

Old Patterns Through a New Medium: Assessing Gender Differences and Diachronic Change in the Use of African-American English by Celebrities on Twitter

Tommy Pieterse

Research Master *Linguistics and Communication Sciences*, Radboud University
Nijmegen

Abstract

Previous sociolinguistic studies concerning the speech of African-Americans have established that how African-Americans place themselves on the spectrum between African-American English (AAE) and Standard American English (SAE) depends on demographic factors, one of which is gender. Other studies indicate that male African-American celebrities place themselves closer to AAE on the AAE-SAE spectrum than their female counterparts. While AAE has gained in cultural capital over the last decades, anecdotal evidence hints at the possibility of a diachronic decline in its use by celebrities. The relatively recent rise of social media provides new opportunities to research the impact of these factors. The purpose of this study was to investigate the effects of gender and time on the use of AAE-related features by African-American celebrities on Twitter. Data was collected from the Twitter accounts of 100 African-American celebrities. The analysis of the data revealed a significant effect of gender on the use of AAE-related features, with male celebrities using more features. This indicates a link between the use of AAE by celebrities and the general African-American population. It also indicates that demographic factors that influence the use of AAE-related features in spoken language carry over onto social media, which offers future research possibilities for the study of AAE and other dialects. No significant diachronic change in the use of AAE on Twitter was found.

Keywords: African-American English, Twitter, gender, diachronic change, celebrity language

1. Introduction

No dialect spoken in the United States has received as much attention from the sociolinguistic community as African-American English (AAE) has over the past few decades. As its name states, AAE is a dialect spoken mostly by African-Americans (Tamasi & Antieau, 2014). It differs from Standard American English (SAE) in a number of aspects. For example, while someone speaking SAE might say “He isn’t red, he’s blue,” someone speaking AAE would more likely say “He *ain’t* red, he blue.” An important aspect of the use of AAE is that it is generally negatively evaluated by listeners. Both white Americans and African-Americans rate AAE more negatively than SAE in professional contexts (Larimer et al., 1988; Speicher & McMahon, 1992; Doss & Gross, 1994; Koch & Gross, 1997). At the same time, however, many African-Americans—especially those who strongly identify with their ethnoracial identity—tend to rate AAE-heavier styles more positively than SAE in more informal social contexts (White et al., 1998; Speicher & McMahon, 1992). Additionally, in recent years, African-American culture has gained in cultural capital outside of African-American communities, not in the least due to the influence of hip-hop culture (Tamasi & Antieau, 2014). This increase in popularity has also influenced the evaluation and use of AAE, with even some non-African-American artists using AAE linguistic features in their hip-hop performances (Eberhardt & Freeman, 2015). AAE, therefore, finds itself in a strange position, where its use is considerably popular and looked down upon at the same time.

Today, most African-Americans find themselves on a spectrum between AAE and SAE (Britt & Weldon, 2015). Speakers can alter their position on this spectrum closer to AAE by using linguistic features that are associated with AAE, like the pre-verbal negator *ain’t*, while also being able to move closer to SAE by replacing features of AAE with SAE-associated features. Exactly what determines how African-Americans place themselves on the AAE-SAE spectrum has been the subject of a wide range of previous studies. Generally, SAE is spoken in more formal settings, while AAE is spoken more in informal settings (Fought, 2006). Other studies have found that certain sociodemographic factors are also correlated with the use of AAE. Britt and Weldon (2015) report that African-American women generally speak in a way that more closely resembles SAE than the speech of African-American men. They also assert that a similar relationship exists between working-class and middle-class African-Americans, with middle-class African-Americans speaking in a way that more closely resembles SAE. These findings are supported by Fought (2006), but she simultaneously points to the fact that these sociodemographic distributions are not universal. She refers to Edwards (1997), who found no effect of gender on the use of

African-American English. However, as both Fought (2006) and Edwards (1997) acknowledge, this was mostly an effect of “the very similar social roles filled by men and women in this community” (Fought, 2006, p. 52). The most important conclusion to draw about the relationship between sociodemographic factors and the use of AAE is that it seems to be the case that African-American English is generally stratified along gender and class lines, although this stratification is not universal.

