

# OPRAH AND /AY/: LEXICAL FREQUENCY, REFEREE DESIGN AND STYLE

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## ABSTRACT

This sociophonetic study examines the monophthongization of /ay/ in the speech of Oprah Winfrey, the African-American host of a popular U.S. daytime talk show. We argue that both internal linguistic factors (lexical frequency), and external sociolinguistic factors (ethnicity of referee) influence the phonetic implementation of this variable. We extracted 229 tokens of /ay/ from samples of naturally-occurring speech of the speaker on the show. Tokens were identified as monophthongized by both auditory and acoustic criteria. We performed a binomial stepwise regression analysis which showed that both ethnicity of referee and lexical frequency were significant predictors of the variation in our data set, with both factors promoting monophthongization. Our results suggest that it is highly frequent words which emerge as the best candidates for the display of speaker style.

## 1. INTRODUCTION

Monophthongization of /ay/ to the long low center nucleus [a:] is an extensively documented feature of both Southern US and African-American English [1, 7, 11]. In this paper, we show that this ethnically and socially stratified sociophonetic variable has a stylistic dimension, co-varying with the ethnicity of the referee in the speech of a single speaker. Bell [2,3] argues that nonparticipants such as referees and overhearers can influence speech style. These claims can be difficult to test because of the confounding factor of a usually present audience. From videotaped segments of the *Oprah* show we isolated the influence of the referee (usually an upcoming guest scheduled to appear on the show) by selecting only segments where the speaker (Winfrey) and addressee (general TV/studio audience) were constant.

*Oprah Winfrey*, at the time of our recordings, was the nation's top-rated daytime television talk show, with an estimated 14 million daily viewers. Three quarters of this predominantly white audience consisted of women aged 18-54. The show's commercial success and social impact had combined to make Winfrey the top-earning woman in entertainment as well as one of the most visible African-American public figures [17]. An investigation of the speaking style of such a public figure might yield insights into the sociophonetic variation in public settings.

### 1.1. Stylistic Variation and Referee Design

We conceive of the sociophonetics of speaking style as going beyond traditional static dichotomies such as formal/casual or read/spontaneous. Speaking style can be seen as individual speakers' creative and proactive deployment of various elements in their repertoire. It is the linguistic implementation, at any given time, of a combination of the many varieties (standard, vernacular, African American English), registers (interview, babytalk, lecture) and degrees of formality at that speaker's disposal.

Style-shifting has been observed in the speech of Oprah Winfrey, and characterized as a device to appeal to a cross-

section of viewers. Analyses in the literature center on topic and lexical choice [13, 17]. Our discussion here will focus on vocalic variation.

Considering stylistic variation within the framework of audience design, [2] defines referees as "third persons not physically present at an interaction but possessing such salience for the speaker that they influence language choice even in their absence." (pg. 328). For the purposes of this paper, and to disentangle the effects of audience and addressee, we define the referee as an absent party about whom Winfrey is talking. Thus we tested Bell's hypothesis that a speaker may sometimes diverge from the style that is normally used for their addressee and shift to one used for an absent referee.

We selected portions of the show in which there was no guest on stage, and Winfrey was facing the camera and addressing the studio and television audience. Thus the audience and addressee were not only identical, but constant across segments. The genre was also constant, generally consisting of the introduction of a guest, or a preannouncement of segments scheduled for later in the show. The one element which did vary across these segments, then, was the person that Winfrey was introducing or discussing. We decided to test the hypothesis that the referee was salient, and that, through referee design, Winfrey's variable implementation of /ay/ from [ay] to monophthongized [a:] would signal a shift from her more common usage of General American English (GAE) to African American English (AAE). We hypothesized that Winfrey would adopt more features of AAE when talking about an African American guest, than when the guest was not African American.

## 2. METHODOLOGY

We extracted 229 words containing /ay/ from monologues from the Oprah Winfrey show, sampling speech as described above from a series of shows that aired during the 1996-97 season. In our analysis, only tokens which were identified as fully monophthongized by both auditory and acoustic criteria were treated as instances of monophthongization. All other tokens are regarded as diphthongs.

Two listeners performed an auditory analysis of the data: a token was coded as monophthongized only when both listeners agreed on the classification. To provide acoustic verification of the auditory analysis, the vowel quality was coded based on spectrographic displays: each token in the data set was labeled either as monophthong or as diphthong from wide band spectrograms. Labeling criteria for monophthongs were a largely steady state portion in the first two formants trajectories, whereas for the diphthong, we looked for a rise in F2 (indicative of fronting) and a fall in F1 (indicative of vowel height) during the vowel. F1 is inversely correlated with vowel height and should fall during the transition from the vowel nucleus to the glide, whereas F2 correlates with the back-front dimension and should rise.

