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Hitting a moving target: Acquisition of sound change in progress by Philadelphia children

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ABSTRACT

Recent work in the acquisition of dialect has shown that children acquire patterns of stable variation and completed sound changes at a very early age. The present study looks at the acquisition of new sound changes by 3- and 4-year-old children. The results were consistent with previous findings in that, with critical exceptions, the children had acquired the changes. These results underscore the point that the dialect transmission period begins early—before the age of maximal peer group influence. In addition, as Labov (1994) suggested, one possible explanation for the frequent finding that women lead in changes from below is the asymmetry of the early childcare situation, which could advance female-dominated changes. The finding that children begin to learn their community norms at a very early age supports the possibility that this childcare asymmetry affects the progress of sound changes over time.

The field of sociolinguistics has a rich history in the documentation of language change. Until recently, it has been rare for the transmission of these changes to be explored across generations or for very young children to be included in the description of a speech community. There appears to be increasing evidence, however, that such study would be fruitful. Work on the acquisition of patterns of stable variation—(t,d) deletion (Guy & Boyd, 1991; Roberts, 1996, in press), variability between /æ/ and /ɛ/ (Roberts, 1996), and variation in the production of finite be (Kovac & Adamson, 1981)—has shown that children as young as 3 or 4 years of age are able to acquire these patterns. There are indications that children acquire these forms as rules rather than in a word-by-word process.

In addition, there has been some work on the participation of preschool children in ongoing change in progress. A study of the acquisition and transmission of a new dialect in Milton Keynes by children beginning at age 3 showed that preschoolers tend to adopt less extreme productions of fronted (ou) as compared with adolescents (Kerswill, 1996; Kerswill & Williams, 1992). The children were divided in their strategies for adopting this form. Two of the four 4-year-olds appeared to model their productions on older children, one child’s productions were similar to those of his father, and one
child appeared to use a strategy that was a compromise between his parents' productions. No specific childcare information was given for these children.

A study completed on the acquisition of the Philadelphia short a pattern by 18 preschoolers, including the children who participated in the present study, suggested that children can and do acquire forms undergoing change in progress at a very young age (Roberts & Labov, 1995). In fact, the results of that study revealed that, just as the acquisition of many grammatical and phonological rules of language continues throughout the preschool period, the 3- to 4-year period is also an active one for the learning of short a, a dialect-based pattern. The tensing and raising of short a is a defining point of the Philadelphia dialect and a very complex phenomenon, featuring lexical and grammatical as well as phonological conditioning (Ferguson, 1975; Labov, 1989). The children learned the system in some of the environments, such as the lexically conditioned tensing and raising of short a in the words mad, bad, and glad (but not sad) and the short a preceding nasals, consonants, and syllable boundaries. At the same time, other environments continued to be learned throughout this period. Most important were those environments which are undergoing lexically influenced distributional change in progress: that of short a before /1/, as in pal and personality, and before intervocalic /n/, as in planet. In both of these instances, the children appeared to be participating in the change by demonstrating increased tensing in these environments as compared with their parents and the adults studied in 1974–1977. Further, they demonstrated growth in their acquisition of the system by showing increased adoption of the community norms between the ages of 3 and 4.

The process of fronting and raising tense short a in Philadelphia is an almost-completed sound change, even though the distribution rule determining which short a environments are affected by this change continues to shift. Short a before /1/ and intervocalic /n/ are new environments in which the raising is evident.

Labov (1990:230) identified three Philadelphia sound changes as “new and vigorous”: fronting and raising of the nucleus of (aw), as in cow; the reversal of the lowering of the nucleus of checked long (eyC), as in cake; and the centralization and backing of long (ay0) before voiceless finals, as in fight. Payne (1980) examined the acquisition of several Philadelphia vowels, including some of those just listed, by second-dialect learners—that is, children who moved to the Philadelphia area after the early language acquisition period. She noted that the variables (eyC), (ay0), and (aw) are phonetic variables in the sense that they can be incorporated into the grammar by simple rule addition at the end of the grammar. The fronting of (aw) has also been noted to be parallel to the fronting of the long /uw/ in boot and the long /ow/ in boat, both of which are classified as mid-range Philadelphia vowel changes (Labov, 1990). Proceeding in the opposite direction is the centralization and backing of (ay0) before voiceless obstruents. Finally, Labov et al. (1982) noted that the nucleus of long (ey) when followed by a consonant, as in tape, is raised.
In contrast to these simpler phonetic changes is the raising of the nucleus of short a, which, as previously mentioned, is conditioned phonetically, grammatically, and lexically. Not surprisingly, Payne (1980) found that the second-dialect learners in her study, who ranged in age from 8 to 20, had more difficulty learning the short a pattern than they did learning to front (uw), (ow), and (aw). In fact, the only children to acquire the pattern completely were native Philadelphians or the children of native Philadelphians.

