) Chomsky (1964, 99) argues that when *writer* and *rider* are both pronounced with a flap, a standard phonemic treatment must attribute the difference in pronunciation to a phonemic distinction between [ʌi] and [ai] rather than to a phonemic distinction between /t/ and /d/. Joos (1942, 143) does in fact analyze [ʌi] and [ai] as separate phonemes for Canadian speakers with [ʌi] in *writer*, but Chomsky considers such an analysis absurd.

If PARTIAL OVERLAPPING (Bloch 1941) is allowed, examples like *writer* versus *rider* do not require a phonemic distinction between [ʌi] and [ai]. Since we can unambiguously assign [D] after [ʌi] to /t/ and [D] after [ai] to /d/, the phonemic representations /raytər/ and /raydər/ are possible. The problem for this analysis, and for Chomsky's analysis as well, arises from the examples given above in which flapping is not involved. As we saw, my three speakers all had [ai] before a voiceless consonant in a few examples not covered by any apparent subregularity. There were also cases of [ʌi] before a voiced consonant for which I could offer no systematic account. Such examples strongly suggest that for speakers of the dialects under consideration here, the distinction between [ʌi] and [ai] is in fact phonemic. One of my speakers (JV) had a minimal pair in which both words are monomorphemic: *idle* ([ʌi]) versus *idol* ([ai]). The other two speakers both had the near-minimal pair *tire* ([ʌi]) versus *dire* ([ai]). This distinction is marginal in the sense that it has a very small functional load, but it is nonetheless a distinction.

One argument in favor of the phonemic status of the distinction between [ʌi] and [ai] is the clarity of intuitions mentioned earlier (197). As I noted there, my linguistically untrained speakers had no trouble deciding whether [ʌi] or [ai] was correct in the great majority of relevant

words. Even when their judgments were uncertain, the difficulty was that either [ʌi] or [ai] seemed possible, not that some diphthong of intermediate quality seemed correct. Since the early days of the phonemic method, linguists have often claimed that native speakers speak and hear in terms of the phonemes of their language. For example, Bloomfield (1933, 79) says, "The speaker has been trained to make sound-producing movements in such a way that the phoneme-features will be present in the sound waves, and he has been trained to respond only to these features and ignore the rest of the gross acoustic mass that reaches his ears." Swadish (1934, 118) says, "The phonemes of a language are, in a sense, percepts to the native speakers of the given language, who ordinarily hear speech entirely in terms of these percepts." Remarks like these suggest that speakers should have difficulty discriminating allophonic variants, and in well-known English cases such as clear versus dark /l/ (Sloat, Taylor, and Hoard 1978, 40) or front versus back /k/ (Lass 1984, 16–17), it generally takes some work to train ordinary speakers to detect the phonetic differences. No such work was necessary for [ʌi] versus [ai]; it was sufficient to illustrate with the pair *tight* versus *tide* and point out the difference in the pronunciation of *i* to my speakers.

The foregoing argument is admittedly not very strong. I now turn to what I hope is more convincing evidence that the distinction between [ʌi] and [ai] is in fact phonemic.

DIALECT MIXTURE AND LEXICAL DIFFUSION. As I noted above, for 446 of the 504 words used in data collection, each of the three speakers gave a clear judgment as to whether [ʌi] or [ai] was correct. Among these 446 items on which there was no uncertainty, the three speakers were unanimous on 428 (96%). The 18 items on which there were disagreements are listed in table 7. There is an obvious pattern to the disagreements in table 7. My Rochester speaker (NR) had [ʌi] in 16 of the 18 items, whereas my mother (JV) had [ʌi] in 10 and I myself (TV) had [ʌi] in only 2. A pattern like this is reminiscent of LEXICAL DIFFUSION (Wang 1969), that is, the gradual spread of a sound change through the relevant items in the vocabulary.[8] As I mentioned above, I spent just over two years of my adolescence interacting with peers who had [ai] in all environments.

