

How can quantitative measures of social age help us analyse uptalk?

Anna Bothe Jespersen, Miša Hejná

¹ Department of English, Germanic and Romance Studies,
University of Copenhagen, Denmark.

² Department of English, Aarhus University, Denmark
abj@hum.ku.dk, misa.hejna@cc.au.dk

Abstract

Uptalk has been established to be indexically linked with certain social groups, including young, female speakers. This means this intonational feature has been claimed to index a young or youthful age. As recent work has attempted to broaden the sociolinguistic variable of *age* from chronology (the number of years lived) to encompass a speaker's biological and social age, the assessment of speakers' age groups is necessarily complicated. This paper investigates whether the uptalk produced by two female speakers of Tyneside English can be seen to co-vary with chronological and social age, and how various measures of social age may be used to initiate or triangulate sociophonetic analyses of age-related features such as uptalk. The paper exemplifies the way in which the linguist can productively investigate age beyond chronology.

Introduction

Analyses of speaker *age* in phonetics have tended to conceptualise this variable as resulting from a speaker's chronology, that is, their number of years lived. However, recent work (e.g. Bowie, 2011; Wagner, 2012; Pichler et al., 2018; Hejná & Jespersen, 2021; 2022) has pointed to the problems inherent in such an approach.

Firstly, this approach treats age as a monolith, whereby post-adolescent life is relatively stable across time and across speakers, and this is necessarily simplistic (see Pichler et al., 2018: 2).

Secondly, taking such a view entails the risk of overlooking important contributions to a person's vocal production (and perception) brought on by their individual age trajectories, such as physiological changes resulting from accelerated or decelerated biological ageing, or various ways of negotiation or stepping outside social age norms and categories.

Biological age (e.g. in the former example) can practicably be investigated by the ordinary phonetician as laid out in Hejná & Jespersen (2021). Social age identities, however, are more ephemeral and thus difficult to capture in an experimental setting. Nevertheless, operationalising age in way that goes beyond chronology is not impossible. This paper uses an analysis of *uptalk* to exemplify how the phonetician can operationalise social age and how social age measures can be used to initiate or triangulate qualitative sociophonetic analysis.

Uptalk rises are phrase-final rising F0 movements associated with declarative statements (e.g. Fletcher et al., 2005; Warren, 2016, Jespersen, 2019). Uptalk has shown generation-specific patterns in different varieties of English (Warren, 2016: 116-119), which is why this phenomenon has been chosen as a variable to consider here. Specifically, uptalk has often been claimed to index a young or youthful (chronological) age. However, it is less clear how well such indexicalities map onto social age, and how well the sociophonetician can access them in an experimental setting.

This paper thus sets out to address the following research questions:

RQ1: How well can social age be accessed through the proposed qualitative and quantitative measures?

RQ2: How useful are such measures to a phonetician?

RQ3: Can the measures provide evidence on whether uptalk is indexically linked with chronological or social age?

Methods

Speakers

The data for this study results from sociolinguistic interviews collected from 2 female speakers born and raised in Tyneside, North England (who are part of a dataset of 12 speakers). The speakers' chronological ages range from 19–57 years. Speakers' names and personal details have been anonymised.

Procedure

The data collection consisted of 1) a sociolinguistic interview with each participant, 2) a series of physical tests to provide information about their biological age. For more information about the latter, which will not form a part of this paper, see Hejná & Jespersen (2021, 2022).

The sociolinguistic interview data was recorded in a phonetics booth at Newcastle University with a Zoom 5 Handy recorder and an AKG C520 head-mounted microphone at a sampling rate of 44.1kHz. The interviews were conducted by the first author. Potential participants had been approached via Facebook and via the snowball method, and those recorded were financially compensated for their time.

Social age measures

As part of the sociolinguistic interview, participants were asked a series of questions to elicit information about their social age. In this paper, we will refer to participants' subjective age (the answer to the question “how old do you feel most of the time?”), as well as age categories, where participants are offered a choice between categories such as

“teenager”, “young adult”, “adult”, “older” or “elderly”.

