# THE DISAPPEARING POST-VOCALIC [r] OF „GENERAL AMERICAN" ENGLISH SPEECH

ALAN W. HUCKLEBERRY

The International Phonetic Alphabet consonant-vowel system has been accepted throughout the United States. It has been usable as a generalization and also as an initiation of the undergraduate university student to the study of the sounds of languages. The IPA has not always been applicable, both in description and insight, to American speech, and especially to that speech known as "General American." One concept in particular is not applicable, and that is the description of an [r] sound. It shall be the purpose of this paper to present a point of view in regard to one aspect of the [r] phoneme. This one aspect is the delineation of the post-vowel [r], referred to in this paper as the post-vocalic [r] sound. It shall present the probability that no such sound exists and that other sounds are in its place.

The philosophic base which started this semi-scientific study is the "observational rule" of all languages that *two* (or more) *consonants adjacent to each other in the same syllable must be either both voiced or both voiceless.* This particular "rule" is probably based on the physiological fact that such consonants become blended into *one* sound and therefore cannot have the qualities of one being voiced and the other voiceless. Examples to illustrate the "rule" are such as "stove" [*stov*], "reached" [*ritʃt*], "space" [*spɛɪs*], "kites" [*kaɪts*], and "beds" [*bɛdz*]. Nevertheless, the rule does have some rather obvious exceptions at first view. The *first* is that a voiced nasal can be combined with a voiceless consonant as in [*smɔl*], or [*wɛnt*], and [*tæɹk*]. This exception needs further research. A *second* exception is that the voiced [*l*] sound *can* be combined with voiceless consonants. My research, as well as others, tends to show that the [*l*] is not *always* voiced, as described in the IPA, and that the pre-vocalic [*l*] in combination with a voiceless consonant, as in "play" [*pleɪ*] or "sleep" [*slip*], is also voiceless. Further research is needed, however, on the post-vocalic [*l*] as in "help" [*hɛlp*]. A *third* exception is the pre- and post-vocalic [*r*]. My research, as well as that of others, leads to rather definite evidence that the voiced pre-vocalic [*r*] sound, when in combination with a voiceless consonant, is a voiceless [*r*]. This can be shown with either the [*ɾ*] sign or by using the [*ɹ*] symbol. I prefer the latter. Examples of the pre-vocalic voiceless [*ɹ*] concept are "train" [*tɹeɪn*], "crowd" [*kɹaud*], "thread" [*θɹɛd*], and "pray" [*pɹeɪ*]. Laboratory research at Ball State University illustrated, what others have inferred, that adjacent consonants *do* blend together and become *one* consonant. Thus, the two sounds of [*k*] and [*r*] in "cream" become one voice-

less sound, i.e. "cream" [*kɹim*]. Tapes of rapid speech of such a speech-word as [*kɹɪm*] can be cut to eliminate the [*m*] and the [*i*]; but if the [*k*] is removed, the [*ɹ*] disappears with it. Even the three sounds preceding and following a vowel, as in the word "scratched," [*skɹætʃt*] follow the same principle. Thus, the observational rule usually holds for adjacent consonants being either all voiced or all voiceless. The only exceptions seem to be certain [*l*] and certain nasal combinations.

It is the *post*-vocalic General American English [*r*] that is now the subject of anaysis for the remainder of this paper. What is the nature of the [*r*] that follows a vowel but is adjacent to another consonant? Examples are such as "card" [*kard*], "cart" [*kart*], "chord" [*kord*], and "court" [*kort*]. If the observation "rule", previously mentioned, holds true, then a voiced [*r*] would need to be followed by another voiced consonant, such as [*d*], and not by a voiceless consonant, such as [*t*] in the previous examples. The inconsistency is intriguing—and so the study—and so this paper.

First, a brief "aside" in regard to the division of syllables in General American English in regard to the [*r*] sound. Where the Britisher, the Eastern American, and the Southern American has a choice, he seems to divide his syllables in order to permit the [*l*] and [*r*] sounds to become *pre*-vocalic. The General American speaker, on the other hand, is likely to place the [*l*] and [*r*] in a *post*-vocalic position or even change the complete word pattern. Examples of the Southern, Eastern, and British speakers' style would be "silly" [*sɪ-lɪ*], "Alice" [æ-*lɪs*], "salad" [*sæ-lɪd*], "parade" [*pə-reɪd*], "carrot" [*kæ-rət*], and "perish" [*pɛ-rɪʃ*]. The General American speaker is likely to say [*sɪl-ɪ*] not [*sɪ-lɪ*], [*æl-əs*] not [æ-*lɪs*], [*sæl-əd*] not [*sæ-lɪd*], [*pəˆ-eɪd*] not [*pə-reɪd*], [*kɛr-ət*] not [*kæ-rət*], and [*pɛr-ɪʃ*] not [*pɛ-rɪʃ*]. This rather consistent shift gives the General American speaker many additional *post*-vocalic [*r*] sounds. *But then*, considering our observational rule, how can that "voiced" [*r*] be blended with a "voiceless" consonant as in "cart" [*kart*]? Is the [*r*] the same as the [*ɹ*] in the *pre*-vocalic position? Or does the [*r*] exist at all in the *post*-vocalic position? The evidence now points to the idea that the voiced post-vocalic [*r*] does *not* exist and is not blended with a voiceless consonant, i.e. [*kart*]. Research for years has hinted that it takes on a "vowel quality." What does happen?

