Ende oration and final /n/-realisation

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This paper presents a sociophonetic analysis of word-final /n/-elision in Ende (Pahoturi River; Papuan). An analysis of 73 speakers reveals that tense, phonological context, and most significantly, whether or not the speaker is a *kawa* practitioner, a prestigious type of public oration, are significantly correlated with /n/-retention. A closer look at just five *kawa* practitioners reveals that age and genre may also play a role. The present study matches Schokkin's analysis of /n/-elision in Idi (this issue). Indeed, the findings support her conclusions that this pattern is one of /n/-elision (not /n/-addition) and show similarities in conditioning factors. Analysing sociolinguistic variation in this region presents a unique set of benefits and challenges. This paper discusses how emically-derived categories relating to age, clan, and orator status may deviate from characterisations of prestige in Westernised and urbanised societies but better fit southern New Guinea's social context.

Keywords: age, elision, genre, oration, Pahoturi River, Papua New Guinea, Papuan, prestige, sociophonetic variation

1. Introduction

This paper investigates the relationship between phonetic variation and social prestige in a multilingual speech community of southern Papua New Guinea. While collecting data in the primarily Ende-speaking communities of Limol and Malam, Ende speakers and I observed that their speech varied in systematic ways that patterned with local conceptions of prestige and standardness. In this article, I present a study that illuminates just one of those linguistic variables – verb-final nasal elision – and its connection with the prestigious practice of *kawa*, a type of public oration. This study was designed to answer three questions:

1. Which linguistic and social factors pattern with the rates of /n/-realisation in the Ende-speaking Limol community?

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2. Is Ende /n/-realisation being used stylistically by frequent users of word-final /n/?
3. Are the patterns of Ende /n/-realisation similar to the patterns of Idi /n/-realisation as observed by Schokkin (this issue) in the Idi-speaking Dimsisi community?

To answer Question 1, I recorded and transcribed a corpus of monolingual interviews with 73 Ende speakers. The speakers were selected to keep various social factors (such as age, sex, clan, etc.) balanced. The tokens coded within the interviews were selected to keep various linguistic factors (such as verb tense, phonological context, word, etc.) balanced. To answer Question 2, I selected five of the most prolific users of verb-final /n/ and recorded their speech in formal and informal contexts to see if speech genre played a role in the realisation of verb-final /n/. Finally, to answer Question 3, I modelled my data collection and selection of statistical variables to match Schokkin's Idi study so that the results could be comparable.

This paper is organised as follows. Section 1 introduces the Ende language and the Pahoturi River language family, the sociophonetic variable under discussion, and a description of *kawa* oration. In Section 2, I describe the data collection and selection of tokens for analysis. This is followed by Section 3: a presentation of the results, a description of the linguistic and social factors included in the statistical analysis, and motivations for the statistical methods used. Finally, in Section 4, I discuss the findings with respect to the Ende social context and how they compare to the matched study of Idi.

1.1 The Ende language community

Ende (ISO-639: kit; Glottocode: ende1235) is one of six Pahoturi River language varieties spoken in the South Fly region of Western Province, Papua New Guinea. A map of this area is shown in Figure 1. There are between 600 (Eberhard, Simons, & Fennig, 2019) and 1000 (Dareda, 2016) Ende speakers in the villages of Limol, Malam, and Kinkin, with approximately 300 residents in each. I conducted the data collection for this paper in Limol, which is primarily an Ende-speaking community though the residents are highly multilingual. Other languages spoken include regional lingua francas, such as English, Tok Pisin, and Motu, other Pahoturi River languages such as Taeme, and other local languages such as Bitur and

Gogodala.[1] The communities in this region are deeply interconnected due to (1) the exogamous practice of sister exchange (Evans, 2012; Williams, 1932, p. 69), whereby men of different villages, clans, or tribes exchange sisters to marry, and (2) the highly mobile nature of the swidden agriculture system that requires families to relocate to stay close to their gardens. According to local historian Wagiba Geser (p.c.), the Ende-speaking community did not live in large villages of about 300 people until the 1970s; before this, the tribe was connected through multi-generational family- or clan-based settlements of 10–15 people that moved throughout the year depending on the season and agricultural activity.

The Pahoturi River language family consists of six underdescribed language varieties. Based on cursory survey data, Pahoturi River has been described as a dialect chain with Idi and Taeme categorised as two dialects of a western language called Idi, while Ende, Kawam, Em, and Agob have been classified as dialects of an eastern language called Agob (Evans et al., 2018). Of the six language varieties, the most documented are Idi (archival collections include Evans, n.d.; Schokkin, 2014) and Ende (Lindsey, 2015; Scanlon, 2018).

1.2 Variable /n/-realisation

The sociophonetic variable under discussion in this paper is verb-final /n/-elision, observed in both Ende and Idi (Schokkin, 2018; this issue). In this pattern, verbs ending in an alveolar nasal, /n/, vary in the presence or absence of their final consonant. For example, the /n/ at the end of the Ende auxiliary verb *nägagan*, (1), is sometimes pronounced and sometimes elided.

(1) *Ngäna sana yu nägaga**n**.*[2]

ŋəna	sana ju	nəgaga**(n)**
1SG.NOM	sago fire.cook	AUX.REC.1SG > 3SG
I	sago cook with fire	I did it

'I cooked sago on the fire.' (Joanang, 2018: 212.1)

Ende speakers insist that this final /n/ be included in written documents and also correct the /n/-less pronunciation in oral recordings. These corrections are reasonable indications that the /n/-full variant is considered standard within the

1. A demographic survey of 73 Ende speakers analysed by Munsiff and Lindsey (2020) found that knowledge of English and Tok Pisin are on the rise in this community while knowledge of Motu, other Pahoturi River languages, and other local languages are on the decline.

