# Socio-demographic trajectory, vowel normalization, and the marriage of auditory and acoustic approaches in assessing lifespan change

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Tyneside English has a long history of sociolinguistic investigation (Milroy *et al.* 1994; Watt 1998; Beal *et al.* 2012; Warburton 2020). These works demonstrate that the vowel system in the North East is undergoing a widespread process of levelling towards supralocal forms (e.g., Haddican *et al.* 2013). At the same time, some speakers' maintenance of localised forms has been interpreted as a strategic choice in the performance of locally relevant identities that tend to be conditioned by factors such as gender and age (Watt 2002; Buchstaller *et al.* 2017). Ongoing research by the TUULS project (Llamas *et al.* 2017) has been investigating the extent to which geographical mobility across the lifespan in older speakers impacts their use of localized forms. However, with the exception of Buchstaller *et al.* (2017), previous findings have largely been based on apparent-time analyses or induced from comparisons with legacy data. This paper is the first to explore the extent to which individual speakers follow the trajectories in the Northern vowel system observed in the community at large across their own lifespan.

We report on a novel panel corpus which covers twelve speakers from Tyneside who were rerecorded twice or three times, starting at early adulthood, adulthood immediately preretirement, and post-retirement. Our analysis reports on approximately 4,000 tokens of two locally salient vowels in the North East—FACE and GOAT—across these time slices (1971, 2013, 2019). Our focus is twofold: first, we attack methodological questions of comparability when dealing with stark differences in recording quality (1970s v. 2010s), as well as the acoustic ramifications of (not) undertaking vowel normalization of the same speakers measured at different points across their lifespans. Second, we demonstrate that sociodemographic trajectories play a significant role in the articulation of lifespan changes. While working-class speakers show an increase in the proportion in localized vowel realizations over their lifespans, middle-class speakers show evidence of retrenchment towards the standard, followed by a tail back towards localized forms post-retirement (Downes 1984, Buchstaller 2006). Further evidence suggests that these changes in proportion are paralleled in F1/F2 space, with variants more in line with the standard emerging at T2, then abating in T3. Overall, results across the lifespan for middle-class speakers suggest that phonetic changes pattern alongside changes in proportion for at least one speaker. Furthermore, our analysis provides empirical evidence for the hypothesized U-shaped pattern, a bedrock of sociolinguistic theorizing (Downes 1984; Buchstaller et al. 2017).

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#### How old are the moun[?ə]ns in Utah? Utahn "t-dropping" over time and across the lifespan

A widespread folk-linguistic belief among speakers of Utah English is that "*t*-dropping" (that is, the glottalization of /t/ before syllabic nasals) distinguishes Utah English from other American Englishes. Eddington & Savage (2012) found that present-day Utah English is somewhat different, in that a widespread realization is an oral release of the glottal stop (e.g., *mountain* produced as [maon?ən], not [maon?n]). This study pushes back in time by investigating same variable in the production of speakers in an archive of recordings made between 1940 and 2010 that were not originally collected for sociolinguistic analysis, but that have been successfully used for that purpose (Stanley & Renwick 2016, Bowie 2021, among others).

To gain insight into the development of this variable, two parallel studies were conducted using separate samples of Utah English speakers from this archive: a panel study of 10 speakers (born 1876–1928), and a trend study of 26 speakers (13 recorded in 1940 and 13 in 2010) who were demographically similar at the time of recording. Both studies found a decrease in the realization of /t/ before syllabic nasals as [t<sup>h</sup>] and a corresponding increase in both realization of the sound as [?] and deletion. However, the glottal realization was almost never followed by an oral release (i.e., into [ən] rather than [ŋ]), lending credence to Eddington & Savage's findings that that is a recent innovation. Further, there was relatively little intraindividual variation in the panel study, reflecting a difference between this variable and several of those reported earlier by Bowie (2011, 2015, 2019, 2021). However, unlike those this variable is socially salient, leading to the possibility that social awareness of linguistic variables can be reflected in lifespan variation and change, supporting the conclusions of Sankoff & Blondeau (2007).