Laboratory study appears to support the original hypothesis of this paper that the post-vocalic [*r*] *does not exist*. Rather, two phonetic phenomena appear to take place:

1. If *what we have throught* were the post-vocalic [*r*] appears in a syllable which has the *primary* accent or appears at the *end* of a phonetic expression before a pause, it becomes a vowel [*əˆ*]. For example, if a General American speaker says, "He wrecked his *car*", he will say it as [*kaəˆ*], not as [*kar*].

2. If the post-vocalic [*r*] appears in a syllable which has the *secondary* accent, it then becomes a part of the previous vowel. It actually produces—or is—a *new* vowel. Thus, if a General American speaker says, "His car was wrecked," he will say it as [*kaˆ*]. The symbol following the [*k*] is fabricated and is certainly *not* included in the IPA!



The following will further illustrate the results of this study:

| *Word* | *Primary Accent* or *Before a Pause* | *Secondary Accent* |
|---|---|---|
| 1. clear | [*klɪəˆ*] | [*klɾˆ*] |
| 2. mayor | [*meəˆ*] | [*meˆ*] |
| 3. cares | [*kɛəˆz*] | [*kɛˆz*] |
| 4. cart | [*kaəˆt*] | [*kaˆt*] |
| 5. stores | [*stoəˆz*] | [*stoˆz*] |
| 6. sure | [*ʃʊəˆ*] | [*ʃʊˆ*] |
| 7. tower | [*taʊəˆ*] | [*taʊˆ*] |
| 8. tire | [*taɪəˆ*] | [*tāɪˆ*] |

The material just stated was "tested out" in three ways. It was *first* tested by a process of clipping magnetic tape recordings of rapid speech. Under primary accent, the tape could be clipped off so that the [*əˆ*] was removed and the previous vowel remained. Under secondary accent, the [*r*] concept could *not* be cut off the tape without removing the preceding vowel with it. *Second*, a frequency analysis was made and found that only vowel frequencies—and not the pre-vocalic [*r*] frequencies—were present when the so-called post-vocalic [*r*] was present in either primary *or* secondary accented positions. *Third*, sonograms were made on a sound spectrograph and studied in relation to other consonants and vowels. The postvocalic [*r*] came out consistently as a vowel or vowel-blend when studied in terms of formants. There appears to be enough evidence to call for further investigation. The evidence presents valid doubts regarding the conventional IPA [*r*] concept.

What are some implications if such new studies do appear to be valid? Some future questions could be:

1. Do we have a new set of vowels in [*aˆ*], [*rˆ*], [*ʊˆ*], etc.?
2. Is there a need to have some new vowel diagram that is a variation of the IPA? The Americans, in general, use the quadrangle of the IPA and I understand that some of the French use the triangle. I am developing one that is curved to match the curvature of the hard and soft palate.
3. Would this lend to a new approach to speech correction for those persons who cannot make the post-vocalic [*r*]?
4. Is this a cementing of the theory of language communication that the complete syllable is the acoustic signal for conveying meaning of thought?
5. Is there a need for having an international congress to propose ideas for revision, modernization, and standardization of our IPA? If so, I would be willing to work for such a conference.

*McDavid:*

1. The term "General American" has little validity. In Kurath's Word Geography of the Eastern United States (1949) it is pointed out that the major dialect regions of the Eastern States are a) Northern—New England, the Hudson Valley, and derivative settlements westward; b) Midland—Pennsylvania and derivative settlements to the South and West, including large areas of all of the Southern States; c) Southern—the older plantation settlements from Maryland south. A. H. Marckwardt, A. L. Davis, and Virginia McDavid have shown that in the Great Lakes basin there is a major dialect boundary crossing Ohio, Indiana and Illinois; Harold B. Allen has found a similarly sharp boundary in the Upper Midwest west of the Mississipi. These foundings have been replicated by such independent investigators as the late C. K. Thomas.

2. The boundary between "consonantal"and "vocalic" (-r-) in such words as *carrot* was shown by Thomas, some years ago, to cross Ohio, Indiana and Illinois.

3. As a footnote: in many southern and south Midland speakers, the strong consonantal intervocalic (-r-) is lost in *carrot* etc. often by speakers who have a strongly constricted (-r) in *cart* and the like.

*Hill:*

I think that Prof. Huckleberry might consider whether his rule that there can be no succession voiced-voiceless (or the reverse) consonants in the same syllable should not be revised to say that the rule does not apply to consonants where voice quality is not a distinctive feature, as with liquids and nasals.

*Vachek:*

Prof. Huckleberry may be perfectly right in speaking about the disappearance of /r/ from the phonetic point of view, but from the phonological point of view in the described type of American English pronunciation /r/ is preserved as a phoneme. In the New England (and the Southern) type of American English pronunciation, however, the /r/-phoneme really disappears, just as in the Southern British pronunciation.