It seems quite likely that I was in the early stages of a merger of [ʌi] with [ai] that was taking place by what Trudgill (1983, 93) calls TRANSFER, that is, a form of lexical diffusion. The merger was probably cut off when I moved to Rochester and was once again surrounded by speakers who differentiated [ʌi] and [ai]. Given my relatively advanced age (12) at the time of the move to Maryland, it may be that the incipient merger

TABLE 7
Words on Which Informants Disagreed

	NR	JV	TV		NR	JV	TV
*bison**	ʌi	ai	ai	*ire*	ʌi	ʌi	ai
colitis	ʌi	ʌi	ai	*like*	ʌi	ʌi	ai
glycogen	ʌi	ai	ai	*lyre*	ʌi	ʌi	ai
gyroscope	ʌi	ai	ai	*neuritis*	ʌi	ʌi	ai
hire	ʌi	ʌi	ai	*nice*	ʌi	ai	ai
hydroplane	ʌi	ai	ʌi	*nitrate*	ʌi	ai	ʌi
idle	ai	ʌi	ai	*pyre*	ʌi	ʌi	ai
irony	ʌi	ʌi	ai	*sire*	ʌi	ai	ai
italics	ai	ʌi	ai	*stipend*	ʌi	ai	ai

*NR had either [bʌisn̩] or [baizn̩], but JV and TV had [baisn̩].

would never have gone to completion even if I had remained there. On the other hand, it may also be that some items that were transferred to the [ai] class during the stay in Maryland were subsequently transferred back to the [ʌi] class in Rochester or even later. In any case, this kind of dialect mixture during the years in Maryland is a plausible explanation for the peculiarities in the distribution of [ʌi] and [ai] in my 1975 judgments.

On the basis of the data from JV in table 7, it would be dangerous to draw any conclusions. It may be that her distribution of [ʌi] and [ai] was more like NR's Rochester distribution before the move to Maryland. If so, the fact that she was already in her 30's during the stay there would probably have made her less susceptible than her adolescent son to transfer. On the other hand, her original distribution (and presumably my own as well) might have been much as it was when she gave her judgments in 1975. In the absence of any data from other Minneapolis speakers, I have no alternative but to leave this question open.

In trying to reconcile the evidence for lexical diffusion with evidence for sound changes affecting phonemes in Neogrammarian fashion, Labov (1981) suggests that lexical diffusion involves phonemic distinctions, and Householder (1983, 9) agrees. If this suggestion is correct—and I think the evidence in its favor is compelling—the pattern of apparent transfer from [ʌi] to [ai] in my own past supports the claim that the distinction between [ʌi] and [ai] is phonemic. Much of Labov's discussion concerns the split of "short *a*" (General American /æ/) into two phonemes in the Philadelphia area, and there are clear parallels between this case and the apparent split of [ʌi] and [ai]. It is also instructive to

compare Trager's (1940) traditional phonemic account of "short *a*" with Joos's (1942) paper on [ʌi] (and [ʌu]) vs. [ai] (and [au]).

It is also interesting to compare a change in my pronunciation that apparently did proceed in Neogrammarian fashion. One of the stereotypical characteristics of Minnesota English is a rather high and monophthongal [o:] for the vowel nucleus in words like *no*. I have no doubt that this was a feature of my pronunciation before I moved to Maryland, but the norm among my peers there was something like [ɛu]. I am aware of this only because a change to [ɛu] in my pronunciation was brought to my attention by friends in Minneapolis when I was there on a short visit from Maryland. After moving to Rochester, this vowel nucleus shifted again to a General American [ou]. These successive shifts were certainly gradual and doubtless involved transition periods during which there was variability, but all the vocabulary items containing this nucleus seem to have shifted in the same way. In this case, of course, a single phonemic entity has been involved all along.

CONCLUSION. Marginal phonemic distinctions have been a problem for phonemic analysis since the methodology was first codified. Sapir (1930, 47–48) treats Southern Paiute [s] and [š] as allophones of a single phoneme even though their distribution is not quite complementary, a clear violation of the traditional phonemic method. Anderson (1985, 233–36) discusses cases of this kind and suggests that the methodological assumptions of traditional phonemic analysis should be reexamined. As he points out, standard practice requires that a phonetic distinction be ascribed to one of three things: a phonemic contrast, a predictable allophonic alternation, or a subphonemic free variation. Anderson then continues: "In fact, a fourth possibility was implicit in Sapir's practice: a difference between variants of the same phoneme, which thus does not correspond to a contrast between two potentially distinctive phonological units, yet is not 'free variation' either, since it is distributed idiosyncratically in particular lexical items." Anderson suggests that this fourth possibility merits further consideration, although he does not actually advocate descriptions that make use of it. Lass (1984, 34–36), on the other hand, considers similar cases and says that allowing allophonic rules to have exceptions is preferable to treating such distinctions as phonemic.