Another specific type of community where the use of AAE might differ from the general population is that of celebrities, who differ from their “regular” counterparts in that their speech will likely be heard by a very large audience. The number of studies delving into language use by African-American celebrities remains very low. Luckily, Ezgeta (2012) provides a study of the use of AAE by African-American celebrities during interviews. The main finding of this study is that male African-American celebrities, especially those with a hip-hop affiliation, use the most African-American English when compared to other African-American celebrities. Female African-American celebrities, on the other hand, regardless of hip-hop affiliation, produced language that was closer to SAE. These results line up with the previously reported effect of gender on the use of AAE. Differences between socioeconomic classes do not play an important role here, as celebrities mostly belong to the upper class.

It should be noted that all the previously mentioned studies have focused on spoken language. Recent years have seen the rise of many large social media platforms, such as Facebook and Twitter. These platforms have opened sociolinguistics to an entirely new source of linguistic data. Sociolinguistics studies that make use of Twitter data have slowly started appearing. Important to note is the recurring conclusion that Twitter language use seems to quite closely resemble spoken language, in terms of both phonological features (expressed through orthography) and grammar (Eisenstein, 2015; Hilte et al., 2019; Gray et al., 2020). Studies have focused on lexical (Bamman et al., 2014; Shoemark et al., 2017; Shoemark, 2020), phonological (Tatman, 2016; Ilbury, 2019), and morphosyntactic (Ljubešić et al., 2018; Willis, 2020) linguistic features. However, currently, the study of the AAE-SAE spectrum within the scope of the African-American celebrity community has yet to reach its potential, as no Twitter-based studies focusing on this specific topic have been conducted. This is surprising for two reasons. Firstly, the availability of large sets of publicly available tweets indicates it could be a worthwhile source of data. Secondly, even a cursory examination of the Twitter behavior of well-known African-Americans reveals remarkable behavior:

- (1) “im at knots berry farms n my butts 2 big 2 fit in da seats on ride. ahhhhhh (dats me yellin)” (O’Neal, 2009)
- (2) “Charles & I are entering COUPLES THERAPY. We know everyone can benefit from this conversation now. We’ll keep it real, entertaining & answer all your questions along the way. We hope to see you at your next virtual event! @hwaspeakers #RelationshipGoals #GetChuckOnSocialMedia” (O’Neal, 2020)

The tweets above were made by the same well-known African-American basketball player, Shaquille O’Neal. Behavior like this hints at the possibility of a diachronic decline in the use of AAE by African-American celebrities. This is surprising, as simultaneously, African-American English has been gaining in cultural capital, and as previously discussed, has even been appropriated by non-African-American artists. Single instances like the example above are merely anecdotal, however, and are not yet enough to make any sort of claim. A study on the topic of the use of AAE by celebrities on Twitter should not only delve into the sociodemographic variable of gender, but it should also take into account diachronic evolution. Investigating the influence of these factors could shed light both on the language use of African-American celebrities, as well as the usefulness of Twitter data for this type of sociolinguistic research in general.

The purpose of this study is to answer the following two questions:

- (1) To what degree is the use of features belonging to African-American English by African-American celebrities on Twitter influenced by the gender of the tweeter?
- (2) To what degree is diachronic change present in the use of features belonging to African-American English by African-American celebrities on Twitter?

This question will be answered by composing a list of relevant celebrity accounts and automatically extracting and analyzing relevant linguistic features in their tweets. Based on previously conducted research on the use of AAE both by “regular” speakers and celebrities, I hypothesize that a gender difference exists on Twitter as well, with men, on average, tending to use more AAE-associated features than women. Considering on one hand the cultural capital of AAE, and on the other the anecdotal evidence hinting at a decline in the use of AAE by celebrities, I consider two possible hypotheses on the topic of diachronic change to be within the realm of possibility: either the use of AAE by celebrities on Twitter has been declining, or it has

been increasing. The validity of these hypotheses will be assessed by the collection and analysis of data from African-American celebrities' public Twitter accounts.