The present study examines the acquisition of these new sound change variables and compares them with the raising and tensing of short a in the 3- and 4-year-old children who participated in Roberts and Labov (1995). The results of this analysis are used to answer the following questions:

1. Have the children, by the ages of 3 and 4, acquired the sound changes in question?
2. Are the changes that are affected only by phonetic conditioning more difficult for the children to learn than those that are influenced by their phonological, lexical, and grammatical environments as well?
3. What, if any, is the effect of the dialect background of the parents in the acquisition of regional forms by their children?
4. What, if any, is the effect of the early childcare situation on the advancement of female-dominated sound changes?

METHODOLOGY

Variables

The variables examined in this study consisted of three vowels which are currently undergoing change in the Philadelphia dialect. They are compared with the children’s acquisition of short a, as discussed in Roberts and Labov (1995). The three vowels undergoing change in progress are as follows:

1. the fronting and raising of the nucleus of (aw), as in cow, crown, and south;
2. the raising of the nucleus of checked long (eyC), as in cake and rate; this checking of long (eyC) is blocked by a word boundary, but not by a syllable boundary; and
3. the backing of long (ay0) before voiceless final obstruents, as in fight, right, and mice.

Subjects

For the present study, 6 children, aged 3;4 to 4;11, were tape-recorded over a 4-month period. These children, 3 girls and 3 boys, were a subsample of those who had participated in previous research projects on short a (Roberts & Labov, 1995) and (ing) production and (-t,d) deletion (Roberts, 1996, in press). The children were recorded at their daycare/nursery school, Kids’ Land, which is located in a working-class to lower middle-class area of South
Philadelphia and is staffed by native Philadelphians from the immediate area. Most of the children attending the nursery school program are from the surrounding neighborhood. The children spent from three to five days per week at Kids’ Land in a daily activity program which included mealtimes, snacks, nap, free play, circle time, and a quiet time watching children’s videotapes on television. Children had to be 2 1/2 years old to attend Kids’ Land, and they “graduated” when they were old enough to begin kindergarten. The children included in the study were white and were born in the Philadelphia speech community.

There were four children with native Philadelphian parents. Jenny, aged 3;11, was raised by her paternal grandmother, a Philadelphian, and had contact, but did not live, with her father. Danny, aged 4;10, lived with his mother and had no contact with his father. Shelly, aged 4;9, also lived with her mother and had limited contact with her father. Evan, aged 3;10, lived with his mother, father, and three older siblings.

The children with non-native parents included Gia, aged 3;11, who lived with her father, a Philadelphia native, and her mother, who had moved frequently throughout her own childhood. Mike, aged 3;4, lived with his mother and father, both of whom were born and raised in Italy and came to Philadelphia as adults. Italian is the primary language spoken in his home. See Table 1 for an overview of the informants and their parents.

Procedure

For many years, the sociolinguistic interview has been the method of choice for many researchers gathering large amounts of data (Labov, 1984). Widely used with adults and older children, it contains questions on topics designed to elicit a variety of speaking styles, including the most informal, in order to obtain instances of the informants’ day-to-day vernacular.

Needless to say, much modification was necessary to adapt this method to young children. The resulting play-interview session included free play with a variety of toys as well as more structured activities. Most successful in eliciting the quantity of data needed, as well as specific lexical items, was a Ses-
AME Street doll house; using this doll, characters could be manipulated and
made to interact with objects. Also useful were toy telephones and a pretend
book-reading activity, which involved picture books as well as blank books
in combination with the prompts, “Make up a story” or “Tell me what happened
in the story.” Finally, some tokens were collected via a picture-naming
game in which children chose pictures from a grab bag, named them, and
tossed them back in the bag. The children were interviewed multiple times
during a 4-month fieldwork period. They were generally seen two at a time,
but the first session for each child was an individual one during which the
child interacted with and talked to the toys and the interviewer (the author,
a native English speaker and longtime Philadelphia resident, who has some,
but not all, Philadelphia dialect features).2 The sessions took place in a cor-
ner of the daycare center and lasted from 30 to 45 minutes. Although oth-
ers were present in the room, interactions between anyone other than the
interviewer and the children during the sessions were rare.