2. Ende examples are provided in the standard orthography. Non-transparent graphemes correspond with the following IPA symbols: *ä* /ə/, *ae* /aj/, *dd* /ɖ ~ ɖz/, *ll* /ɽ/, *ng* /ŋ/, *ny* /ɲ/, *oe* /oj/, *tt* /ʈ ~ ʈs/, *y* /j/ (Lindsey, 2021).

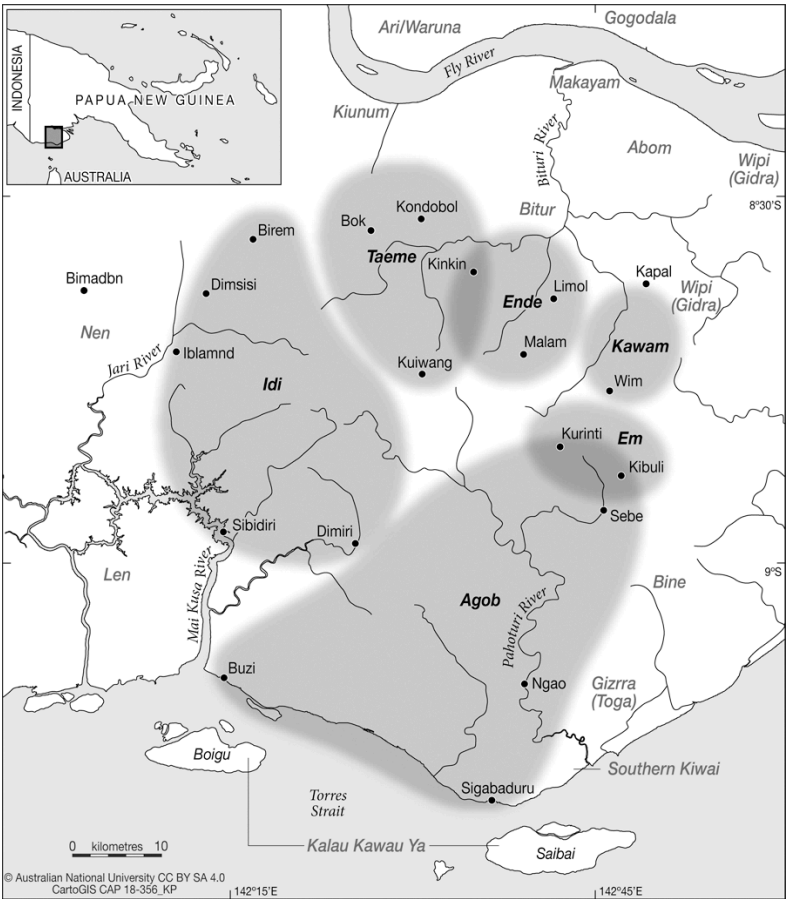

Figure 1. Map detailing approximate locations of primarily Pahoturi river-speaking villages

community. The fact that speakers are aware of the variable, that there is an established standard, and that the variable is extremely frequent in casual discourse makes this variation pattern an excellent choice for investigating the relationship between standard linguistic variants and social prestige in the community.

This study also offers an opportunity for comparative analysis within the family. Schokkin (this issue) observed a similar /n/-elision pattern in Idi. Her findings show that the probability that Idi speakers will realise verb-final /n/ correlates with both linguistic and social factors: verb-final /n/ is least likely to be realised in the present tense, before following consonants, and by older speakers. To understand which linguistic and social factors may be relevant in Ende and how they relate to the same pattern in Idi, I designed my data collection and methods to

approximate Schokkin's approach so that the two analyses could be compared. That said, I also looked at linguistic and social factors that arose in my analysis of the Ende data and my observations of the social context in Limol village in particular that may differ from the Idi sociolinguistic context. One such social factor is related to the practice of *kawa*, a type of public oration performed in Ende communities.

1.3 *Kawa* oration

Kawa, 'speech, sermon', is a type of oration performed publicly in Ende villages and has been described in Lindsey (2019, p. 242) and Strong, Lindsey, and Drager (2020).[3] Traditionally, *kawa* involved a person with high social standing in the community, who made oral speeches while walking around camping places, gardens, and other places where family groups would gather. Nowadays, these speeches are performed while touring the village, standing in the village centre, or standing in front of the home of the speech's target audience. These speeches have various purposes: to encourage, inform, admonish, or implore. These speeches are listened to, even if the tone is unpleasant or if the subject is negative. To ignore the oration or leave the area would be a severe breach of a social contract.

Of relevance to this paper, it is not the case that just anyone can give such a public speech. Typically, *kawa* practitioners are old enough to be married, may have another official position within the community (such as the chief, pastor, judge, etc.), and grew up in the Ende community. These qualifications have the effect that *kawa* practitioners tend to be older, employed, married, and male – social factors that are already associated with prestige independently in this community. However, as will be shown in the analysis section below, the factor of orator status proved to be the only significant social factor correlated with variable /n/-realisation, unlike age, marital status, and gender.

2. Data collection and token selection

To address this study's Questions (1–3 above), I collected two sets of natural speech as spoken by many speakers. The first data set consists of monolingual interviews with 73 Ende speakers and the second data set contains additional

3. Other work that references similar local practices include Döhler's (2018) use of Komnzo public speech data in his grammatical examples (e.g., p. 124) and Kashima's (2020, p. 55) description of prestigous multilingual public speaking in the Morehead area by Nen and Nmbo speakers.

recordings of formal speech for five of those speakers. Most of the interviews were recorded in January 2018. Other recordings and observations took place during eleven months of residency by the author in Limol between June 2015 and June 2018. All participants speak Ende as one of their first languages and have spent all or most of their lives in Limol or Malam, two Ende-speaking communities. The two villages are 10 kilometers apart and connected via footpaths and one large dirt road that accommodates an off-road vehicle. I did not observe any speech differences between the villages. Still, I included the speaker's primary residence as a possible social factor in the statistical analysis of the variation (see Section 4 for more on factor selection).

