

Longevity of an ethnolectal marker in Australian English: word-final (er) and the Greek-Australian community

Elena Sheard

ARC Centre of Excellence for the Dynamics of Language, Australian National University

elena.sheard@anu.edu.au

Abstract

This paper builds on a prior study of (er) lengthening in Australian English that demonstrated (er) in prosodically final position (*other*, *remember*) has displayed incremental lengthening between the 1970s and 2010s, a change led by Greek Teenagers in the 1970s. Here, I extend the analysis to subsequent generations of Greek Australians. Analyses of 3941 prosodically final (er) tokens reveal that Greek-Australian Adults born in the 1960s maintain their leading role in the lengthening of (er). Young Adults born in the 1990s, however, display diminished ethnic differentiation, demonstrating limited longevity of the ethnolectal status of (er).

Index Terms: ethnic variation, Australian English, sociophonetics, word-final (er), Greek Australians

1. Introduction

Ethnic minorities have long been documented as participants in language variation. They have also been identified as potential leaders of language change in multilingual urban centres such as London [1], Gothenburg [2], and Sydney [3]. This study shifts focus to the longevity of ethnic differentiation for a known ethnolectal feature of Australian English: word-final (er). While we know that Greek-Australians led the lengthening of (er) in the 1970s [4], we do not know whether they continue to be differentiated from other ethnic communities in the 2010s. This analysis tracks the Greek-Australian community over two time points, three age groups, and two generations. When combined with comparable data from Italian- and Anglo-Australians, we can further understand the role of ethnic minorities in language change, and more accurately assess the ethnolectal status of (er) over time.

In 2020, Grama, Travis and Gonzalez [4] conducted a real-time analysis of 193 socially stratified Australians of Anglo, Greek, Italian, and Chinese background as part of the Sydney Speaks project. This analysis covered three generations and four age groups of speakers (Adults born in the 1930s, Teens and Adults born in the 1960s and Young Adults born in the 1990s) and identified that (er) lengthening progressed incrementally over time. This change was restricted to Intonation-Unit (IU) final position, and was conditioned by ethnicity, class, and gender. Specifically, the variable first lengthened in the speech of Greek- and Italian-Australian Teenagers in the 1970s, followed by Working Class Anglo- and Italian-Australian Adult women, before being taken up by the rest of the community in the 2010s. The Anglo-Australian community effectively caught up to the benchmark set by the Greek- and Italian-Australian 1970s Teens.

These findings were consistent with previous research that has identified (er) as an ethnically marked variable. For

example, Clyne, et al. [5] identified an open final vowel in /iə/ as one of the seven ‘most conspicuous phonological features’ of the Greek ethnolect. Warren [6] also noted the widespread realisation of (er) as ‘[a] in final syllables’ as a salient feature of ‘ethnic’ Australian English. Acoustic analyses of (er) realisation in Australian English have also identified ethnic differentiation [e.g. 7, 8]. Kiesling’s [7] analysis of 6 Anglo and 15 non-Anglo speakers (including 7 Greek- and 2 Italian-Australians) indicated that the ‘significant pronunciation difference between Anglo and non-Anglo speakers’, was most pronounced for Greek-Australians, who produced a backer and longer vowel, often in combination with High Rising Tone. As noted in Grama, Travis and Gonzalez [4], representations of (er) in Australian media have also supported an association with the Greek-Australian community.

Grama, Travis and Gonzalez [4] hypothesised, based on the patterning of the three age groups, that the ethnic differentiation in (er) realisation had diminished in the 2010s. However, data from the Greek-Australian community in the 2010s was not available at the time of writing. This leaves a gap in our knowledge about the status of (er) as an ethnolectal marker of the Greek-Australian community over time, and the role of this community in progressing this change in the 2010s. This study addresses this gap by extending the analysis of previously existing Sydney Speaks data to new data from Greek Australian Adults (n = 13) and Young Adults (n = 6). By including this new data, we can track the Greek-Australian community relative to their Anglo- and Italian-Australian peers in real and apparent time across two time points (1970s and 2010s), three age groups (1970s Teens, 2010s Adults and Young Adults) and two generations (1970s Teens and 2010s Adults born in the 1960s, 2010s Young Adults born in the 1990s). We can therefore identify whether Greek-Australians in Sydney remain ahead in this change and, by extension, assess the longevity of (er) as an ethnolectal marker of this community.