Moreover, the present analysis will consider participants' self-identified life stage, a measure of social age which is co-constructed between the interviewer and the interviewee and can contain reference to any relevant aspect of a person's current life stage, such as “young mother”, “student”, “workaholic”, and which offers the participant flexibility to opt out, e.g. “in-between life stages”.

Finally, we provide an analysis of the participants' stancetaking, that is, the way they position themselves relative to the content or material under discussion through language use (Kiesling, 2022: 410; Du Bois, 2007: 141). We chose to include this analysis to exemplify the use of a qualitative operationalisation of social age. Here, we borrow from Kiesling's (2022) additions to Du Bois' (2007) conceptualisation of stancetaking through the so-called *Stance Triangle*.

In this framework, the *speaker* and an *interlocutor* are seen to interact with each other and with the person or idea under discussion – the *stance object*. Each interactant will evaluate the stance object through stance-taking. As the conversation flows, the interactants may accept or reject their interlocutor's previous stance, thus aligning or disaligning with them. Furthermore, stances differ in investment, or the degree to which the speaker is invested in an utterance.

We further note that stance in this model is seen as dynamic and interactive, in that any individual can take any stance, but that habitually taken stances index and are constitutive of enregistered identities (Kiesling, 2022: 412).

Investigating uptalk

The linguistic analysis focused on two sections of the sociolinguistic interview, namely speakers' answers to the questions “How do you feel about ageing?” and “Have you ever encountered ageism at any point in time?”. These were analysed for stancetaking, and any uptalk

risers were analysed as described below. After this, the passages were transcribed orthographically.

Rises were located by manual inspection of pitch traces in Praat (Borersma & Weenik, 2021) by the first author, who assigned fundamental frequency (F0) rises to the category of uptalk rises based on three criteria: 1. a pronounced upward trajectory from a metrically prominent syllable towards a phrasal boundary (thus including interference from the pitch tracker itself, and the effects introduced by the segmental environment), 2. the association of the F0 rise with the final intonational phrase of a declarative sentence (thus avoiding non-final rises such as those used in listing); 3. a smooth, domain-adjacent F0 rise rather than a rise-plateau or rise-plateau-slump associated with longer stretches of material, such as those associated with Urban Northern British rises (as these have found to be heard as different entities to uptalk rises, and might thus carry different indexical meanings; see e.g. Jespersen, 2019).

Analysis

In this section, we first set out to analyse two short, transcribed passages from the sociolinguistic interviews using more conventional methods for approaching social age. This analysis will attempt to link uptalk rises with the stances they co-occur with. These short extracts are meant to illustrate larger tendencies in the dataset, which, for reasons of space, we are not able to fully expand upon. After this, we look at the social age measures to investigate how these can help us nuance and support our interpretation of the speakers' use of uptalk.

Uptalk and stance

In the following, uptalk is represented in Autosegmental-Metrical (AM) notation. L* L-H% represents a low rise, L*H-H% is a high rise from a low onset, and H* H-H% is a high rise from a high onset. The notation (e.g. L* H-H%) marks

the start of the rise, and underlined material indicate the spread of the rise. Slashes (/ or //) represent the ends of intonational phrases. Three dots (...) represent a pause. Material in all caps (LIKE SO) signals the use of increased amplitude, or loudness. Colons (word::) represent increased duration. Significant paralinguistic cues are represented in double parentheses.

As the interviews were explicitly conducted on the topic of age and ageing, the speakers volunteered various stances on age, both their own and the variable in general. We begin by analysing a passage from Ava, 19, who evaluates her own age identity through stancetaking.

Extract 1: Ava, 19

AJ:((laughing)) You just want to be older, right?