One goal for the data collection was to collect a sufficient number of tokens from a broad range of speakers in a casual, natural setting. To this end, I personally conducted the interviews monolingually in Ende and asked each speaker at least 59 questions about their language use, language ideologies, family members, and daily life. Wagiba Geser and Kalamato Joanang assisted in interviews with three of the oldest speakers in the village: Bibiae Zakae, Kidarga Nakllae, and Biku (Madura)[4] Kangge. I selected the questions based on similar sociolinguistic questionnaires developed for the region by Schokkin (p.c.) and Döhler (2018, p. 34) and translated them into Ende with help from Warama Kurupel (Suwede) and Wagiba Geser. During the interviews, I encouraged speakers to speak freely and asked follow-up questions to get more natural speech. The interviews were recorded in Limol at my or the speaker's home on a ZoomQ8 video recorder with a Samson head-mounted microphone.[5] The average length of each interview was 18.3 minutes.

For the second data set, which was used to assess the role of style in the variation across a subset of the speakers, I recorded five speakers in more formal settings, such as during a spontaneous *kawa* oration event and contributing a monologue narrative to the Ende language corpus. These sixteen speech events were recorded using the aforementioned setup and the average length of each recording was 7.3 minutes.

In order to assess and count the /n/-final tokens in the interviews and formal events, each audio recording was segmented into intonational units of about one utterance. Utterance breaks were identified as ends of phrases with generally falling intonation and periods of silence longer than four seconds. These utter-

4. Ende naming conventions typically include a given name as a first name and a patryonym (here, the father's first name) as a second name. Other names (including other given names or grandfather's first names) are shown in parentheses according to the preferences of the speaker.

5. The video was recorded with a bit rate of 16000 kbps and the audio with a 16-bit depth rate and a 44100 Hz sample rate.

ances were transcribed into Ende but have not yet been translated into English. For our purposes, it was important that the /n/-final words were transcribed according to the standard variant of the word (that is, they were transcribed with word-final /n/, whether or not the /n/ was audible in the audio recording). Thus, the recordings were transcribed by speakers who had an intuitive sense of the Ende standard. First, Ende-speaking researchers Warama Kurupel (Suwede) and Tonny (Tonzah) Warama transcribed each recording in the standard Ende orthography. They had very clear intuitions on how words should be written in the orthography, regardless of the variable pronunciation of these words within the interviews and the absence of a formal written standard for the language.[6] Next, I checked the transcriptions for accuracy and aligned them with the audio by typing them into a tier in ELAN. Finally, I checked the transcriptions for orthographic misspellings with an automatic parser trained on a corpus of 100K+ Ende words. Transcribed words in the interviews with very low-frequency counts were rechecked for accuracy in transcription.

2.1 Token selection

Once the transcription was complete, I used an ELAN script to list all words ending in /n/ from the interview files into a CSV file with accompanying metadata, such as recording information and surrounding phonological context. In total, the 73 interviews contained 9,941 tokens of 809 unique /n/-final words. The 16 formal speech events contained 843 tokens of 247 unique /n/-final words. On average, the interviews contained 127 /n/-final words (min: 27, max: 343). However, variable /n/-realisation was only observed in /n/-final verbs.

In Ende, three classes of verb forms may end in /n/: copular verbs, synthetic verb forms, and analytic verb forms. Among copular verbs, only those that index present tense and singular subject typically end in /n/; two examples are shown in Table 1 (a–b).[7] Synthetic verb forms consist of auxiliary and lexical verbs in their inflected forms. Synthetic verb forms that end in /n/ may end in /n/-final suffixes that index tense, subject person, and subject number (c–f), or they may end in /n/ because the root of the verb ends in /n/, (g–h). Analytic verb forms are minimally inflected verb roots appearing either in a light verb or an infinitival verb construction. These forms may end in /n/ if the verb ends in a pluractional suffix

6. Note that in W. Kurupel and T. Warama's interviews, they realised word-final /n/ 71% and 63% of the time, respectively.

7. However, some Ende speakers produce a less common variant of the present tense copulas ending in /ən/: *danän, dagwä*n, and *dagän* (COP.SG.PRS, COP.DU.PRS, and COP.PL.PRS, respectively).

such as /-ən/ or /-nin/, which index singular or plural absolutive arguments and event number, respectively (i–j).

Table 1. Types of verbs that end in /n/

/n/-final verb types	Example		Morphological gloss	Translation
Copular verbs	a.	*da=n*	INT.DEM=COP.SG.PRS	'I am'
	b.	*gänya=n*	here=COP.SG.PRS	'I am here'
Synthetic verbs	c.	*d-a-g-än*	REM-RT.EXT-AUX-REM|FUT.3SGS	'She did it'
	d.	*bo-g-on*	FUT-AUX-REM|FUT.3SGS	'She will do it'
	e.	*a-g-an*	RT.EXT-AUX-PRS|REC.1|3SGS	'I did it'
	f.	*all-an*	PRS.AUX-PRS|REC.1|3SGS	'I am doing it'
	g.	*go-zen*	REM-exit.SG	'I left'
	h.	*d-ä-nglläbän*	REM-3NDUP-get.up.SG	'I got up'
Analytic verbs	i.	*ngällb-än*	get.up-SGS	'to get up'
	j.	*inu-nin*	sleep-PLS	'to sleep'

The variable patterns of /n/-realisation are not distributed evenly across these three classes of verb forms. Copular verb forms, like *dan* 'I am', are the least likely to be realised with final-/n/ (54%), followed by synthetic auxiliary forms like *allan* 'I am doing it' (72%), synthetic lexical forms like *nallan* 'I went' (82%), and finally analytic lexical verb forms like *panynen* 'to speak' (97%). These counts come from acoustic analysis of /n/-realisation across 649 verb tokens as spoken by the subset of five Ende speakers in both the formal monologues and the casual interviews.