Crothers (1978, 102), in his discussion of vowel systems in a wide variety of languages, suggests a distinction between FULL PHONEMES and MARGINAL PHONEMES. He tries to restrict his comparisons of vowel systems to full phonemes and says, "I think one should recognize that phonological

systems, being always in a state of change, may at any time contain sound differences that are neither fully phonemic nor fully nonphonemic."

A different view is advocated by Arisaka (1940), a Japanese linguist whose work has been tremendously influential in his own country but has remained virtually unknown elsewhere. Arisaka's essential claim is that any two distinct phonetic targets represent distinct phonemes, whether or not the phonetic distinction functions to distinguish lexical items with different meanings. He says that two targets are involved unless the phonetic distinction disappears in careful speech, although there are some hedges in his own application of this careful-speech criterion, and the notions of "careful speech" and "target" clearly need to be made more precise. Nonetheless, it seems to me that Arisaka's claim can be interpreted as a very strong hypothesis about the psychological status of marginal phonemic distinctions and even many distinctions that have been regarded as uncontroversially allophonic. The hypothesis would be that such marginal distinctions are psychologically just as categorical as distinctions which are unquestionably phonemic. I suspect that this hypothesis is in fact TOO strong, but I think it deserves to be taken seriously and tested carefully.

I have argued here that the distinction between [ʌi] and [ai] is phonemic for speakers of some northern United States dialects, but I cannot claim to have established this conclusion beyond dispute. To clinch the argument, it would be necessary to conduct the kind of experimental work that Labov (1981, 289–93) reports in connection with "short *a*." My expectation is, of course, that such work would provide solid evidence for CATEGORICAL DISCRIMINATION of [ʌi] versus [ai].

Needless to say, the intuitive judgment data presented here cannot substitute for careful observation of actual behavior. I would expect acoustic measurements of natural speech from my three speakers to show tokens of diphthongs they judged to be [ʌi] clustered around one norm and tokens of those they judged to be [ai] clustered around a different norm. For diphthongs about which their judgments were uncertain, I would expect inconsistency, with some tokens in each cluster. Since there does not appear to be any social significance attached to the [ʌi]/[ai] distinction within the geographical area under consideration, I would not expect the sort of stylistic variation documented in work by Labov (1966), Trudgill (1974), and others. I must emphasize, however, that I have absolutely no concrete evidence to offer in support of these surmises. A good deal of work clearly remains to be done.

A final point I would like to raise concerns the observation by Chambers (1973, 115) that linguistically naive speakers of dialects adjacent to

Canadian dialects with [ʌi] and [ʌu] react more readily to the deviance of [ʌu] than to that of [ʌi]. Chambers attributes this kind of reaction to the fact that "the onset of the back-gliding diphthong is typically higher and slightly backer than the onset of the front diphthong and is therefore more markedly different from their own pronunciation" (see n. 1). This may well be true for General American speakers with a low central onset for both diphthongs, but I cannot help wondering whether some of these reactions come from northern United States speakers who have essentially the Canadian distribution of [ʌi], but not of [ʌu], in their own dialects.

Notes

1. Joos transcribes the diphthong in *sight* with [ɐi] and the diphthong in *cloud* with [ɑu], but I will follow Chambers (1973) and ignore these small differences on the front-back dimension in my phonetic transcriptions.

2. I have no idea what the situation might be west of the Mississippi, but I was surprised to discover on moving to Hawaii that this northern U.S. pattern (generally [ʌi] before voiceless consonants but [au] nearly everywhere) also seems to be the norm in Honolulu for native speakers of standard Hawaiian English (as defined in Tsuzaki 1971, 330).