Two of the Philadelphian mothers were interviewed by the author in their
homes for comparative purposes as well as to gather background informa-
tion. These interviews were audiotaped with the same equipment used
during the children’s sessions. Other parents were contacted by telephone to
obtain this information, which included where they were raised, their occu-
pations, and the number and ages of people in the household.

A Nagra tape recorder and Sony ECM 50 lavaliere microphone were used
to tape the children and adults. Single words taken from the spontaneous
speech of the six children and two mothers were digitized using the Kay Com-
puterized Speech Lab on a Gateway 2000 386 personal computer. The vowel
tokens were analyzed using the same equipment. Single measurements of the
vowels were taken as follows. For vowels containing both nuclei and glides
(e.g., (aw), (ey), (ow), (uw), (ay), and tense short a), vowel nuclei were mea-
sured. Specifically, if the extremity of raising or fronting were of interest, the
measurement was taken at the most extreme point of the nucleus. For vow-
els without glides (e.g., (i), (e), lax short a), the measurement was taken at
a point along the steady state. No attempt was made to normalize the vow-
els, since the focus of the research was on the system of each speaker and the
relationship of the vowels to each other within that system. The sample rate
was 10k Hz, and it was digitally filtered at 4k Hz.

RESULTS

The analysis revealed that, as expected, all of the children were making
progress in learning the Philadelphia vowel system, including its new and vig-
orous changes, and could demonstrate some of its characteristics. The results
varied, however, both according to the vowel in question and from individ-
ual to individual.

All of the children had acquired the fronting of (aw), as in cow, as well
as the fronting of (uw), as in boot, and (ow), as in boat. The last two vari-
ables, which were not included in the study, are shown as means in the figures that follow. Jenny’s vowels are charted in Figure 1. Means of other vowels are given, as well as those of (uw) and (ow), to show the relative positions of the variables in question. All tokens of (aw) for all six speakers were fronted at least to short a and, in some cases, to the position of free and checked long (ey). Even Mike, the child with the Italian-speaking parents, who was less successful in acquiring some of the other variables, was exceptionally in the fronting of (aw).

Payne found that her second-dialect learners had more difficulty acquiring (aw) fronting than (uw) and (ow) fronting, the centralization of (ay) before voiceless obstruents, or the raising of the nucleus of (oy). She noted that her speakers received help from their native dialects in learning the more readily acquired features, and that several of the native dialects were characterized, for example, by fronted (uw) and (ow), but not by fronted (aw). She also stated that newer changes, such as those involving (ay) before voiceless fricatives and (aw), might be acquired less successfully than those closer to completion, like those taking place with (ow) and (uw).

The fact that the speakers in the present study had so little difficulty in learning fronted (aw) does not seem too surprising, since it is a simple phonetic variable. Children who heard fronted (aw) almost, if not completely, to the exclusion of any other would understandably produce it this way themselves.
The conditioning of the raising of the nucleus of (ey) is somewhat more complicated because the raising only occurs when the vowel is “checked” by a following consonant within the same word. Nevertheless, four of the six children had largely acquired this system. As can be seen in Danny’s vowel chart (Figure 2), this means that, with occasional exceptions, the checked (ey)s were raised and more peripheral (i.e., toward the outer boundary of the system) than the free (ey)s, and that they overlapped with long (iy), as in meet. The same pattern was found in the vowels of the other three children with native Philadelphian parents (Jenny, Evan, and Shelly). The exceptions for these four children tended to be free (ey)s, which they raised, rather than checked (ey)s, which they failed to raise.5

The fifth child, Gia, whose mother is not a native Philadelphian, was the only child for whom checked (ey) productions did not overlap those of (iy) (see Figure 3). Even though she did not demonstrate the raising of checked (ey) in terms of a clear separation of checked and free (ey)s and an overlapping with (iy), her tokens of checked (ey) were clustered together and, with one exception, set apart from her free (ey) tokens, which were more dispersed throughout the nonperipheral vowel space.

The vowel chart of Mike (see Figure 4) presents another variation in the acquisition of checked (ey). At first glance, it looks as though Mike is making headway in acquiring checked (ey) raising. With three exceptions, Mike’s productions of checked (ey) overlapped those of long (iy), and, with one
FIGURE 3. Gia, age 3;11. Distribution of checked and free (ey) compared with (iy).