2. Method

2.1 Corpus

For this study, a corpus based on the tweets of African-American celebrities was constructed. In order to ensure all subjects were of roughly the same social status and popularity, only celebrities who had appeared on one of the covers of *Ebony* magazine since 2005 were selected. Barnett and Flynn (2014) describe *Ebony* as a magazine “for Black people, by Black people,” with a circulation “that peaked at nearly two million” (p. 30). The publication’s popularity and cultural importance mean that any person appearing on its cover would need to be significantly popular and culturally relevant. All tweets for 50 female celebrities and 50 male celebrities were collected using *snsrape* (JustAnotherArchivist, 2020), a tool designed specifically for the extraction of social media data. The constructed database included a user identifier, text, and the date of posting for each collected tweet. Tweets containing only images or URLs were filtered out of the dataset after the collection process. The number of remaining tweets per person ranged from 79 to 71,131 ($M = 10,306.37$, $SD = 13,262.63$), with a total of 1,030,637 tweets, and the year of a person’s first tweet ranged from 2009 to 2019 ($Mdn = 2010$, $SD = 2.48$). The end of the year 2020 was chosen as a cut-off point in order to prevent a low sample size in what would have otherwise constituted the year 2021 in the dataset.

2.2 Analytic Approach

AAE has many associated linguistic features. The most comprehensive work that documents these features remains Rickford (1999), despite its age. However, not all of these features were suitable for the purposes of this study — some are nearly impossible to determine accurately without highly intricate semantic analysis. This is due to these features depending on very specific semantic contexts, such as the use of existential *it is*. A study conducted by Renn and Terry (2009) has revealed that analyses based on a reduced set of AAE features are still largely reliable in terms of determining relative dialect density. Therefore, a reduced set of features was constructed based on Rickford (1999), with features being selected based on their suitability in terms of ease of detection:

- (1) The use of *steady* as an intensified continuative marker
- (2) The use of *don't but*
- (3) The use of *ain't* as a general preverbal negator
- (4) The use of the quasi-modals *liketa* and *poseta*
- (5) The use of *finna* or *fitna* to mark the immediate future
- (6) The use of *thang* instead of *thing*
- (7) The use of *been* instead of *has/have been*
- (8) The use of *done* to emphasize the completed nature of an action
- (9) The use of *be done* for resultatives or the future/conditional perfect
- (10) The use of double modals
- (11) The use of *nem* or *and (th)em* to mark associative plurals

The decision was made to classify each tweet as either containing one or more AAE features (represented by the number 1) or not (represented by the number 0). This method of counting was selected over an occurrence-based method (with a tweet with more occurrences having a higher score) because this would likely have led to higher scores for longer tweets, as the chance of a feature occurring in a text increases as the size of that text increases. The classification and analysis of the tweets were handled by a custom Python script that employed regular expressions, tokenization, and part-of-speech-tagging to detect the presence of the features. Once all tweets were categorized, the mean score for each person was automatically calculated. The mean score for each calendar year per person was also calculated in order to capture the diachronic dimension of the data. The calculated scores will be referred to as *dialect density measurement* (DDM) scores. While a more sophisticated method where the occurrence of AAE features would be compared to the occurrence of equivalent SAE features was considered, this approach does not lend itself well to the AAE-associated features included in this study, as some of these features have no clear one-to-one corresponding SAE feature. An example of this is feature 8, the use of *done* to emphasize the completed nature of an action.