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# In between Quebec and Hexagonal French: A longitudinal study of front vowels

(in special session Panel research: Methodological challenges, practices and ways forward) Josiane Riverin-Coutlée and Jonathan Harrington Institute of Phonetics and Speech Processing, Ludwig-Maximilians University of Munich

The 21<sup>st</sup> century is that of mobility and digitization. For dialectologists, this means having to deal with speakers exposed to increased linguistic diversity, but also unprecedented availability of speech data. In this study, we combine these two realities of our time to show that longitudinal data collected from platforms such as YouTube may offer a rich perspective on lifespan phonetic changes resulting from social mobility (e.g. Kwon, 2018; MacKenzie, 2017).

The general hypothesis is that the type of profession and the audience that an adult speaker addresses in a professional capacity may influence lifespan phonetic changes (Buchstaller & Wagner, 2018; Gerstenberg & Voeste, 2015). We expand on a previous acoustic study of the speech of Michaëlle Jean, in which we found changes in the realization of a dialect feature of Quebec French (QF) as a function of the stages of her career (Riverin-Coutlée & Harrington, in press). In the current study, our aim is to find out whether other features changed over a similar timeline.

We focus on acoustic characteristics of the front unrounded vowels, specifically: 1) the location of /e/ in the acoustic space, which tends to be closer to tense [i] in QF than in Hexagonal French (HF) (e.g. Riverin-Coutlée & Roy, 2020 vs. Storme, 2017); 2) duration and formant dynamics of the vowel in FÊTE, produced as a short and monophthongal /ɛ/ identical to that in FAITE in HF, but with a greater duration and a diphthongal quality, /aɛ/, in QF (Côté, 2012; Martin, 1995; Riverin-Coutlée & Roy, 2020).

The speech data consists of 62 recordings (4h 39m) spanning three decades (1988-2021) and divided into five career stages. The recordings were orthographically and phonemically transcribed, then forced-aligned using a series of BAS tools (Kisler et al., 2017), and structured into a database using EMU-SDMS (Winkelmann et al., 2017). Segment boundaries and formant detection were manually corrected for 2690 tokens of the front unrounded vowels /i, e,  $\varepsilon$ , a $\varepsilon$ , a/ in word-final syllable. F1 and F2 were estimated at 11 time points from vowel onset to offset, then transformed into three DCT coefficients representing the mean, linear slope and curvature of the trajectories (Watson & Harrington, 1999). These coefficients and the log-transformed duration were set as response variables in linear mixed-effect regression models with *Vowels* and *Career Stages* as fixed effects, and *Words* as random effect.

The results showed that /e/ evolved from a QF-like small distance from [i] in the first career stage, to a larger distance, and back to a smaller distance. No substantial change was observed for /aɛ/, which was mainly distinguished from /ɛ/ through length, not quality. This first suggests high sensitivity to fine properties of the vowel space, as the proximity of /e/ to [i] is not known as a salient feature of QF and seems to evolve in coordination with the tense-lax split studied in Riverin-Coutlée & Harrington (in press). Second, the stability of the length contrast between /ɛ, aɛ/ shows that features of QF were not suppressed *en bloc* as Jean's career became international, but their otherwise similar spectral properties suggest a spoken accent that is neither entirely QF nor HF. Overall, these results emphasize the relevance of social and linguistic factors in explaining lifespan phonetic stability and change.

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Exploring language use and linguistic attitudes over a decade in later life: a generational "lect"? (Annette Gerstenberg)

While the "pressures of the standard language market" are identified as a driving force of linguistic change in adulthood (Wagner, 2012:379), it is assumed that "the pressures to conform to societal norms may weaken once more" at the end of a professional career (Cheshire, 2005:1556). The hypothesized relaxation after retirement has been observed in French by Gadet (2003:55).