Each labeled token was automatically time-normalized and the F1 and F2 values were extracted along 10 equidistant time points across the vowel. Figure 1 and Figure 2 show plots of the 10 mean values (with standard deviation bars) for F1 and F2 accordingly. The points are connected to show the average trajectory for F1 and F2, to capture the dynamics of the vowel. The purpose of the two figures is to show the variance of the mean at each normalized time point for the two formant frequency bands and to give the reader an idea of what the average formant trajectories for the [a] monophthongs and [ay] diphthongs look like. For these plots, we have considered all tokens of the data, and averaged over them. Elsewhere, similar graphic representations of formant frequency bands have been used [8] to show the dynamics of individual vowel tokens. We are aware of the pitfalls that lie in grouping tokens together regardless of their prosodic differences (and resulting durational differences) or differences contributed by the following and preceding segmental environment. Yet, this representation allows for an easy visual comparison between the two groups of vowels.

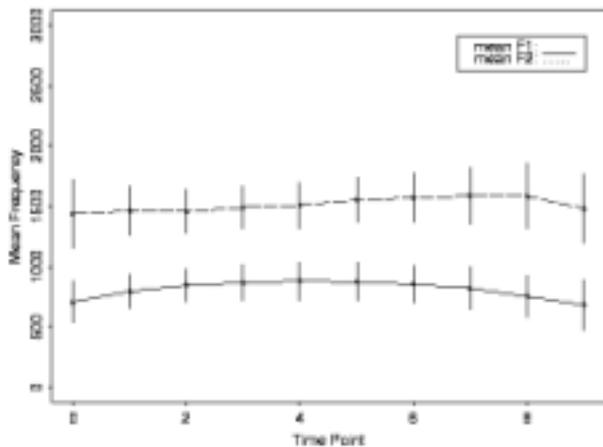


Figure 1. Average interpolated formant frequency trajectories based on 10 means (with standard deviation bars) for F1 and F2 for vowels classified as monophthongs

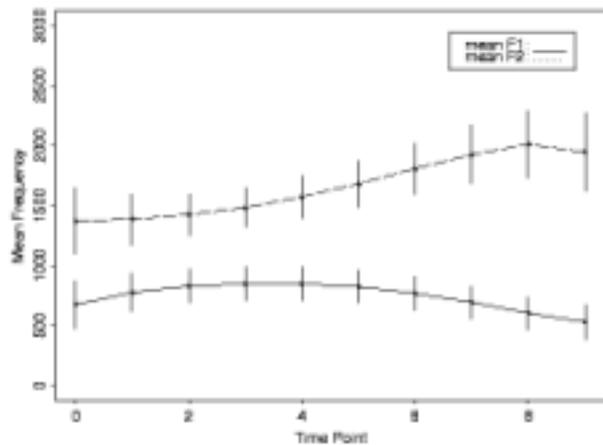


Figure 2. Average interpolated formant frequency trajectories based on 10 means (with standard deviation bars) for F1 and F2 for vowels classified as diphthongs.

### 3. RESULTS

#### 3.1. Ethnicity of Referee

An AA referee significantly increases the probability of monophthongization (ChiSquare=18.95, df=1, p<.001). This statistic is based on 195 tokens — only those tokens in our data set for which there was a clear referee. The distribution is shown in Table 1.

	diphthong	monophthong	total
AA referee	55	33	88
non-AA referee	96	11	107
total	151	44	195

Table 1. Ethnicity of referee and monophthongization

This is strong evidence that ethnicity of the referee plays an important part in influencing sociophonetic speech style. [20] show that ethnicity of interviewer (addressee) and topic (sometimes overlapping with referee as we have defined it) similarly influence morphosyntactic and sociophonetic variation, with speakers less likely to use AAE variables with Euro-American interviewer than with an African-American one. A related finding was reported by [6], who monitored the speech of a Cardiff travel agent, and found that the speaker emphasized affinity with the client by accommodating her speech style in five phonological variables.

Although contextual factors such as ethnicity of referee have been shown to be important in stylistic variation and audience design, our results here represent the first study, to our knowledge, to add instrumentally analyzed sociophonetic data to the findings in this area.

#### 3.2. Lexical Frequency

A second factor which facilitates the speaker’s monophthongization of /ay/ is lexical frequency. Frequent words are more prone to monophthongization. All items in the corpus were identified as “frequent” (occurring five or more times in our small corpus of Winfrey’s speech), or “infrequent” (occurring fewer than five times). Inflectional variants were treated as identical for the purposes of this frequency count. Frequent items are significantly more likely to undergo monophthongization than infrequent items. (ChiSquare=6.62, df=1, p<.025). The distribution is shown in Table 2, and based on all 229 tokens in our corpus.

	diphthong	monophthong	total
Frequent	105	47	152
Not frequent	66	11	77
Total	171	58	229

Table 2: Lexical frequency and monophthongization.

#### 3.3. Ethnicity and frequency as predictors of the data

We performed a binomial stepwise regression analysis on those 195 tokens for which both referee and lexical frequency information were available. The regression was performed with the Goldvarb program [19]. Both ethnicity of referee and lexical frequency were significant predictors of the variation in our data set. Of these significant factors, ethnicity of referee was the better predictor of monophthongization. An African-American referee had the effect of promoting monophthongization, with a probability weight of .688, while a non-African-American referee disfavored monophthongization at 0.343 (where probability

weights greater than .5 (.5-1.0) promote monophthongization and probability weights less than .5 (.5-0) inhibit it.)