3. The clarity of these intuitions and the ease with which they can be elicited are significant. I will return to this point in my PHONEMIC STATUS section.

4. Coincidentally, this speaker attended the same college (Smith) as the Rochester speaker whose synopsis is given in Kurath and McDavid (1961, 24, 53).

I would like to express my very belated gratitude to Janice Vance and Nancy Rosenbloom for their cooperation.

5. Kiparsky and McCarthy argue that the real generalization in such cases is that [ʌi] occurs only when the following voiceless consonant is in the same metrical foot. Since a stress-neutral affix initiates a new foot, however, the distinction between boundaries is what is relevant for present purposes.

6. Joos and also Chambers (1973, 118) both describe the dental consonant in this pronunciation of words like *writer* by Canadians as [d] and not as a flap.

7. Chomsky says that the difference between the diphthongs in *writer* and *rider* is just length, and apparently this is true in some dialects, but his argument is unaffected if the phonetic distinction involved is one of quality, as in the dialects under consideration here.

8. For a concise discussion of lexical diffusion and references to relevant literature, see Hudson (1980, 168–171).

References

Anderson, Stephen A. 1985. *Phonology in the Twentieth Century.* Chicago: U of Chicago P.

Arisaka, Hideyo. 1940. *On'inron.* Tokyo: Sanseido.
Baugh, Albert C., and Thomas Cable. 1978. *A History of the English Language.* 3rd ed. Englewood Cliffs: Prentice-Hall.
Bloch, Bernard. 1941. "Phonemic Overlapping." *American Speech* 16: 278–84.
Bloomfield, Leonard. 1933. *Language.* New York: Holt.
Chambers, J. K. 1973. "Canadian Raising." *Canadian Journal of Linguistics* 18: 113–35.
Chomsky, Noam. 1964. "Current Issues in Linguistic Theory." *The Structure of Language.* Ed. Jerry A. Fodor and Jerrold J. Katz. Englewood Cliffs: Prentice-Hall, 50–118.
Crothers, John. 1978. "Vowel Systems." *Phonology.* Ed. Joseph H. Greenberg. Universals of Human Language, 2. Stanford: Stanford UP, 93–152.
Fisher, William M., and Ira J. Hirsch. 1976. "Intervocalic Flapping in English." *Papers from the 12th Regional Meeting, Chicago Linguistic Society.* Ed. Salikoko S. Mufwene, Carol A. Walker, and Sanford B. Steever. Chicago: CLS, 183–98.
Fox, Robert A., and Dale Terbeek. 1977. "Dental Flaps, Vowel Duration, and Rule Ordering in American English." *Journal of Phonetics* 5: 27–34.
Halle, Morris. 1962. "Phonology in Generative Grammar." *Word* 18: 54–72.
Householder, F.W. 1983. "Kyriolexia and Language Change." *Language* 59: 1–17.
Hudson, R.A. 1980. *Sociolinguistics.* Cambridge: Cambridge UP.
Hyman, Larry M. 1975. *Phonology: Theory and Analysis.* New York: Holt.
Joos, Martin. 1942. "A Phonological Dilemma in Canadian English." *Language* 18: 141–44.
Kiparsky, Paul. 1979. "Metrical Structure Assignment is Cyclic." *Linguistic Inquiry* 10: 421–41.
Kurath, Hans, et al. 1941. *Linguistic Atlas of New England.* Providence: American Council of Learned Societies.
Kurath, Hans, and Raven I. McDavid. 1961. *The Pronunciation of English in the Atlantic States.* Ann Arbor: U of Michigan P.
Labov, William. 1963. "The Social Motivation of a Sound Change." *Word* 19: 273–309.
———. 1966. *The Social Stratification of English in New York City.* Washington: Center for Applied Linguistics.
———. 1972. "The Internal Evolution of Linguistic Rules." *Linguistic Change and Generative Theory.* Ed. Robert P. Stockwell and Ronald K. S. Macaulay. Bloomington: Indiana UP, 101–71.
———. 1981. "Resolving the Neogrammarian Controversy." *Language* 57: 267–308.
Lass, Roger. 1984. *Phonology.* Cambridge: Cambridge UP.
McCarthy, John J. 1982. "Prosodic Structure and Expletive Infixation." *Language* 58: 574–90.
Peterson, Gordon E. and Ilse Lehiste. 1960. "Duration of Syllable Nuclei in English." *Journal of the Acoustical Society of America* 32: 693–703.
Sapir, Edward. 1930. *Southern Paiute: A Shoshonean Language.* Proceedings of the American Academy of Arts and Sciences, 65. 1–3.
Sloat, Clarence, Sharon Henderson Taylor, and James E. Hoard. 1978. *Introduction to Phonology.* Englewood Cliffs: Prentice-Hall.
Swadesh, Morris. 1934. "The Phonemic Principle." *Language* 10: 117–29.