At the very heart of research across the lifespan lies the question of the standard itself: is the the codified standard of the grammars the "standard", or is it the current linguistic usage norm? This question will be explored on the basis of a continental French panel analysis, a language in which a diglossic linguistic situation has been postulated, such that a "congealed" high variety artificially perpetuating the historical linguistic norm contrasts with the common "demotic" low variety (Massot & Rowlett 2013).

Against this complex background, the question of what characterizes older speakers and their "generational lect" is highly illuminating when it comes to French. This paper explores the use of a core variable in French sociolinguistics: *ne* deletion (Armstrong & Smith 2002), specifically amongst older speakers, in comparison with communal *ne* deletion change. Negation reflects the normative orientation to 20<sup>th</sup> century hexagonal French as it was consistently taught at school, especially until the 1960s, and which continued to be vital in French society as a marker of fr. *bon usage*, 'good usage'.

The 20 speakers included in the analysis consist of 10 heterosexual couples recorded in 34 interviews, at two different points in time (2005/2015; aged 58/68 to 86/96). Interviews touch on topics in the individuals' biographies, their current situations, activities, and thoughts on language.

The effect of subject type (noun vs. pronoun), embedding and lemma are explored with special attention to high-frequency, potentially pragmaticized, constructions (Hansen & Malderez 2003; Bybee 2002). In addition, metrics of lexical statistics are used to control for possible change in linguistic register between the first and second interview. Finally, metalinguistic statements are included in the analysis.

The results allow us to situate speakers as representing a generational group within the speech community of contemporary French, and to trace individual trajectories in the post-retirement phase. For this purpose, speaker biographies and life trajectories between the first and second interviews provide further qualitative information, allowing for a nuanced understanding of differentiated use of linguistic means in old age.

The results show that language use and internal grammars continue to develop even with speakers in their 60s, 70s and 80s, as most speakers continue to progressively align themselves with the current standard of spoken language (Buchstaller & Wagner 2017). However, the learned norm of the 20th century remains formative in the 21st century. Furthermore, complementary qualitative analysis shows that this norm is an important part of the speakers' perception of a generational lect.

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# Intra-speaker (in-)stability and varietal coherence across the lifespan: Findings from a real-time panel study in Austria

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The varietal spectrum in the Bavarian parts of Austria is complex: it is supposed that traditional dialects and the standard language have been mutually influencing each other for decades, leading to a dialect/standard-continuum in a diaglossic language situation (Auer 2005). This assumption, however, is often based on impression or even speculation as current and up-to-date investigations into varietal coherence of Bavarian dialects in Austria are rare (exceptions comprise the pioneering work of Martin 1996 and Scheutz 1999 as well as Vergeiner 2019). Until now it remains unclear to what extent supposed dialect and standard features cluster together and build a 'unified whole' (Guy & Hinskens 2016). It is also not clear – not solely in the Austrian context – to what extent coherence changes over an individual's lifespan, i.e., whether aging is accompanied by a lectal focusing or diffusion. To explore both intra-speaker (in-)stability and lectal coherence across the lifespan we conducted a real-time panel study consisting of twelve speakers from Ulrichsberg (Upper Austria). Each of these twelve speakers were interviewed in 1975/6 and in 2018/19 in two situations: a formal interview and an informal conversation.

First, the data are analysed via a variable rule analysis, selecting six frequent, phonetic variables. We found differences in the distribution of the features in different settings and points in time (Vergeiner et al. submitted). In sum, the analysis reveals an increase of dialect features for each individual (retrograde-change) even though apparent-time as well as real-time trend studies indicate dialect loss in the Bavarian speaking parts of Austria. To reduce the complex dimensionality of the data, a factor analysis was computed, which identified latent regularities in the co-occurrence of linguistic variants. Crucially, this analysis indicated that there are coherent patterns in variation (Pickl 2013).

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### (In)coherence across the linguistic architecture: change in Swabian across the lifespan

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Ever more studies show that adult vernaculars are malleable, influenced by shifting cultural contexts, prominent social, psychological or cognitive adjustments, exceptional historical incidents, and decisive life-changing events (e.g., Beaman and Buchstaller 2021; Wagner and Buchstaller 2018). But do all variables change in the same way and under the same conditions for all speakers? Are there notable deviations at different levels of the linguistic architecture across the lifespan?