2. Methods

Word-final (er) is here defined as ‘unstressed /ə/ in word-final position in minimally disyllabic words with a following *r* in the orthography’, as in [4]. The lengthening of (er) has occurred specifically in open syllables in prosodically final position, with this degree of lengthening not shared by tokens in prosodically medial position [4]. This variable will henceforth be referred to as (er), noting that it occurs specifically in word-final position.

2.1. Corpus and participants

Participants are drawn from a corpus of sociolinguistic interviews conducted with 171 younger and older speakers over two time periods, as part of the Sydney Speaks project [9]. The first group of interviews were recorded in the late 1970s for the Sydney Social Dialect Survey (SSDS), conducted by Barbara

Horvath [3]. Here, I draw on those interviews with Teenagers born in the 1960s. The second group of interviews are original recordings made by the Sydney Speaks Project in the 2010s with Adults and Young Adults (born 1960s and 1990s, respectively). The composition of the corpus reported on here is summarised in Table 1.

Participants are Sydneysiders of Anglo-Celtic, Italian, and Greek background. The Anglo-Australian participants' parents and grandparents are known to have grown up in Australia. The non-Anglo-Australian participants were born in Australia, or arrived before the age of five, and their parents migrated from Italy or Greece. The corpus is stratified according to age, gender, and socio-economic status. Speakers were assigned to three socio-economic status groups based on Hierarchical k-means cluster analyses of measures for level of occupation, education, suburb, and high school type (see [4] for details). Following [3], these groups are referred to as Lower Working, Upper Working and Middle Class (LWC, UWC, MC).

These two corpora allow us to observe ethnicity-based language variation and change in real time. This is highly valuable given our currently limited understanding of the longevity of ethnolectal features across generations.

Table 1 Demographic breakdown of participants

	1970s		2010s				
	Teens		Adults		Young Adults		
	M	F	M	F	M	F	
<i>Anglo</i>	12	12	10	10	12	10	66
<i>Greek</i>	10	13	5	8	4	2	42
<i>Italian</i>	13	12	11	13	8	6	63
<i>Total</i>	35	37	26	31	24	18	171

2.2. Data preparation, token extraction and analysis

The extraction of (er) tokens was based on two levels of transcription in ELAN [10]. In the first level, orthographic transcriptions of the sociolinguistic interviews were force-aligned in LaBB-CAT [11]. In the second level, prosodic information was included. Transcriptions were broken down into Intonation Units (IUs), here defined as 'a stretch of speech uttered under a single, coherent intonation contour', following the protocols of Du Bois, et al. [12].

Following the protocol in [4], each instance of (er) from the force-aligned transcriptions was matched with the corresponding prosodic transcription to determine the token's position in the IU (final or medial) and intonation contour ('transitional continuity' as defined in [12]). An example of IU-final (er) is presented in (1)

- (1) AMAR: *so we all went to church that night together.*
SydS_GOM_144_Amar, 1853.89

As outlined in [4], the analysis focused on (er) in open syllables regardless of intonation contour or morphological status. This is because the effect of intonation is consistent across age groups (i.e., the change towards longer (er) over time was not driven by a single intonation contour), and the realisation of (er) duration is not affected by whether -er is a separate morpheme or not (e.g., *remember* vs *teacher*). But, tokens with additional morphology (e.g., plural /s/) were excluded as they are not subject to lengthening. Each included token of (er) was coded according to speaker, speech rate, gender, community, age, and IU position.

Duration of (er) was measured based on the forced alignments produced in LaBB-CAT. Due to the relative

accuracy of LaBB-CAT's boundary placement [13], as confirmed for (er) by spot-checking [4], tokens were not manually checked. Following [4], speech rate was calculated based on the number of syllables per minute, as calculated in LaBB-CAT, without further modification. As Grama, Travis, and Gonzalez [4, see Figure 5] demonstrated that a longer vowel was significantly correlated with a lower and backer realisation in the vowel space, the focus of this analysis is on (er) duration rather than F1 and F2 values.

A total of 3941 IU-final tokens were extracted for analysis. The data were examined visually, and observed patterns were further examined with three linear mixed-effects regression models. In the models fit to IU-final (er) tokens, one model included the 1970s Teens and 2010s Adults, focusing on the shift within this generation of speakers. The second model included 2010s Adults and Young Adults, focusing on the shift across generations. The third and final model analysed just the 2010s Young Adults to focus on ethnic differentiation within this age group. All models included speakers from all three ethnic communities.