FIGURE 4. Mike, age 3;4. Distribution of checked and free (ey) compared with (iy).
exception, the free (ey)s did not. In contrast to the other four speakers, Mike's
(iy)s appeared to fall into two clusters. There is an incipient sound change in
Philadelphia involving the raising and fronting of checked (iy) (Labov, 1990),
and so the first step was to explore whether Mike had acquired this change
and incorporated it into his system. This did not seem to be the case, since
the two groups of long (iy) were made up of both checked and free tokens.
In addition, the lower (iy) tokens were quite lax sounding (more like the [i]
in *bit*), the mean of which was more centralized, but no lower, than the (iy)
tokens. It is not surprising, then, given his reduced exposure to the Philadel-
phia system, that Mike's production of the high front vowels, including
checked (ey) raising, differed somewhat from that of his peers.

The third new sound change under discussion is the centralization and
backing of (ay) before voiceless obstruents (e.g., *kite*). Unlike the other vow-
els, the speakers' acquisition of this phoneme is not at all complete. In many
cases, the tokens of (ay) before voiceless obstruents were more centralized
than those of other tokens of (ay), and in other cases they were farther back.
However, there was no clear distinction for any of the children, and there
were many exceptions. The relative lack of acquisition of this variable is illus-
trated by the exemplar vowel chart of Jenny, one of the most advanced Phil-
adelphia speakers in her acquisition of the other phonemes studied (Figure 5).
She had seven (ay) tokens that were back near the position of long open */oh/
and were realized as [a']. They were not, however, all cases of (ay) before
voiceless obstruents. The others were *fine, my,* and *guy.* The other children
demonstrated similar patterns, and none of them showed acquisition of this dialect feature. This variable clearly appears to be more difficult to acquire than the others.

Before discussing the reasons for this difficulty, it may be useful to compare the acquisition of these three newer sound changes with that of an almost-completed, but more complicated, sound change—the tensing and raising of short *a* (Roberts & Labov, 1995). As previously noted, in spite of the phonetic, grammatical, and lexical conditioning affecting short *a* production, the children, as a whole, had a surprisingly good grasp of the split into tense and lax short *a*. The four children with Philadelphian parents (Jenny, Danny, Shelly, Evan) demonstrated an obvious split between the two, with very few tokens crossing over, as shown for Shelly in Figure 6.

Gia, while in many respects having acquired this system, did not show the clear demarcation between short *a* classes that the others did (see Figure 7). All but one of her lax short *a* tokens were grouped tightly together, whereas her tense productions were more diffuse. For example, her short *as* before */l/* were not lax, but neither were they as tense as her other tensed productions. One token of *bathtub* was similarly borderline, while the other was raised and tense. Even more striking was her consistent laxing of short *a* before */t/*, an environment normally associated with tense productions in adult Philadelphia speakers. On the other hand, some of her tense short *a* productions were quite extreme and overlapped with (iy). These included two
productions of *planet*, a lexical item only recently moving into the tense short *a* category.

Finally, Mike represents the most limited acquisition of short *a* (see Figure 8). He did have some tense productions, and he tensed none of the tokens that would normally be lax in the Philadelphia system. However, he failed to tense the vowel in many words that would have a tense vowel in a fully learned short *a* system. These included the words *alligator, salad, giraffe* (in one instance, but not in another), *planet, mad, and bad*. In sum, as Payne found in her study, the full acquisition of the raising and tensing of short *a* appears to require not only being raised in Philadelphia oneself, but also having parents who are native speakers of the Philadelphia dialect.

**DISCUSSION**

In reviewing the acquisition of three new and one almost completed sound change, the results appear to be something of a mixed bag (see Table 2). The fronting of *(aw)* was fully acquired by all six speakers. The raising and tensing of checked *(ey)* was acquired fully by the four speakers with native parents, nearly acquired by Gia, whose father is a native Philadelphian, and only partially acquired by Mike, whose parents speak Italian in the home. Similarly, short *a* tensing and raising was acquired by four children, nearly
acquired by Gia, and only acquired in a very limited way by Mike. In contrast, none of the children appeared to be centralizing and backing (ay0) to a large or very systematic extent.