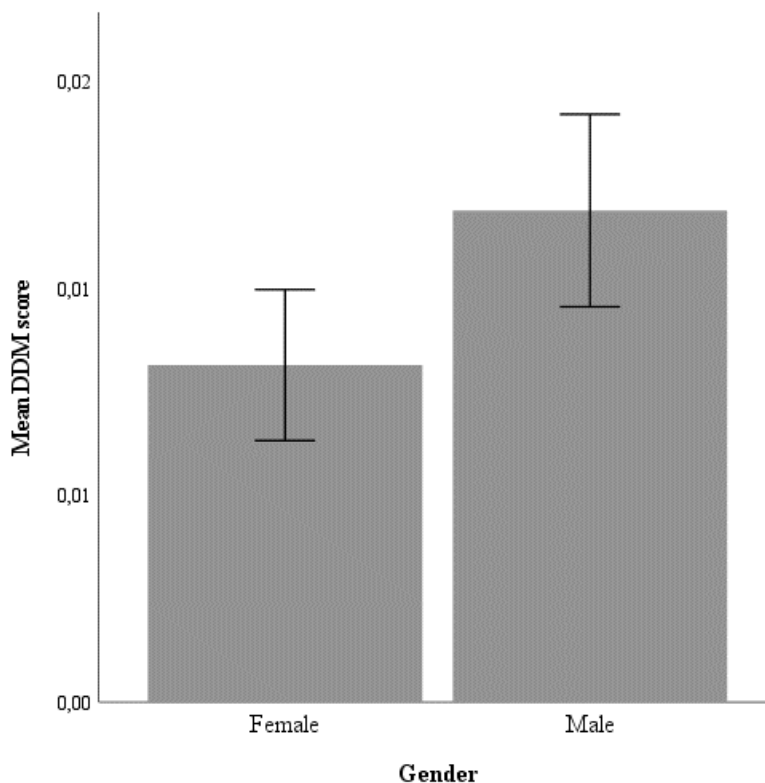
3. Results

Firstly, total DDM scores were compared based on gender. On average, men had a higher DDM score ($M = 0.01187$, $SD = 0.00818$) than women ($M = 0.00814$, $SD = 0.00642$), which is visible in Figure 1. While a small number of minor outliers was detected, these were determined not to be anomalous. Furthermore, Levene's test did not yield a significant effect, indicating the assumption of homogeneity was not violated. An

independent-samples *t*-test indicated that the difference in DDM scores between female and male was significant with a medium effect size ($t(98) = 2.539, p = .013$, Cohen's $d = .51$, BCa 95% CI [0.000888; 0.006579]). This result lends credibility to the hypothesis that male African-American celebrities use more features of AAE in their language on Twitter than female African-American celebrities.

Figure 1

Mean DDM Score by Gender (Female and Male)