The verb classes with the most significant variation across this speaker sample were the copular and auxiliary verb forms. The three male speakers produced /n/-final copulas at rates between 61% and 71%, while the two female speakers produced /n/-final copulas at 33% and 36%. For the auxiliaries, the two younger speakers produced /n/-final auxiliaries at a rate of 88%, while the three oldest speakers produced /n/-final auxiliaries at rates between 52% and 77%. On the other hand, /n/-final rates for lexical synthetic and analytic forms were much more uniform across the five speakers. The linguistic properties of the Ende lexical verbs likely contribute to the frequency differences observed in the corpus. The key difference between the analytic and the synthetic verb forms is that analytic forms ending in /n/ always end in a pluractional morpheme and are always followed by either an auxiliary verb or a phrasal clitic. Thus, they are never utterance final and in cases of cliticisation are not final in the phonological word either. On the other hand, synthetic forms ending with /n/may have no suffix, a plurac-

tional suffix, or a subject agreement suffix, and are never followed by auxiliary verbs or phrasal clitics. Given that the copular and auxiliary verb forms show the most variation across speakers, I chose to only look at the copular and auxiliary verb forms across the entire speaker sample ($n = 73$) to investigate the variation further.

Specifically, I calculated the percentage of /n/-realisation by all 73 speakers in their production of the present tense copula and the four intransitive auxiliary verbs: *dan* 'COP.PRS.SGS', *gogon* 'AUX.REM.3SGS', *agan* 'AUX.REC.1|3SGS', *allan* 'AUX.PRS.1|3SGS', and *bogon* 'AUX.FUT.3SGS'. These forms have the frequencies and properties shown in Table 2. *Dan* is the most frequent /n/-final word form in the corpus, while *gogon, agan, allan*, and *bogon*, are the most common auxiliary verb forms.

Table 2. Coded data selection

Verb	Tokens in corpus ($N = 9120$)	Subset analysed in study ($N = 1577$)	Verb class	Tense	Subject person agreement
da=n	2111	953	Copula	Present	Singular
all-an	405	343	Intransitive auxiliary	Present	First or third singular
go-g-on	159	147	Intransitive auxiliary	Remote past	Third singular
bo-g-on	85	66	Intransitive auxiliary	Future	Third singular
a-g-an	79	68	Intransitive auxiliary	Recent past	First or third singular

These five verbs were selected for further study for three primary reasons. As stated above, the copular and auxiliary verbs exhibited the most extreme variation levels in my preliminary exploration of the speech of five speakers. Second, their high frequency allowed me to collect multiple tokens from each of the 73 speakers in my sample in diverse phonological contexts. Finally, Schokkin's analysis of Idi /n/-variation revealed significant effects of tense and moderate effects of agreement on the realisation of the dependent variable. For this reason, I selected four /n/-final forms of the basic auxiliary that vary by tense (remote past, recent past, present, and future) and by subject agreement (either third singular or first and third singular).

The second data set that I collected to look at possible stylistic variation consisted of a smaller number of speakers but a larger set of speech contexts and verbal tokens. I selected the speakers in Table 3 for further analysis because they were

frequent users of verb-final /n/ and I had recordings of their speech in multiple linguistic genres, including a formal narrative recorded for the Ende Language Corpus, a formal oration event with an audience, and the more casual interview between the speaker and the author.

Table 3. Social characteristics of the five orators selected for extended analysis

Name	Sex	Age	Hometown	Clan	Tokens coded (N=649)
Wagiba Geser	F	46–61	Limol	Yamkong	99
Aitru Kullwam	F	46–61	Malam	Ddiliag	96
Gidu Jerry †	M	30–45	Limol	Ddiliag	104
Geoff Rowak	M	46–61	Malam	Ddiliag	196
Warama Kurupel (Suwede)	M	46–61	Limol	Ddiliag	154

For these speakers, I expanded the token selection to include all /n/-final verbs to ensure that even the shorter recordings had adequate tokens per speaker.

3. Results

This section presents in further detail how I coded the data both for the dependent variable (realisation of verb-final /n/) and for relevant independent variables (linguistic and social factors) to answer Questions (1) and (2). These are presented with intermittent results that describe raw frequency patterns in the data. The statistical modelling and interpretation of the frequency data are presented in Section 3.4.

3.1 Coding and factor selection

Recall that for the interview corpus, five verbs were selected as possible tokens. Half of the copular tokens and all of the auxiliary tokens were coded auditorily for the presence or absence of the dependent variable using auditory and acoustic evidence (N=1711). The reason why I chose to code only half of the copular tokens was to control for the following phonological context. I predicted that the following phonological context (whether it be a consonant, vowel, pause, or utterance) would affect the rates of /n/-realisation (cf. Schokkin, this issue). Thus, I selected relatively equal proportions of following consonant, vowel, pause, and utterance break for each speaker. The uncoded copular tokens were almost all in utterance-final position. Moreover, any verbal tokens that preceded a word

beginning with a nasal segment (/m, n, ɲ, or ŋ/) were excluded. The presence or absence of /n/ at the end of the word was coded as a binary variable.[8]

A summary of the auditory coding of the dependent variable by word is shown in Table 4. There is a clear difference in /n/-realisation rates in verbs like *dan, allan*, and *agan* compared to verbs like *gogon* and *bogon*.