As stated at the outset, in order to speculate on why the children differed in their ability to learn these vowels, it is important to consider two issues. The first has been touched on throughout this article—the influence of the parents and their own dialect backgrounds on the acquisition of local features by their children. The observation that parents have an effect on the linguistic behavior of their children is far from surprising. Neither, however, is the extent of that influence entirely obvious. Of the two not completely native Philadelphians, Mike’s case was the most straightforward. He had only re-
cently been enrolled in Kids' Land when interviewing began there. His membership in the Philadelphia speech community and its influence on his speech would certainly be mitigated by his home use of Italian and his mother's limited command of English. Gia, on the other hand, was in many ways thoroughly immersed in South Philadelphia, in spite of her mother's having moved there only after her marriage to Gia's father. Gia's mother had worked outside the home since Gia was an infant, and Gia had frequently been cared for by local babysitters and by her native Philadelphian father. She had been enrolled in full-time daycare, staffed by Philadelphians, for about one year at the outset of this research. In addition, she had a large extended family in South Philadelphia, whom she saw frequently. Clearly, all of this contact with Philadelphians had had an effect on Gia's language. She sounded very much like a speaker of the Philadelphia dialect. Nevertheless, she had not acquired the raising and fronting of checked (ey) or the raising and tensing of short a to the extent learned by the other children who were raised by two native Philadelphian parents.

None of this explains why none of the children seemed to have acquired the centralization and backing of (ay) before voiceless obstruents. Given the effect of parents' language on that of their children, it seemed reasonable to look first at the realization of (ay) in the speech of the two mothers who were interviewed. Debbie (Shelly's mother) and Carol (Evan's mother) were both raised in Philadelphia. Carol, in fact, continues to live in the house in which she was born. Her immediate family includes her husband, raised in Northeast Philadelphia, and their four children, of whom Evan is the youngest. Debbie is a single mother. Her ex-husband was raised in Philadelphia, but no longer has much contact with Shelly. As can be seen in Figures 9 and 10, both speakers showed clear evidence of the fronting of (aw), the raising and fronting of checked (ey), and the raising and tensing of short a. In neither case, however, was (ay) clearly centralized. The question therefore becomes, why do these speakers and their children evidence some of the previously documented sound changes in Philadelphia but not others?

At this point in the investigation, it appeared that what was needed was data from the fathers. Unfortunately, there was only one such interview, a short one with Gia's father (Joe), a native Philadelphian.7 As can be seen in Figure 11, his data are sparse, but the tape did contain a number of (ay) tokens. The chart shows a clear tensing of short a and raising of checked (ey). Unfortunately, there were no instances of (ow), (uw), or (aw) with sufficient syllable stress to tell us whether or not he fronted them. But in general, as expected given his background, his chart looks very much like that of a speaker of the Philadelphia dialect. Of the greatest significance is that most of the instances of (ay) followed by voiceless obstruents were more centralized, and all were further back than the other productions of (ay).

The findings of Labov (1990) and Eckert (1989) on gender and sound change may shed some light on the question as to why the man in this group

FIGURE 10. Carol, parent. Distribution of (ay) tokens.
demonstrated centralized (ay), but the two women and six children did not. Labov noted that a short a tensing and checked (ey) raising, as well as the fronting of (aw), show a significant female advantage: that is, women lead in the advancement of these changes. In fact, he stated that “the strongest female advantage appears in two of the new and vigorous sound changes (aw) and (eyC)” (1989:231). The third new change, the centralization of (ay), however, shows a significant male advantage, parallel to the centralization of (ay) in Martha's Vineyard. According to Labov, it follows that, since the earliest caregivers in the societies studied are most often female (either a mother, other female relative, female babysitter, or childcare worker), the child hears advanced tokens of the female-dominated changes more frequently and advanced tokens of the male-dominated changes less frequently. The early childcare situation, therefore, accelerates female-dominated changes and slows male-dominated changes.

Eckert (1989) emphasized the need for examining the social constructions of gender in interpreting sex differences in language change. That is, it is important to consider that interactional networks and other social categories may interact with gender to produce a pattern of sound change that is far more complex than a simple male/female breakdown along a continuum of linguistic conservatism might suggest. It is interesting to consider the participation of preschoolers in the process of sound change in this light, since their interactional networks are somewhat restricted, consisting primarily of fam-
ily and daycare participation. Even their exposure to older peers, noted by Kerswill (1996) to be an important factor in school-age children's adoption of dialect forms, was limited. Only one of the six children (Evan) lives with older siblings. One might therefore expect, as Labov suggested, that, given these restricted networks and the prominence of females in them, we would see the children's increased participation in changes led by female speakers, as compared with those led by male speakers.