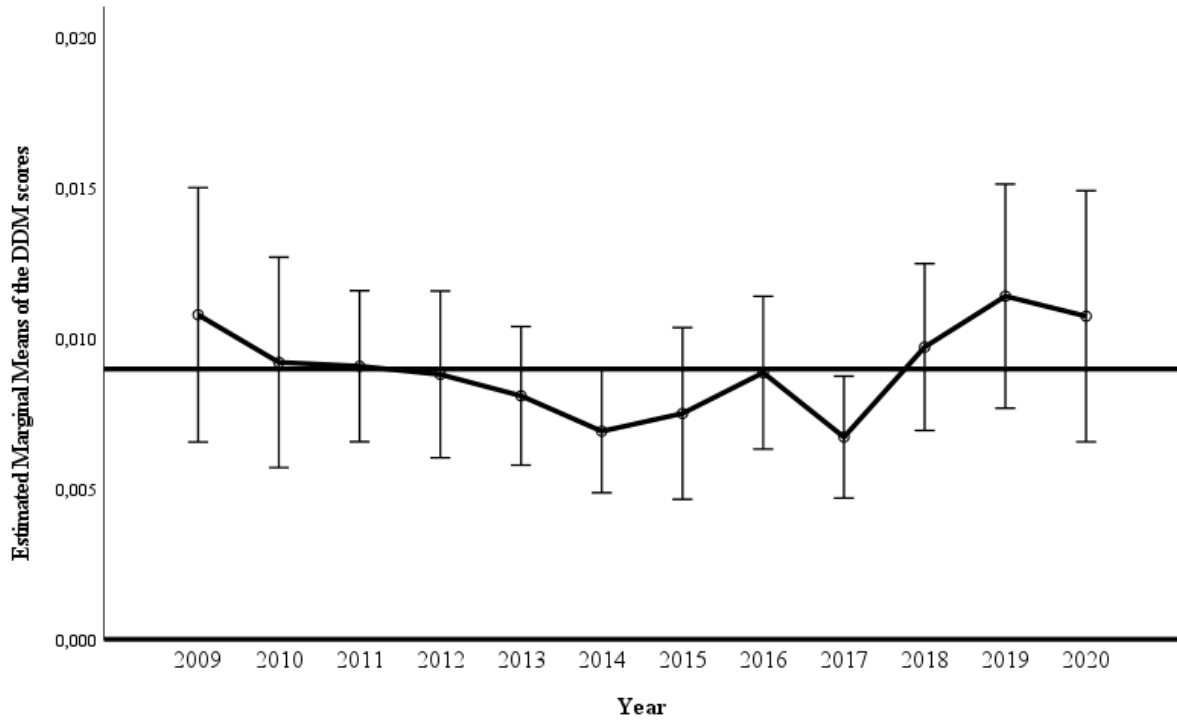
Note. Error bars represent a 95% confidence interval (CI).

In order to assess the effect of time on DDM scores, a repeated-measures ANOVA with a repeated contrast was conducted, with the mean DDM scores for each calendar year constituting a variable. This revealed no significant effect of year on the mean DDM score ($F(6.311, 157.769) = 1.404, p = .213$, partial $\eta^2 = .053$). Because of the lack of a significant effect, the repeated contrasts could not be interpreted. The estimated marginal means per year are visible in Figure 2. It should be noted that a few outliers were detected (about 3.4 per year). These were determined to be caused by a lack of data in those years for those persons, leading to the removal of those data

points. Furthermore, Mauchly's test indicated a lack of sphericity ($\chi^2 (65) = 98.047, p = .007$), necessitating the use of Greenhouse-Geisser-corrected values.