Table 4. Rates of /n/-realisation by word for all 73 speakers

Word	Coded (*N* = 1577)	% with /n/
allan	343	30%
dan	953	31%
agan	68	44%
gogon	147	80%
bogon	66	82%

3.2 Linguistic factors

To explore the effects of other linguistic factors besides word, I coded each token for several linguistic factors. Both the preceding segment (/a/ or /o/) and the following segment (consonant, vowel, pause, utterance break) were considered for local phonological context. It was predicted that final-/n/ would be most likely to be reduced in pre-consonantal contexts, as the realisation of both the nasal and the following consonant would result in a consonant cluster across the word boundary. Indeed, when the following word began with a consonant that was uttered within 500 milliseconds, final-/n/ was only realised 26% of the time. Further support for the hypothesis that elision is effected by articulatory ease is found in the graded results of consonant clusters: /n/ is realised more often before more articulatorily similar consonant cluster sequences (e.g., homorganic voiced obstruents /d/ and /z/, 56%) than less similar sequences (e.g., heterorganic voiced obstruents /b/ /ɖ/ /g/, 40%; homorganic voiceless obstruents /t/ /s/, 32%; and heterorganic voiceless obstruents /p/ /ʈ/ /k/, 21%).

Verb-final /n/ in utterance-final contexts exhibits similar rates of elision as in pre-consonantal contexts. These contexts also co-occurred with a general reduc-

8. Ongoing work with Christian Brickhouse shows that in 46 sample tokens of the copula *dan* in pre-vocalic position, the acoustic patterns of F1 formants through the nasal articulation indicate varying stages of reduction, including deletion, as opposed to a binary present/absent pattern (Brickhouse & Lindsey, 2020; Lindsey & Brickhouse, 2020). As tokens with no auditory nasal vastly outnumbered tokens with a reduced or present auditory nasal, all tokens with a weak nasal signal were coded as present for this study.

tion in volume, pitch, and speed across the utterance. These characteristics support the long-accepted main effect of prosodic position, *final weakening*, such that segments at the end of utterances, turns, or intonational phrases tend to have less extreme articulation than in other prosodic positions (Browman & Goldstein, 1992; Hock, 1986).

Table 5. Rates of /n/-realisation by the following segment for all speakers

Following context	Coded (N=1577)	% with /n/ realised
Consonant	323	25%
Voiced	234	29%
Voiceless	89	15%
Utterance break	774	35%
Vowel	277	47%
Pause	203	58%

The effect of the preceding segment, whether an /a/ or an /o/, is in a collinear relationship with the effect of the tense of the verb. This means that the vowel is indicative of the tense. Verb forms end in *-on* in the remote past and future tenses and *-an* in the recent past and present tenses. Final-/n/ is realised least often in the present tense at 30–31% and only slightly more often in the recent past (39%). Final-/n/ is realised considerably more often in the remote past and future tenses at 80% and 82%, respectively.

Table 6. Rates of /n/-realisation by preceding segment, tense, and verb class for all speakers

Preceding segment	Tense	Verb class	Coded (N=1577)	% with /n/ realised
a_	Present	Copula	953	31%
a_	Present	Auxiliary	343	30%
a_	Recent past	Auxiliary	68	44%
o_	Remote past	Auxiliary	147	80%
o_	Future	Auxiliary	66	82%

Each verb was also coded for subject agreement, as preliminary analyses suggested that this may be a contributing factor to variable /n/-realisation in Idi. No apparent patterns emerged in final-/n/ realisation when considering subject agreement across the different verb classes. The copular verb *dan* may agree with first, second, or third person subjects, while the recent past and present auxiliaries

agan and *allan* may only agree with first or third person subjects. The remote past and future auxiliaries *gogon* and *bogon* may only agree with third-person subjects.

Table 7. Rates of /n/-realisation by subject person agreement and verb class for all speakers

Verb class	Subject person agreement	Coded ($N = 1577$)	% with /n/ realised
Copula (PRS)	First	71	41%
	Second	14	21%
	Third	868	30%
Auxiliary (REC/PRS)	First	280	34%
	Third	131	29%
Auxiliary (REM/FUT)	Third	213	81%

An intriguing pattern visible in Table 7, is that the rates of /n/-realisation generally decrease as the number of possible person values for person agreement increases. In other words, if the suffix has the potential to agree with more than one person type, it is less likely to occur with final-/n/. As subject person agreement is typically indexed in the suffix, this decrease in prominence of the verb-final /n/ could be attributed to a reduction in the functional load of the suffix. This hypothesis that phoneme contrasts with high functional load are more resistant to loss is supported by cross-linguistic analysis of sound changes in a diverse set of languages (Wedel, Kaplan, & Jackson, 2013).

Finally, I considered genre and style by looking at rates of /n/-realisation in two speech styles: casual and formal. For the casual style of speech, I took tokens from the sociolinguistic interviews. For the formal speech style, I looked at monologues: a spontaneous *kawa* oration event in front of an audience and a prepared spoken narrative without an audience. I predicted that I would find more tokens of /n/-realisation in the more formal speech styles and less in the casual style, given that standardised variants tend to be used more often in more formal speech (Wolfram & Schilling, 2015, p. 387). Table 8 shows how many tokens were coded for each of the five chosen speakers in each genre, as well as the rates of /n/-realisation.

A summary of the linguistic factors considered for this analysis is presented in Table 9.

Table 8. Rates of /n/-realisation by speaker and genre

	Casual interview		Formal *kawa* oration		Formal narrative	
Speaker	**Coded**	**% with /n/**	**Coded**	**% with /n/**	**Coded**	**% with /n/**
Wagiba Geser	31	54.8%	48	70.8%	20	70.0%
Aitru Kullwam	58	34.5%	38	63.2%		
Gidu Jerry †	41	84.2%	37	87.5%	26	83.6%
Geoff Rowak	57	73.2%	72	91.9%	67	88.5%
Warama Kurupel (Suwede)	38	60.5%	52	80.8%	64	68.8%

Table 9. Linguistic factors considered

Factor	**Values**	**Notes**
Following segment	C, V, #, ##	## indicates that the token was followed by an utterance break or a pause of longer than four seconds. # indicates a pause of fewer than four seconds but more than 500 milliseconds. C and V indicate consonants and vowels that follow the token with a pause of fewer than 500 milliseconds.
Preceding segment	a, o	One of the two possible vowels that can precede /n/ in these verbs.
Tense	FUT, PRS, REC, REM	FUT = future, PRS = present, REC = recent past, REM = remote past
Subject agreement	1, 2, 3	Agreement with a first-person (1), second-person (2), or third-person (3) subject.
Word class	COP, AUX	COP = copula, AUX = auxiliary
Genre	casual interview, formal oration, formal narrative	Only considered in the five-speaker analysis.