The current findings support this predicted pattern. Gia provides a specific illustration because, although her father is a Philadelphian with centralized and backed (ay), her mother is not; she has a large extended family and childcare network, most of whose members are female. Gia had learned most of the other variables examined in this study, but not (ay) centralization. Her mother's failure to speak the local dialect did not prevent her from learning it. Still, what she learned best were the changes led by females.

The present findings provide support for Labov's argument in two ways. First, the mere fact that children at the age of 3 and 4 are actively learning their dialect, accessing community norms, and participating in changes in progress suggests that they are receptive to the dialect influence of their caregivers at a time when these caregivers are most likely to be female and locally based. Second, to the extent that these particular children had contact with local norms, they appear to have learned the sound change patterns that are demonstrated by their mothers and other female speech community members with whom they had contact. The fact that these changes include female-dominated sound changes, but exclude male-dominated ones, suggests that it is the female-dominated changes that are being advanced in the transmission of dialect features across generations.

In conclusion, this study has shown that children in the preschool years are actively learning their local dialect. They have, depending on their immersion in the speech community, acquired the new and vigorous sound changes surrounding (eyC) and (aw), as well as the more nearly complete, but more complex, short a pattern. The extent of their acquisition of these changes appears to be influenced by the language and dialect background of their parents. In addition, their lack of success in acquiring the centralization of (ay) suggests that it is the female-dominated sound changes that are advanced in early language learning.

NOTES

1. The daycare center and all participants in the study were given pseudonyms to protect their privacy.
2. Although it has been shown that preschool children have considerable knowledge of speech register (Andersen, 1990; Shatz & Gelman, 1973), evidence that children modify their use of dialect features in response to changes in speaking style (or activity or topic) or addressee is less convincing. In fact, Kerswill and Williams (1992:87) found "little if any" style shifting in 4-year-olds in their study of replacement of [t] with glottal stop. Similarly, Roberts (1996, in press) found no change in the rates of (t-d) deletion in response to changes in activity or addressee in an
expanded group which included the children reported here. The children were more likely to use
the alveolar than the velar form of (ing) when talking to children as opposed to adults. How-
ever, they showed the same lower probability of alveolar (ing) when talking to puppets and other
imaginary characters as they did when interacting with adults! (See the above-mentioned stud-
ies, as well as Roberts and Labov, 1995, for further discussion of this issue.)
3. In the figures, the variable under discussion is indicated by the key to the right. Ellipses are
intended to indicate groupings of this variable. Means of other vowels are labeled in the graph
itself to ground the salient variable in the vowel chart as a whole.
4. In this study, the terms “learned” and “acquired” are used in the sense that is implied in child
language acquisition or child phonology literature in general. That is, the input to children con-
tains both dialect-specific rules and features and those which cross dialect boundaries; children
are assumed to acquire them simultaneously and in the same manner. Therefore, there is no intent
to imply that children have a dialect-neutral production that precedes the fronted (aw). In fact,
there are no studies of children’s productions of simple phonetic dialect-specific variables such
as (aw) before age 3, and yet they appear to be fully within the children’s phonological system
at age 3; therefore, there can be no assumption regarding what, if anything, preceded these fronted
productions. This is in contrast to findings regarding more complex variables like short /a.
Roberts and Labov (1995) found that, in this case, the children’s phonemic repertoires contain both
raised and lax short /a at age 3, but the learning of the distribution of tense and lax short /a is
in process during the 3- to 4-year age span and beyond.
5. These tokens might be taken to portend a new change in which the free /e/-/eə/ is moving
up to the periphery to join the checked variants. However, the small amount of data and the
likelihood that the overlap represents a developmental stage in the acquisition of this pho-
neme prohibits further conclusions.
6. The lax productions of mad and bad are particularly significant, since these are lexically con-
ditioned tense short /a words and are never lax in the other children’s and adults’ speech samples.
7. One of the major methodological errors of the current fieldwork was to conduct the par-
ent interview portion during hockey playoff season. While all of the fathers were invited to the
interview sessions, they were otherwise engaged. Gia’s father did come downstairs for 15 min-
utes during a break in the game and consented to be interviewed.

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