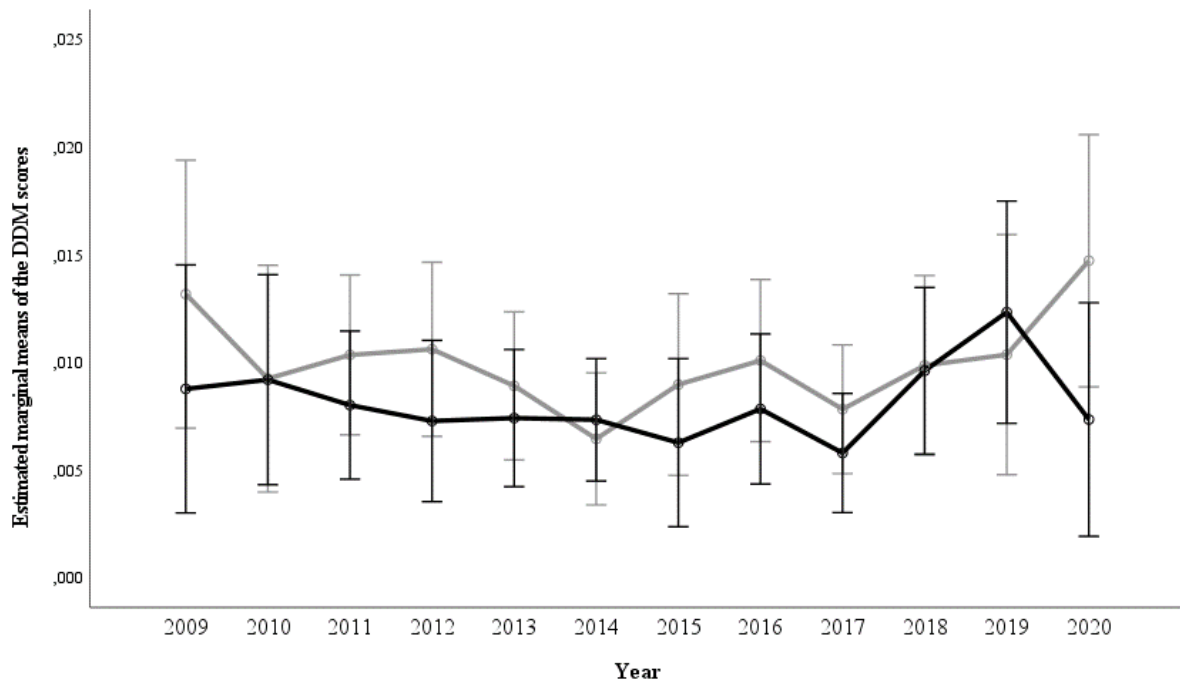
Figure 2

Estimated Marginal Means for the DDM Score per Year



Note. Whiskers indicate a 95% CI and the bold line indicates the grand mean.

In order to assess whether any diachronic effect was possibly gender-specific, a factorial mixed ANOVA was conducted on the same dataset with Gender as the between-subjects variable and Year as the within-subjects variable. Mauchly's test indicated a lack of sphericity for the Year variable ($\chi^2 (65) = 95.372, p = .012$), necessitating the use of Greenhouse-Geisser-corrected values. The factorial mixed ANOVA did not reveal a significant interaction between Year and Gender ($F(6.145, 147.481) = 0.942, p = .469, \text{partial } \eta^2 = .038$). The estimated marginal means per year for each gender are visible in Figure 3.

Figure 3*Estimated Marginal Means for the DDM Score per Year by Gender*

Note. The scores for women are indicated in black and the scores for men are indicated in dark grey. Whiskers indicate a 95% CI.

4. Discussion

While not all comparisons have led to significant differences, important implications still flow from these results. Firstly, as far as the first research question on the effect of gender on the use of AAE by celebrities is concerned, the hypothesis that male African-American celebrities use more AAE-associated features than their female counterparts has been confirmed by the data. This lends support to the results of the Ezgeta (2012) study, which reports a similar gender-based difference. Because the results reported in Ezgeta (2012) line up with the effect of gender in the general African-American population as reported by Britt and Weldon (2015) and Fought (2006), the results lend credence to the idea that the use of African-American English in celebrity communities lines up with language use in the general African-American population. It should be noted, however, that the gender comparison was not without its limitations: due to the fact that there were no reliable quantitative studies into the use of African-American English by individuals who fall outside of the female/male gender binary, this study was not able to approach gender as a spectrum. Additionally, DDM scores for both genders remained low in terms of absolute numbers. While this does not influence the

significance of the comparisons, it would be wise to investigate the use of AAE on Twitter in terms of absolute numbers as well.

Concerning the second research question on diachronic change in the use of AAE by African-American celebrities, the diachronic comparison yielded no significant effect. This means that neither hypothesis was confirmed. This could mean one of two things. Either, it could be that an effect *does* exist, but that it was not detected, or it could mean that the effect really is not there. A lack of a significant result does not allow us to determine which of these possibilities is true. The only way to gather more information on the presence of diachronic change in the use of AAE by celebrities on Twitter would be to conduct another study. One thing that could improve the likelihood of a significant effect (if it, in reality, exists) is a higher sample size. While the total number of tweets analyzed numbered over one million, the number of separate subjects was about 100. While more accounts could not be found using the celebrities that appeared on the cover of *Ebony* magazine, a future study could attempt to find new data sources in order to increase the subject pool.