Ava: Yeah I want to be older / but I think it's 'cause I had my older sister so I was like ohh I wanna be... I wanna do what [L* H-H%] she's doing and / cause mum and dad are like no, you're too young:: / I just wanna be / ((smiles)) I just wanna be older... ((laughing)) /

Here, Ava had just discussed her preference to befriend people of older age groups and how as a child she would often play with her older sister's friends. The identity work involved is a negotiation of her own age identity in relation to that of her older sister and to the expectations of her parents. Her stancetaking revolves around negative affective evaluations of her chronological age and its social limitations.

The uptalk rise, L* H-H%, runs through the phonetic material 'she's doing and'. Uptalk rises can be construed as Labovian stereotypes indexing a certain type of young, hip, American-oriented identity (Warren, 2019: 116-119). Its use here co-occurs with an attempt to align with Ava's older, "cooler" sister. We read this as uptalk being part of a

“cool” stance – a positive evaluation of her sister’s age group. The concurrent negative evaluation of her own age group further supports this interpretation.

Extract 2: Fee, 52

AJ: So you don’t feel bad about ageing /
Fee: I don’t feel [**H* H-H%**] too bad about / I think I keep myself quite FIT / and ACtive:: / and look after myself / but it’s getting to the stage now where I’m seeing friends:: [**L* H-H%**] SUFFER with ageing / and:: die through illnesses that are caused by ageing / so I think it’s bringing / the last couple of years I think it’s bringing it close to / closer to me that / I am actually [**L* L-H%**] old:: / I don’t feel it so much no /

In this conversation, Fee and the interviewer had just discussed Fee’s skin care routine in the context of being a busy working mum. The identity work involved in this extract is a negotiation of her social age identity through comparisons between biological ageing in herself and her friends of a similar chronological age group. Her stancetaking revolves around positive evaluations of her own biological age and negative affect towards ageing processes associated with her friends.

In Fee’s first three lines of speech, her relatively positive evaluation of the stance object, her own biological ageing, is centred on actions she has taken to mitigate the biological ageing process, but her investment in this stance can be argued to be quite low, as indicated by the hedging in phrase two. In the following four lines, she sets up a contrasting take on the ageing process, where negative evaluations are directed at “unsuccessful” examples of ageing in her own chronological age group. The last four lines conclude the exchange with a rise in investment. Here, she develops a negative evaluation of her own ageing process and offers an alternative to her

previously named age category, namely the social age identity “old”.

It is interesting that this second age category seems to be socially, rather than chronologically, based: despite her attempts to mitigate physiological ageing, and despite her self-identified life stage (a “busy working mum”), her alignment with her chronological age group means she is considering membership of a social category she defines as “old” to which she could conceivably belong.

This section features three uptalk rises in Fee’s 1st, 5th and 10th lines. The rises occur with the phrases ‘too bad about’, ‘SUFFER with ageing’, and ‘old::’. Note that the indexical links between uptalk and cool youth culture that are exploited by Ava do not seem to be activated in this extract. We can explain this difference with reference to Kiesling’s expanded notion of alignment.

In line two, the high uptalk rise is realised with the introduction to a series of relatively positive evaluations of Fee’s own age. This topic can be viewed as potentially face-threatening for Fee: a woman’s feelings about and actions towards her biological ageing is a socially complex topic. Consequently, Fee might arguably be attempting to minimise face-threat by signalling her wish to align with the interviewer on the topic of the relevant stance objects, drawing upon the first-order indexical links between uptalk and functions such as signalling uncertainty and audience engagement (see Warren, 2016).

This uptalk rise is a high-onset high rise, acoustically very high pitched (322–380 Hz) and near the very top of the speaker’s pitch range in this extract, which further supports the reading of this rise as a cue to high investment, and as indexing interlocutor engagement and uncertainty (see Ohala 1984). With the rises in Fee’s line 5 and 10, we also see uptalk realised with high-investment stances, that is, those involving socially challenging or complex topics: her

friends suffering with the effects of biological age (L5), and her own recasting as “old” (L10).