3.3 Social factors

To investigate the speaker's effect on variable /n/-realisation, I also included several social factors in my analysis. In the traditional variationist literature, specific social categories, such as age, gender, ethnicity, and socioeconomic status, have been found to pattern consistently with sociophonetic variation, at least in Western contexts (e.g., Eckert, 1989; Labov, 1990; Wassink, 2015). However, it is not clear to what extent these findings are generalisable to other social-cultural settings or other language families (see e.g., Smakman & Heinrich, 2015; Mansfield & Stanford, 2017; Barth, Schokkin, Travis, Lindsey, & Stanford, 2019; Clarke, 2009; Skilton, 2017; Suokhrie, 2016). Therefore, I used an emic (or community-oriented) approach to identify and define the social categories that I considered for this analysis; such ethnographic approaches to understanding social variation have been used in both Western (e.g., Eckert, 2011; King, 2018; Zhang, 2005) and non-Western (e.g., Clarke, 2009; Skilton, 2017) contexts.

Gender is a very salient social category in Ende's patriarchal social system (see Strong, Lindsey, & Drager, 2020) and thus, was included as a factor with two observed values: male and female.

Age is another clear category that plays an important role in Ende society. With age comes increased prestige within the community. Elders are respected and cared for, not only by their siblings and progeny but also by the whole community. Social clout comes with growing older as young adults meet milestones such as building and furnishing new houses, getting married, starting gardens, and having children. Age, as a personal attribute, can be understood as representing both a person's place in time since birth and a person's membership in a cohort of people who share a similar history and life experience (e.g., as suggested by Eckert, 2017). It is this second understanding of age that is most familiar with the Ende speakers I interviewed. When asked about their age, most interviewees responded by naming others in the community who were the same age group as them. These age groups were defined by shared life experiences such as the village's location during childhood, access to education, and key historical events. In other words, age as an exact number is not a meaningful social metric in the Ende community. Instead, speakers group themselves with others in the village of a similar age who share similar life experiences. The age cohorts shown in Table 10 were emically determined by several events within the community that marked a significant social change. For instance, those speakers born before 1956 (aged 62+ in 2018) grew up when Limol was located in a place called *Llimoll ma kuddäll* 'Old Limol'. These speakers were too old to receive a primary education when the first schools were established upriver in Upiara. Many witnessed World War II and early colonial contact in the area. Those aged 46–61

were the first to attend the English-medium primary school in Upiara and were born after the Australian colonisation of New Guinea (witnessed in Limol in the late 1950s). When these speakers, and those aged 30–45, were growing up, Limol was located in a place called *Kibobma*, which was closer to the swamps for fishing. Speakers aged 30–45 were born after Papua New Guinea became an independent country in 1975 but were too old to receive an elementary education in Ende when the first elementary school was opened in Limol (in its present location) in 1999. Speakers aged 15–29 attended this Ende-medium elementary school and the English-medium primary school in Upiara, were born after the village converted to Christianity, and grew up with the village of Limol located in its current location of *KT* or *Kurupel täräp* 'Kurupel's hunting place'. Additional support for grouping these cohorts is apparent in the use of kinship terms. Community members in higher age cohorts are called parents or grandparents, even when non-biologically related, and those in younger cohorts are often called children.

Table 10. Significant experiences that distinguish age cohorts

Factors	**15–29**	**30–45**	**46–61**	**62+**
Location of Limol at birth	*KT*	*Kibobma*	*Kibobma*	*Ma Kuddäll*
Access to Education	Primary (English) Elementary (Ende)	Primary (English)	Primary (English)	None
Historical events	Born after conversion to Christianity	Born after PNG independence	Born after Australian colonisation	Witnessed World War II and first colonial contact

The speaker sample (Table 11) was balanced primarily by age and gender of the speaker, such that at least sixteen speakers (eight male, eight female) were interviewed within each age cohort. In one age cohort (62+), every available speaker in Limol village was interviewed.

Table 11. Speaker sample for the all-speaker analysis

Gender	**15–29**	**30–45**	**46–61**	**62+**	**Total**
Female	9	9	10	8	36
Male	9	12	8	8	37
Total	**18**	**21**	**18**	**16**	**73**

When looking at rates of /n/-realisation in consideration of gender and age cohort, two patterns emerge. First, men use final-/n/ at higher rates than women (41% v. 34%). Second, the middle age cohorts use final-/n/ at slightly higher rates (30–45s at 39% and 46–61s at 46%) than the youngest and oldest cohorts (28% and 36%; see Table 12).

Table 12. Rates of /n/-realisation by sex and age cohort

Sex and age	Coded (*N* = 1577)	% with /n/ realised
F	784	34%
M	793	41%
15–29	322	28%
30–45	438	39%
46–61	385	46%
62+	432	36%

Another social variable that I considered was clan membership. Clan is an important social factor to consider with regards to speech variation (c.f., Stanford, 2009), particularly because of its role in delineating smaller speech communities within the larger Ende-speaking community. If, as was the case before the 1970s, a child grows up receiving most of their speech input from members of their clan and has limited exposure to other clan groups due to geographic distance, one might expect clan membership to affect the acquisition of speech and the development of standards. In the Ende community, all members of the Ende tribe are affiliated with a specific *tän* or 'clan' that they inherit from their father or adoptive father. At the most general level, all Ende *tän* can be divided into two moieties: *ddɨliag* and *yamkong*, which are found in equal numbers in both Ende villages. *Ddɨliag* is associated with the colour *pällämpälläm* 'white' and the *kakayam* 'bird of paradise'. *Yamkong* is associated with the colour *mamam* 'red' and the *inpiak* 'eagle' (Dobola, p.c. 2018). These two general clan classes are further subdivided into several subgroups (or subsubgroups) representing distinct geographic origins and the family-size hamlets that people used to live and travel with before the recent post-colonial population merge into multi-clan villages. See Lindsey (2019, p. 272) for more discussion of the role of clan in the Ende context.