These results also carry a number of implications for future research. The results on gender provide further evidence that sociolinguistic differences that exist in spoken contexts are carried over into the realm of social media in one form or another. Based on the significance of the results, future studies could delve into the use of African-American English on Twitter by other (non-celebrity) African-American communities as well. Future studies could also investigate how other demographic factors, such as class background, factor into this. However, it should be noted that differences in socioeconomic class might be more difficult to determine than a difference in gender, as it would require more in-depth biographical information for each subject. Studies similar to this one could also be conducted on dialects that exist in a similar spectrum-based situation, and perhaps also making use of data from different social media platforms. However, few platforms are as suitable as Twitter, as Twitter provides data that is both easily accessible and not significantly limited in size.

5. Conclusion

The purpose of this study was to answer two questions: to what degree is the use of features belonging to African-American English by African-American celebrities on Twitter influenced by the gender of the tweeter, and to what degree is diachronic change present in the use of features belonging to African-American English by African-American celebrities on Twitter?

Using the automated extraction and analysis of data from the accounts of African-American celebrities, clear support for the hypothesis that male African-American celebrities use more AAE features than female African-American celebrities was found. This also implies a link between the use of AAE by celebrities and the use of AAE by the general population, and that sociolinguistic differences that exist in spoken language carry over into social media. This opens up further research into the distribution of AAE and other dialects on social media. The set of hypotheses connected to the second research question, which predicted either an increase or a decrease in the use of AAE-related features over time, were not confirmed, as no significant result was found. Future research with a larger sample size could shed more light on this dimension of the use of AAE by celebrities, although such an effect is not guaranteed.

References

- Bamman, D., Eisenstein, J., & Schnoebelen, T. (2014). Gender identity and lexical variation in social media. *Journal of Sociolinguistics*, 18(2), 135–160. <https://doi.org/10.1111/josl.12080>
- Barnett, M., & Flynn, J. E. (2014). A century of celebration: Disrupting stereotypes and portrayals of African Americans in the media. *Black History Bulletin*, 77(2), 28–33. <https://doi.org/10.1353/bhb.2014.0005>
- Britt, E., & Weldon, T. L. (2015). African American English in the middle class. In S. Lanehart (Ed.), In S. Lanehart (Ed.), *The Oxford handbook of African American language* (pp. 800–816). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199795390.013.44>
- Doss, R. C., & Gross, A. M. (1994). The effects of Black English and code-switching on intraracial perceptions. *Journal of Black Psychology*, 20(3), 282–293. <https://doi.org/10.1177/00957984940203003>
- Eberhardt, M., & Freeman, K. (2015). ‘First things first, I’m the realest’: Linguistic appropriation, white privilege, and the hip-hop persona of Iggy Azalea. *Journal of Sociolinguistics*, 19(3), 303–327. <https://doi.org/10.1111/josl.12128>
- Edwards, W. (1997). The variable persistence of Southern Vernacular sounds in the speech of inner-city black Detroiters. In C. Bernstein et al. (Eds.), *Language variety in the South revisited* (pp. 76–86). The University of Alabama Press.