To explore these questions, this research targets two speech communities of Swabian, an upper German dialect belonging to the Alemannic family. The real-time panel study comprises 20 native Swabian speakers first recorded in 1982 and re-recorded 35-years later in 2017. The hypothesis of this study predicts that greater coherence is found with phonological variables than with morphosyntactic ones. This may also be attributed to the expectation that morphosyntactic variables are more salient (and hence more stigmatized), making them more susceptible to change (e.g., Naro 1981), while phonological variables are more frequent (and hence more entrenched), making them less vulnerable to change (e.g. Bybee 2002). In addition, Chambers (1995:51) claims that "grammatical variables tend to mark social stratification more sharply [than phonological ones] so that it is probably safe to say that most … function as class markers." To investigate these claims, this study follows Buchstaller, Krause-Lerche, and Mechler (2021) in analyzing three common sociolinguistic heuristics – inventory change, frequency change, and constraint-based change for 10 phonological and 10 morphosyntactic variables to assess how lifespan change may differ across the linguistic architecture.

The results show that, while lifespan change generally follows community change, there are important individual patterns that diverge from the norm: some speakers change more quickly, some more slowly, some not at all, and some move in reverse of the change (e.g., Beaman 2020; Sankoff 2006). Overall, the metrics from the three sociolinguistic heuristics concur, although they signal crucial deviances across the architecture and with specific speakers – variances which can be explained with reference to immense societal change occurring in Germany, changing norms of prestige and stigma, and linguistic marketplace effects (Bourdieu and Boltanski 1975).

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# A moribund Japanese colonial koiné in the Pacific: a panel study of language obsolescence

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This paper reports early results from our research on structural obsolescence in the postcolonial Japanese variety spoken on Palau in the Western Pacific. During Japanese rule (1914-1945), radically different dialects of Japanese were brought by settlers, who eventually accounted for the vast majority of the population in the capital Koror. Due to intensive contact with the children of these settlers, many Palauan children acquired a Japanese colonial koiné as part of their linguistic repertoire. In 1945, all Japanese settlers were expatriated, with English becoming the official colonial language. Today just a few very elderly Palauans survive to remind us of the once vibrant Japanese speech community.

Two comparable data sets from 28 elderly Palauans (17 fluent- and 11 semi-speakers) collected at a 10-year interval (Dataset I collected in 2000 and Dataset II collected in 2010) are analysed in order to examine to what extent their vernacular Japanese acquired during childhood (in the case of semi-speakers) and consolidated in their late teens and early twenties (in the case of fluent-speakers) is stable or obsolescing, given increasingly rare opportunities to use Japanese. These two speaker groups enable us to assess the extent to which obsolescence proceeds differently when the original command of the language differed. The linguistic variable we investigate here is (g), with variants [g], [ŋ] and [k]; and consider a range of linguistic and social constraints on variation.

The analysis of Dataset I demonstrates that despite the absence of [g] in the Palauan phonetic inventory, Palauan Japanese speakers had (a) largely acquired the irregular Japanese Eastern Dialect system, which at the time of settlement had wide socio-spatial currency in Japan ([g] word-initially, but [ŋ] word-internally), (b) added the Palauan variant [k] for /g/ as a substrate feature. These results confirm the expected outcomes both of the founder principle (Mufwene 1996) and of intensive dialect contact (Trudgill 2004) as well as substrate effects.

In this paper, we present a comparative analysis of Datasets I and II to examine, as obsolescence progresses, in which direction Palauan Japanese is travelling: paying attention to the effects of substrate Palauan phonology, the demography and dialectology of Japanese settlers as well as the speakers' original command of the language, we show whether speakers orient more and more to Palauan phonology (i.e. a 'nativisation' route, Dorian 1978) or, instead, orient increasingly towards the majority ingredient dialects at the time of koiné formation (the 'concentration model' route, Wolfram 2002).

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