Models were calculated using the *lmer* function as part of the *lme4* package [14] in R [15]. P-values were calculated using the *lmerTest* package [16]. For all models, duration of IU-final (er) was the dependent variable, speaker and word were included as random effects, and community, gender and speech rate were included as fixed effects. The first and second models included age as a fixed effect as they are focused on changes between age groups. The first model also included class as a fixed effect, but the uneven distribution of 2010s Greek participants made this inadvisable for the second and third models. For the same reason, the third model included just UWC and MC Young Adults. Final models were reached through pruning, with fixed effects tested and removed if not significant. Interactions between fixed effects were also tested for. Model fit was assessed based on the Akaike Information Criterion (AIC) through the *AICcmodavg* package [17] and where model fit was not significantly different, the simpler model was chosen.

3. Results

3.1. 1970s Teens to 2010s Adults

This section provides an overview of the variation and change for the generation of 1970s Teens and 2010s Adults, with speakers from both age groups all born in the 1960s. The final model for this generation returned the following significant fixed effects: community, gender, age, and speech rate. Consistent with the results reported by Grama, Travis and Gonzalez [4], the Greek-Australian 1970s Teens' (er) durations are significantly longer than both their Anglo and Italian peers, and the Italian-Australians are significantly longer than the Anglo-Australians.

Figure 1 depicts (er) duration (on the vertical axis) broken down by age (on the horizontal axis) with community represented by colour. For visualisation purposes, outliers above 400 ms in duration have been excluded from all Figures. As demonstrated in [4], the Anglo- and Italian-Australians significantly lengthen their realisations of (er), with the average duration respectively increasing 53% (73 to 112 ms) and 39% (91 to 126 ms) between the 1970s Teens and 2010s Adults.

Adding in the Greek-Australians demonstrates that they have undergone a similar degree of change in the same period. Their average (er) duration has increased 36% between the two age groups (112 to 152 ms, $df = 1350$, $t = 5.5$, $p < 0.0001$).

While the average (er) durations of all three groups have increased to a similar extent in milliseconds (respectively increasing by 39, 35 and 40 ms), the Anglo-Australians have proportionally increased the most.

But crucially, adding in the new data from the Greek-Australian community in the 2010s allows us to see that they have not only continued to progress the change, but they have also maintained their longer realisations of (er) relative to the other ethnic communities. Their realisation of (er) duration remains significantly different from their Anglo- ($df=1440, t=-5.4, p<0.0001$) and Italian-Australian ($df=1440, t=-3.8, p<0.001$) peers in the 2010s. For this generation, therefore, it would appear that (er) has maintained its status as an ethnolectal marker of the Greek-Australian community.

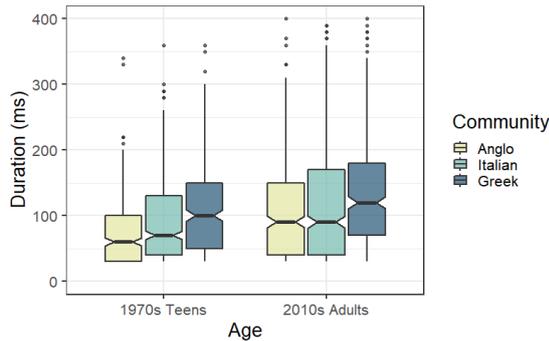


Figure 1 (er) duration by age and ethnic community for 1970s Teens and 2010s Adults

The changing class stratification of (er) for Greek-Australians is highly relevant to its ongoing status as an ethnolectal marker. Figure 2 similarly depicts (er) duration on the vertical axis and age on the horizontal axis. However, it presents the data specifically for the Greek-Australian 1970s Teens and 2010s Adults by class (LWC and UWC in orange, MC in purple). Consistent with [4], the LWC and UWC Greek-Australian 1970s Teenagers were most progressed in the lengthening of (er) (followed by Italian (male) Teenagers). It is clear from this figure that the Greek-Australian MC Teenagers were lagging in this change. In fact, they more closely resembled MC Anglo- and Italian-Australian Teenagers than the other Greek-Australians. In the 2010s, it is the MC Greek-Australians who have changed the most as Adults. The data therefore indicates that this class group has lengthened over time to meet the benchmark originally set by the rest of the Greek-Australian community in the 1970s. This has substantially contributed to the community's ongoing participation in this change and its differentiation from Anglo- and Italian-Australians in the 2010s.