- Eisenstein, J. (2015). Systematic patterning in phonologically-motivated orthographic variation. *Journal of Sociolinguistics*, 19(2), 161–188.
<https://doi.org/10.1111/josl.12119>
- Ezgeta, M. (2012). *The influence of social factors on variability of selected AAVE features in the interviews with African-American celebrities* [Doctoral dissertation, University of Maribor]. ProQuest.
- Fought, C. (2006). *Language and ethnicity*. Cambridge University Press.
<https://doi.org/10.1017/cbo9780511791215>
- Gray, T. J., Danforth, C., & Dodds, P. S. (2020). Hahahahaha, duuuuude, yeeesss!: A two-parameter characterization of stretchable words and the dynamics of mistypings and misspellings. *PLOS ONE*, 15(5), 1–27.
<https://doi.org/10.1371/journal.pone.0232938>
- Hilte, L., Vandekerckhove, R., & Daelemans, W. (2019). Expressive markers in online teenage talk: A correlational analysis. *Nederlandse Taalkunde*, 23(3), 293–323.
<https://doi.org/10.5117/NEDTAA2018.3.003.HILT>
- Ilbury, C. (2019). “Sassy Queens”: Stylistic orthographic variation in Twitter and the enregisterment of AAVE. *Journal of Sociolinguistics*, 18(2), 135–160.
<https://doi.org/10.1111/josl.12080>
- JustAnotherArchivist. (2020). *snsrape* (Version 0.3.4) [Python script]. GitHub.
<https://github.com/JustAnotherArchivist/snsrape>
- Koch, L. M., & Gross, A. (1997). Children’s perceptions of Black English as a variable in intraracial perception. *Journal of Black Psychology*, 23(3), 215–226.
<https://doi.org/10.1177/00957984970233003>
- Larimer, G. S., Beatty, E. D., & Broadus, A. C. (1988). Indirect assessment of interracial prejudices. *Journal of Black Psychology*, 14(2), 47–56.
<https://doi.org/10.1177/00957984880142003>
- Ljubešić, N., Miličević Petrović, M., & Samardžić, T. (2018). Borders and boundaries in Bosnian, Croatian, Montenegrin and Serbian: Twitter data to the rescue. *Journal of Linguistic Geography*, 6(2), 100–124. <https://doi.org/10.1017/jlg.2018.9>
- O’Neal, S. R. [@SHAQ] (2009, August 20). im at knots berry farms n my butts 2 big 2 fit in da seats on ride. ahhhhhh (dats me yellin) [Tweet]. Twitter.
<https://twitter.com/shaq/status/3435123096>

- O'Neal, S. R. [@SHAQ] (2020, August 25). Charles & I are entering COUPLES THERAPY. [Tweet]. Twitter.
<https://twitter.com/SHAQ/status/1298298855214080001>
- Renn, J., & Terry, J. M. (2009). Operationalizing style: Quantifying the use of style in the speech of African American adolescents. *American Speech*, 84(4), 367–390.
<https://doi.org/10.1215/00031283-2009-030>
- Rickford, J. R. (1999). *African American Vernacular English: Features, evolution, educational implications*. Blackwell.
- Shoemark, P., Sur, D., Shirmpton, L., Murray, I., & Godwater, S. (2017). Aye or naw, whit dae ye hink? Scottish independence and linguistic identity on social media. In *Proceedings of the 15th conference of the European chapter of the Association for Computational Linguistics: Volume 1, long papers*. (pp. 1239–1248). Association for Computational Linguistics.
- Shoemark, P. (2020). *Discovering and analysing lexical variation in social media text*. [Doctoral dissertation, University of Edinburgh]. ERA.
- Speicher, B. L., & McMahon, S. M. (1992). Some African-American perspectives on Black English Vernacular. *Language in Society*, 21(3), 383–407.
<https://doi.org/10.1017/s0047404500015499>
- Tamasi, S., & Antieau, L. (2014). *Language and linguistic diversity in the US: An introduction*. Routledge. <https://doi.org/10.4324/9780203154960>
- Tatman, R. (2016). “I’m a spawts guay”: Comparing the use of sociophonetic variables in speech and Twitter. *University of Pennsylvania Working Papers in Linguistics*, 22(2), 161–170.
- White, M. J., Vandiver, B. J., Becker, M. L., Overstreet, B. G., Temple, L. E., Hagan, K. L., & Mandelbaum, E. P. (1998). African American evaluations of Black English and Standard American English. *Journal of Black Psychology*, 24(1), 60–75.
<https://doi.org/10.1177/00957984980241005>
- Willis, D. (2020). Using social-media data to investigate morphosyntactic variation and dialect syntax in a lesser-used language: Two case studies from Welsh. *Glossa: A Journal of General Linguistics*, 5(1), 103, 1–33.
<https://doi.org/10.5334/gjgl.1073>