High lexical frequency (appearing five or more times in the corpus) favored monophthongization, (with a probability weight of 0.588), while low lexical frequency (appearing less than five times) inhibited monophthongization (probability weight of 0.350). The entire model, incorporating both lexical frequency and ethnicity of referee, was significant to  $p < .03$ . (Input 0.185, log likelihood = -91.218).

#### 4. DISCUSSION

##### 4.1. Monophthongization as a reductive process

Lindblom's model [12] of hypo- and hyper-speech suggests that speakers will adopt a clear speaking style in conditions under which perception may be difficult. In cases in which the hearer is estimated to have few obstacles to perception, however, features of clear speech will be absent. This prediction, together with the rapidly growing body of evidence that frequency is important for speech perception [14, 18 and others] leads us to predict that reductive phenomena should be most prevalent in frequent words.

Wright [22] investigated the centralization of vowels in a data base of "easy" and "hard" monosyllabic words. Easy words are high frequency, and have few, and low frequency, neighbors. Hard words are low frequency words which reside in dense neighborhoods populated by many high frequency words [see 14]. Wright showed that the vowels speakers produced when reading easy words were significantly more likely to be centralized than the vowels in hard words. This provides some evidence that reductive processes are more likely to be more advanced in frequent words. A similar conclusion can be drawn from the sound change literature on lexical diffusion, where it has been shown that frequent words are often leaders of change [16]. Bybee [5] argues that frequency effects in the spread of a sound change are akin to familiarity effects: thus it is not only frequency of the word but its use in casual or familiar social situation that allows it to undergo reduction or change at a faster rate.

Word frequency also has an effect on non-reductive processes. [15] investigated the variable raising of /l/ in the speech of California Chicano English speakers, and found that within this ethnic contact variety, a subset of monomorphemic pronominal words with high frequency led the incidence of raising. Similar results are reported by Houston [9] in her morphophonological study of the variable (ING), where she finds that of all the grammatical categories, the same high-frequency lexical set exhibits the highest probability and percentage of velar application in all American and British dialects that she investigated [9:152-154, 354].

While there has not to our knowledge been any work focussing on the extent to which frequency affects monophthongized /ay/ in AAE, we might not be surprised to discover that this monophthongization in AAE is more extreme in frequent words than in less frequent words.

##### 4.2. Frequent words as the locus of style

One of the questions that arises from Bell's account of audience design and referee design is the process of selection of the lexical items that will carry the work of the variation. Work in the area of grammaticalization [21] has identified lexical frequency as determining possible areas of the language where innovations in meaning can take place. It is in highly frequent words that a speaker finds the crucial combination of a) ease of processing [10] and b) the repeated opportunity of presentation that would be

needed to layer new grammatical or social meaning. In the area of perception of frequent words Boyland [4] finds that morphosyntactic combinations that co-occur frequently come to be processed and stored as single units, thereby freeing up some cognitive load and making these easy-to-process, highly frequent items candidates for taking up different linguistic functions. One of those functions might be the display of epistemic stance or propositional attitude [21], as grammaticalization research continues to find that it is highly frequent words that are the best candidates for semantic bleaching, phonological reduction, decategorialization and reassignment to new categories [5].

Our results regarding the importance of lexical frequency in the monophthongization of /ay/ for a single speaker, combined with the observed relationship between referee and monophthongization in the sociolinguistic modality, support a model where it is highly frequent words which emerge as the best candidates for the display of speaker style.

#### 5. CONCLUSION

This paper demonstrates the influence of referee design, an external social factor, and lexical frequency, an internal linguistic factor, in the variable realization of /ay/ in the speech of Oprah Winfrey.

There remain several sociophonetic and broader sociolinguistic questions that might be followed up in this study. In the sociophonetic realm, one might investigate the interplay of various simultaneous sociophonetic variables in the creation of a particular style. If monophthongization of /ay/ plays a role in signalling affiliation with a particular referee, what might other combinations of sociophonetic variables tell us about additional contextual factors?

Some macro sociolinguistic issues that arise include the relationship between language attitudes and linguistic variation. Winfrey has in the past expressed strong language attitudes disapproving of African American English, and justifying her sentiments based on the documented history of its reception [13]. These attitudes were particularly salient during the Ebonics controversy of 1997-98. During one show, Winfrey calls Ebonics the "Ebonic plague." How do we reconcile her negative attitudes toward AAE with her stylistic use in referee design of a feature that has been associated with the AAE-speaking community?

The results presented here do not mean that this speaker's variably monophthongal /ay/ is being used to straightforwardly or even consciously mark membership in the AAE community, nor do we mean to imply that the speaker has the limited choice of only two varieties (GAE and AAE) in her repertoire. Among other possibilities, she could be using /ay/ monophthongization in combination with other features in the production of a more delicately nuanced style that we have only just begun to uncover. What is striking from this data is the relation (without assuming causation) between speaker monophthongization, lexical frequency, and African-American addressees in the discourse.

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#### NOTES

1. The authors are listed in alphabetical order.

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