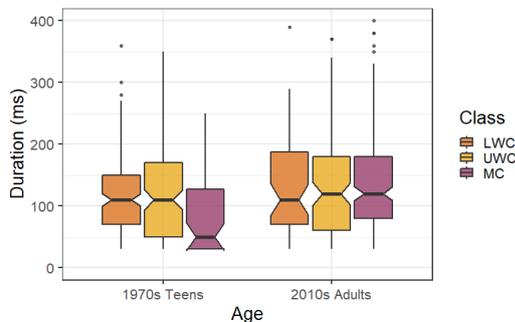


Figure 2 (er) duration by age and class for Greek-Australian 1970s Teens and 2010s Adults

Finally, the difference between men and women has increased over time for all three ethnic communities, with (Working Class) women leading the change (significant interaction between gender and age $df=126, t=-2, p<0.05$). Taking into account the comparatively greater lengthening of the Anglo LWC and the Italian WC 2010s Adult women [4], the ethnic differences in this generation have therefore contracted for women while being maintained for men.

The data indicates that the ongoing differentiation of the Greek-Australian Adults from their peers in the 2010s is not driven by a change or underlying difference in speech rate. There is a consistent effect across communities of faster speech rates significantly favouring shorter (er) duration. While this effect is more pronounced for the Greek-Australian 2010s Adults (significant interaction between speech rate, age, and community, $df=2592.7, t=-2, p<0.05$), there is no significant differences in speech rate between the three communities (based on a separate linear mixed effects model with speech rate as the dependent variable and an interaction between age and community as fixed effects). The independence of the Greek-Australian community's differentiation from speech rate is also supported by the fact that speech rate does not interact with community for the 1970s Teens, where the ethnic difference in duration is equally pronounced.

This data therefore captures a generation for which a linguistic variable is both an ethnolectal feature characteristic of a certain ethnic community, and a change in the process of being taken up by other ethnic groups in the wider speech community.

3.2. Introducing the 2010s Young Adults

This section introduces the 2010 Young Adults into the analysis to assess the longevity of (er) as an ethnolectal marker of the Greek-Australian community across generations. The Anglo-Australians have significantly lengthened their (er) duration between the two generations, while the Greek- and Italian-Australian Young Adults have not. This is reflected in a significant interaction between age and community for the Italian- ($df=94, t=-2.6, p<0.05$) and Greek- Australians ($df=83, t=-2.1, p<0.05$) returned by the final model for 2010s Adults and Young Adults. As a result, Young Adults from all three communities have similar median durations and the differentiation of the Greek-Australian community has diminished. This is shown in Figure 3, which is the same as Figure 1, but with the Young Adult Greek-Australians included and data presented separately for female and male speakers.

We can see from Figure 3 that the change in (er) duration between the 2010s Adults and 2010s Young Adults is relatively small compared to the change between the 1970s Teens and 2010s Adults. Most importantly, Greek-Australian Young Adults are not continuing to lengthen (er) further than the previous generation but are patterning with the other ethnic groups of their generation. This suggests that (er) is no longer an ethnolectal marker for this generation.

We can also see that the Greek-Australian Young Adult women are matching the duration of their Anglo-Australian peers and the Greek-Australian women of the previous generation. The final model analysing just UWC and MC 2010s Young Adults did not have gender or community as a significant predictor (noting that all classes are included in Figure 3). Young Adult Greek-Australians are not significantly different from their Anglo- ($df=21, t=0.4, p=0.7$) or Italian-Australian ($df=20, t=-0.8, p=0.43$) peers. There is also no interaction between community and gender; although the

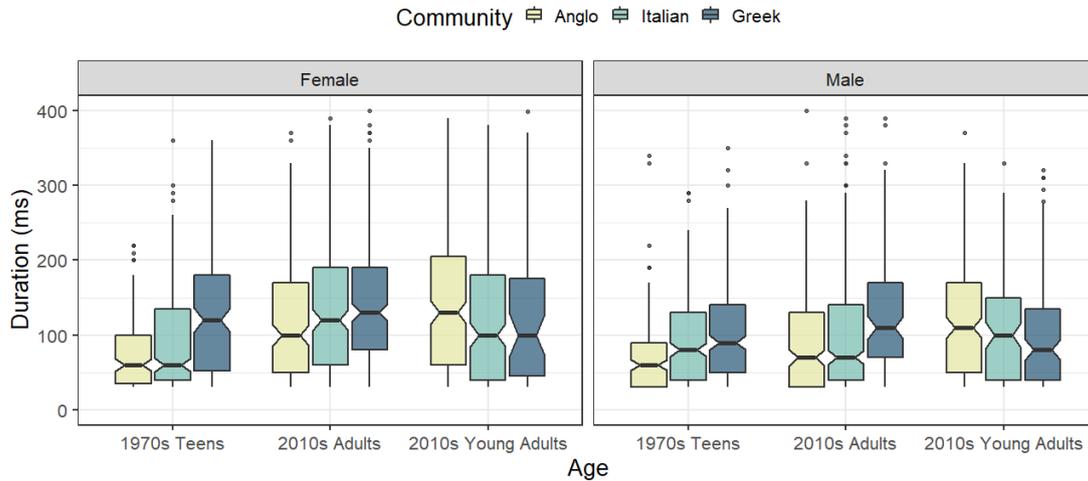


Figure 3 (er) duration by age, gender, and ethnic community for the 1970s Teens, 2010s Adults and Young Adults

Young Adult Greek-Australian men have shorter realisations of (er) relative to their male 2010s Young Adult peers, and Greek-Australian men of the previous generation, these differences are not significant.