Here, higher-order indexicalities do not seem to be invoked. This provides additional evidence that indexical links between “youth” and uptalk use are available to speakers, but that uptalk is not exclusively used for age-related work (cf. Jespersen 2019). Furthermore, rather than signalling “youth” in general, we hypothesise that uptalk is linked for Ava to a specific social age group. The difference in uptalk use between Ava and Fee’s passages might thus be explained if this hypothesis holds water: the social age group which is seen by Ava as desirable is not relevant to Fee, who focuses her attention in this section on an “old” age group – to which she could conventionally be seen as belonging. Thus, the indexical links between uptalk and a “cool young person” identity could be seen as lessening the usefulness for Fee of using of uptalk to signal “youth”.

Uptalk and social markers

Table 1. Social age measures for Ava (19) and Fee (57).

Measure	Ava	Fee
Subjective age (mean)	18	40
Subject. age discrepancy	-0.5%	-30%
Age category	Young adult	Late middle to pensioner
Life stage	Early professional	Busy working mum

This section investigates the connections between our two speakers and the three social age markers included in this paper: subjective age, subjective age discrepancy (the difference between speakers’ chronological and subjective ages), life stages and age categories. Through this analysis, we hope to address the hypothesis laid out in the last section:

uptalk is linked to a certain social age group, and thus to social, not chronological, age.

Table 1 contains an overview of the social age markers investigated. Note that both speakers feel younger than their chronological age. However, Ava’s subjective age is much closer to her chronological age compared to Fee’s (0.5% versus 30% lower). Ava (19), a student, sees herself as a young adult and an early professional: she’s on her way up and already on her way onto the linguistic marketplace. The social age measures thus support our reading that social age comes into play in different ways for our two speakers.

For Ava, who in the extract above describe wanting association with older age groups, the social age markers correlate better with chronologically older age groups. Speakers over the age of 18 tend to feel approximately 20-30% younger than their chronological age. But not Ava. Her identity is future-oriented: although a student, she feels like an early professional already. Positing that her use of uptalk is indexically linked with chronological youth, then, does not mesh well with her self-identification. Instead, it co-occurs with stances that positively identify her with a chronologically older social group. It is not chronological youth that is desirable to Ava, but a certain social age group (defined more by “what [they’re] doing” (l. 4) than their chronological age.

For Fee (57), work and family share the limelight as she adjusts to being at the cusp of her pensioners’ age. There’s a tension between her current life stage (“busy working mum”) and her age category (“late middle to pensioner”). She is also looking forward, and thus youth in general, and “cool youth” in particular, is less relevant to her.

Evaluation of social age markers

It is clear from the space taken up by the stance analysis that it is not practicable

for most phoneticians to conduct such an analysis while also conducting experimental phonetic work. However, it is also, we hope, clear that a speaker's social age can influence the meaning of sociophonetic variables such as uptalk, and with that potentially their frequency and form (and *function*) in the dataset. Finally, we note the close agreement between the qualitative analysis of participants' stances on age (which is lengthy) and the quantitative social age measures (which are concise).

We therefore suggest that including social age measures such as *subjective age* (which can easily be included in a recruitment survey or in the introduction to the study) or *age categories* can be both useful and practical for the experimental (socio-)phonetician.

Conclusion

This paper has probed the claim that uptalk is indexically linked to perceived *chronological age* (RQ3). In doing so, it has evaluated several methods for approaching social age (RQ1), from both qualitative and quantitative perspectives. Furthermore, the practicality of these measures for the phonetician (RQ2) has been evaluated.

We proposed that uptalk is linked not to chronological youth, but to a social, achronological age group we termed "cool youth". We invite sociophoneticians to test this hypothesis, and argue that a useful way of accessing, or triangulating, age-related social indexicalities is with social age measures such as the ones trialled in this paper.

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