Raw counts do not indicate a sizeable difference in /n/-realisation rates between the two general clan groups (see Table 13). There are a few reasons why this lack of difference might not be surprising. First, variable /n/-realisation is used by speakers in various dialect, language, and geographic groups, including the most geographically remote related speech community of Idi (see Schokkin,

Table 13. Rates of /n/-realisation by clan

Clan	Coded (*N*=1577)	% with /n/ realised
Ddiliag	860	39%
Yamkong	717	36%

this issue). Thus, I might not expect group membership to play a significant role if the variation of /n/-realisation was established before the community split into clan groups. Second, while the concept of clan used to refer to distinct groups of people separated by social and geographic distance, the forced population mergers have significantly altered this social landscape. The Ende tribe now lives primarily in one large village. In the sociolinguistic questionnaires gathered in 2018, some people did not know the name or totems for their mother's clan (Kurupel (Suwede), 2018 #160), their spouse's clan (Kurupel, 2018 #212), or even their own clan (Geoff, 2018 #103). This lack of awareness may indicate a shift in the importance or usefulness of clan groups within the community.

I also considered marital status as a potential social factor because the events of marriage and the death of a spouse have great significance in a speaker's social standing within the community. Much like in a Western context, the act of marriage is an important signifier of social status. Married adults will move out of their parents' homes, begin their own gardens, have children, and will be eligible for community leadership roles, such as chief, recorder (community secretary), pastor, and judge. On the contrary, a spouse's death may trigger a move back into the family home and a period of mourning that releases one from community leadership activities. As the realisation of /n/ is said to be the standard or correct variant in use, I hypothesise that speakers with higher social status (i.e., married adults) will use the standard variant more often.

Interestingly, the raw percentages of /n/-realisation across the three groups of married, single, and widowed speakers show that married speakers are much more likely to realise /n/ in word-final position than single or widowed speakers. This factor, however, is clearly in a collinear relationship with other social factors such as age and orator status. Moreover, the coded data counts are not evenly distributed across the three values.

Table 14. Rates of /n/-realisation by marital status

Marital status	Coded (*N*=1577)	% with /n/ realised
Single	330	28%
Married	994	45%
Widowed	253	28%

The final social factor that I investigated was orator status. The title of orator refers to those who perform *kawa* oration, as described in the introductory section of this paper.

Table 15. Rates of /n/-realisation by orator status

Orator status	Coded (*N*=1577)	% with /n/ realised
Orator	640	49%
Non-orator	937	30%

There is a clear difference in /n/-realisation rates between orators and non-orators (see Table 15). Orators realise word-final /n/ around 50% of the time, while non-orators realise word-final /n/ much less often, approximately 30% of the time. Table 16 organises all the social factors considered in the analysis of all 73 speakers.

Table 16. Social factors considered

Factor	Values	Notes
Hometown	Limol, Malam	Two villages where Ende is spoken.
Gender	F, M	No speakers in this study publicly identified as transgender or non-binary. Female (F) and male (M) serve as a proxy for how speakers socially presented within the community and possibly biological sex.
Age	15–29, 30–45, 46–61, 62+	These four age groups represent four emically derived social cohorts that share similar life experiences.
Clan	*Ddiliag, Yamkong*	These two clan names represent the primary distinction in clan classification in the Ende community.
Marital status	single, married, widowed	Marital status of the speaker at the time of the interview.
Orator status	orator, non-orator	Some members in the community regularly engage in public oration often along with an official position (such as pastor, chief, or recorder). This category is a proxy for power or class within the community.

3.4 Statistical modelling and results

Now, let us consider how the data inform my first question: which linguistic and social factors pattern with the rates of /n/-realisation in the Ende-speaking community in Limol? To answer this question, I tested for statistical significance of all the linguistic and social factors (and their interactions) that I identified in the previous two sections. To do this, I ran a generalised linear mixed model on the data of the 73-speaker corpus using the R package lme4 (Bates, Mächler, Bolker, & Walker, 2015) and I used the R package ggplot2 to visualise the data (Wickham, 2016). In the statistical analysis, I analysed multiple models using glmer() and all possible permutations of linguistic and social factors as independent variables, realisation of /n/ as the dependent variable, with speaker and word as random effects. I then tested for the best fit by determining the Akaike information criterion (AIC) for each model and selecting the model with the lowest AIC or best fit. When the factors following segment, tense, and orator status were included, they improved the fit of the model. All other factors, both independently and in interactions, worsened the model's fit. This analysis shows that /n/-realisation across five verbs as spoken by the 73 speakers in my sample is significantly affected by three independent variables:

i. following segment: consonants (C) and intonation breaks (##) are more likely to co-occur with the /n/-less form than are vowels (V) or pauses (#);
ii. tense: recent past and present tense verbs are more likely to co-occur with the /n/-less form than the remote past and future tense verbs.
iii. orator status: non-orators are more likely to use /n/-less forms than orators

The optimised model output is presented below in Table 17.

This model indicates that orator status, following segment, and tense all significantly affect /n/-realisation. Final-/n/ is more likely to be realised by speakers who are orators, as shown in Figure 2. Orators realise verb-final /n/ at much higher rates than non-orators, with no apparent patterns of age or gender-effects (including an interaction of age, gender, and orator status did not improve the model).