Interestingly, while speech rate remains a significant predictor for the 2010s Young Adults, there is no longer a significant interaction with community. Speech rate therefore similarly affects (er) duration in this age group across communities, with faster speech rate still inhibiting duration.

Overall, it is evident that Greek-Australian Young Adults are not progressing (er) lengthening further than the previous generation of their community. They are patterning with their own generation in the 2010s. For this generation, (er) therefore is no longer marking Greek-Australian ethnicity as it was for the previous generation of 1970s Teens and 2010s Adults.

4. Discussion and Conclusions

This analysis of (er) sought to address an under-examined question about the longevity of ethnolectal differences within a speech community. It aimed to establish whether an ethnic group that led a community change forty years ago remained ahead of other groups today and, by extension, whether this variable continues to be an ethnolectal marker. The analysis addresses a specific question arising from the study by Grama, Travis and Gonzalez [4], due to the lack of data from Greek-Australian 2010s Adults and Young Adults. Examination of data from these groups here has allowed us to verify their hypothesis that the ethnolectal status of (er) has diminished over time as the lengthening led by the Greek-Australian community was taken up by other ethnic groups. While the data overall support this hypothesis and the original conclusions, focusing on two distinct stages of the change highlighted important generational distinctions in (er) realisation. The ethnolectal status of (er) is sustained for the 2010s Adults and diminishes specifically in the next generation of 2010s Young Adults.

When the Greek-Australian 2010s Adults and Young Adults are included in the analysis of (er), we observe that the 2010s Adults have continued to progress the change in much the same way as their Anglo- and Italian-Australian peers. We also observe that the Greek-Australians maintain their comparatively longer realisations of (er) over time within the generation of 1970s Teens and 2010s Adults. The Greek-Australian 2010s Adults remain significantly longer than the

Anglo- and Italian-Australian 2010s Adults in the same way that the Greek-Australian Teens were significantly longer than the Anglo- and Italian-Australian 1970s Teens. This appears to be driven at least in part by Greek-Australian MC Adults lengthening their (er) duration in the 2010s to meet the benchmark established by their (L)WC peers in the 1970s. (er) therefore appears to be a stable ethnolectal marker of the Greek-Australian community for this generation. While the inhibiting effect of faster speech is more pronounced for the Greek-Australian 2010s Adults, their longer (er) duration is maintained regardless of this effect.

It is in the next generation that the ethnolectal status of (er) has shifted. There is no evidence that Greek-Australian Young Adults have continued to progress (er) lengthening beyond the benchmark set by the previous generation. The Greek-Australian Young Adults are not significantly longer than their Anglo-, or Italian-Australian peers. Instead, they are patterning with the other ethnic groups in their age group. This has taken place alongside reduced lengthening between the 2010s Adults and Young Adults, compared to between the 1970s and 2010s Adults, and a reduction in gender differences for the youngest age group. The collective evidence therefore indicates that the lengthening of (er) has begun to plateau in the Sydney speech community and no longer functions as an ethnolectal marker of the Greek-Australian community for 2010s Young Adults.

Through analysing the realisation of (er) duration in spontaneous speech across and within generations, this analysis has provided insight into the progression and plateau of a linguistic change led by a minority ethnic community. I propose that, consistent with the conclusions reached by Grama, Travis and Gonzalez [4], (er) is an example of a linguistic feature that functions both as an ethnolectal marker for members of the Greek-Australian community who were born in the 1960s, and as a feature that has been adopted by the wider speech community. As (er) lengthening is progressively taken up in the speech community its status as an ethnolectal marker diminishes, including for the ethnic group that originally utilised it most markedly as an ethnolectal feature.

The longevity of (er) as an ethnolectal marker of the Greek-Australian community appears to be limited to a single generation. This variable therefore highlights the importance of analysing ethnolectal variables in real- as well as apparent-time, as the social meaning of such variables may change along with the community over time.

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