Trager, George L. 1940. "One Phoneme Becomes Two: The Case of 'Short a'." *American Speech* 15: 255–58.
Trudgill, Peter. 1974. *The Social Differentiation of English in Norwich.* Cambridge: Cambridge UP.
———. 1983. *On Dialect.* New York: New York UP.
Tsuzaki, Stanley M. 1971. "Coexistent Systems in Language Variation: The Case of Hawaiian English." *Pidginization and Creolization of Languages.* Ed. Dell Hymes. Cambridge: Cambridge UP, 327–40.
Wang, William S-Y. 1969. "Competing Changes as a Cause of Residue." *Language* 45: 9–25.

NATIVE: THE SHIFT IN MEANING

I noted with great interest Linda L. Rapp's query about the increased use of *native* to mean 'person residing in a place' rather than 'person born in a place' (*AS* 61 [1986]: 205). The shift in meaning Rapp describes apparently reached Tuscaloosa, Alabama, as early as about a decade ago and made its way into my own lexicon, as the following anecdotes illustrate.

At a party in about 1976, I was asked by my hostess, a German lady, if I were "a native of Tuscaloosa." I immediately answered "yes," but I soon had to explain that I meant that I was a permanent resident of the town rather than a student with a permanent address elsewhere, and not that I was born here.

In 1979, I found myself using *native* in its newer sense when I drafted a note describing a speaker as "a lifelong native of Birmingham." I promptly emended the phrase to "lifelong resident," but my spontaneous use of *native* in that sense has continued to fascinate me. I have no idea what influenced this usage, but Rapp's observation leads me to believe that these incidents from my own linguistic history somehow reflect a larger pattern.

JOHN E. WHITEHEAD, JR.
The University of Alabama

EDITOR'S NOTE: Another innovative use of *native* belongs to the parlance of college registrars: *native students* are those who matriculated as beginning freshmen, in contrast to *transfer students.*

I wonder if the prominence of the term *Native American,* which began replacing *American Indian* in the late 1950s, had the effect of loosening up the original concept of *native* 'belonging to a particular place by birth'—since *Native American* implies a distinction from other citizens who were also born in America. (C.C.D.)

References

Phonemic Overlapping
Bernard Bloch
American Speech, Vol. 16, No. 4. (Dec., 1941), pp. 278-284.
Stable URL:
http://links.jstor.org/sici?sici=0003-1283%28194112%2916%3A4%3C278%3APO%3E2.0.CO%3B2-R

Kyriolexia and Language Change
F. W. Householder
Language, Vol. 59, No. 1. (Mar., 1983), pp. 1-17.
Stable URL:
http://links.jstor.org/sici?sici=0097-8507%28198303%2959%3A1%3C1%3AKALC%3E2.0.CO%3B2-Z

A Phonological Dilemma in Canadian English
Martin Joos
Language, Vol. 18, No. 2. (Apr. - Jun., 1942), pp. 141-144.
Stable URL:
http://links.jstor.org/sici?sici=0097-8507%28194204%2F06%2918%3A2%3C141%3AAPDICE%3E2.0.CO%3B2-6

Resolving the Neogrammarian Controversy
William Labov
Language, Vol. 57, No. 2. (Jun., 1981), pp. 267-308.
Stable URL:
http://links.jstor.org/sici?sici=0097-8507%28198106%2957%3A2%3C267%3ARTNC%3E2.0.CO%3B2-F