Final-/n/ is also more likely to be realised in future and remote past tensed verbs (see the leftmost and rightmost panels in Figure 3) and more likely in pre-pause and pre-vocalic position (see the leftmost and rightmost groups within each panel in Figure 3).

To answer the second question posed by this study (Is Ende /n/-realisation being used stylistically by frequent users of word-final /n/?), I tested the significance of genre or speech context for just five Ende orators across three speech styles: casual interview, formal oration, and a formal narration. Recall that I

Table 17. Output of model fit to data from all 73 speakers: Model <– glmer(Nasal_drop~Fol_seg+Tense+Orator+(1|Speaker_code)+(1|Word), data=data, family=binomial)

Fixed effects	Estimate	Std. error	z value	Pr(>|z|)
(Intercept)	1.6710	0.4011	4.166	3.10e-05***
Following segment = utterance boundary	−1.0297	−5.409	0.1903	6.32e-08***
Following segment = consonant	−1.4205	0.2220	−6.399	1.56e-10***
Following segment = vowel	−0.4608	0.2201	−2.094	0.03625*
Tense = present	−2.2493	0.3588	−6.268	3.65e-10***
Tense = recent past	−1.2647	0.4451	−2.841	0.00449**
Tense = remote past	0.5503	0.4296	1.281	0.20016
Orator = yes	1.0223	0.2370	4.313	1.61e-05***

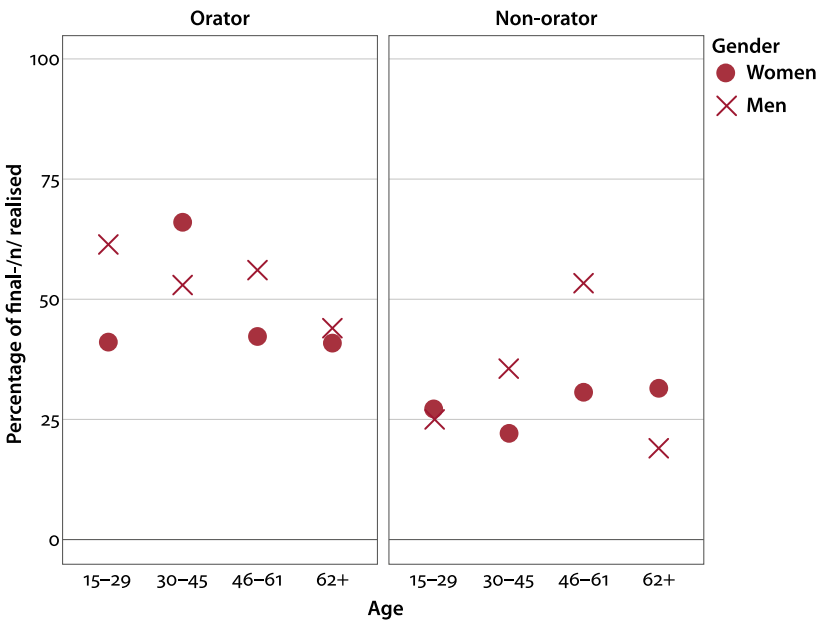

Figure 2. Percentage of tokens realised with final-/n/ by orators (left panel) versus non-orators (right) across age, with women shown as filled circles and men as "X"s

extended the token set for this corpus to include all verbs with final /n/ to ensure adequate token counts for all speech styles. Here, I analysed multiple logistic regression models with all possible permutations of the independent vari-

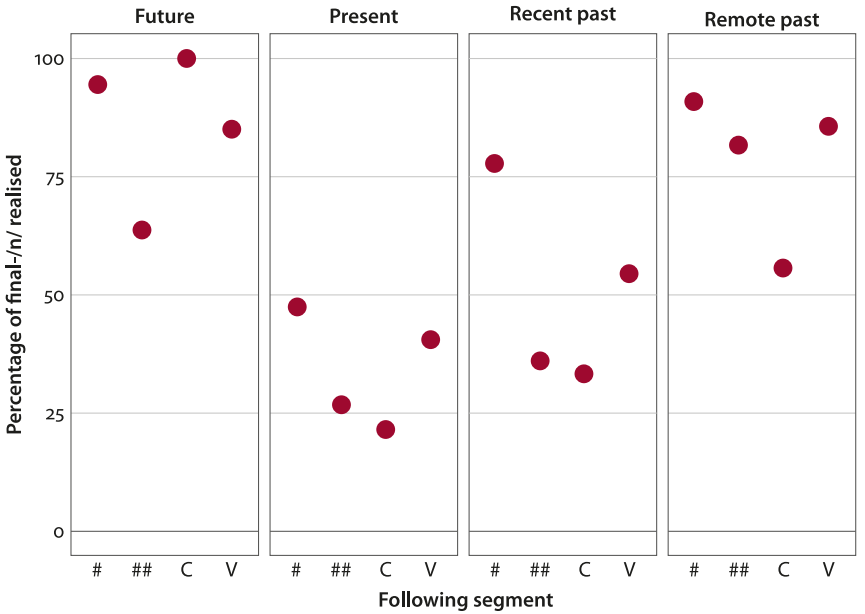

Figure 3. Percentage of tokens realised with final-/n/ by tense and following segment (# = pause, ## = utterance break, C = consonant, V = vowel)

ables listed above. In all models, /n/-realisation was the dependent variable, and speaker and word were included as random effects. I compared the AIC for each model and chose the model with the lowest AIC to be the best fit. The best-fitting model was the following: dependent variable /n/-realisation, independent variables following segment, tense, genre, and age, with speaker and word as random effects. The effects of the four variables are as follows:

i. following segment: consonants (C) and intonation breaks (##) are more likely to co-occur with the /n/-less form than are vowels (V) or pauses (#);
ii. tense: remote past, future, infinitival, and recent past are most likely to co-occur with /n/-full forms (81%) when compared to present (30%);
iii. genre: formal oration speech events are more likely to have /n/-full forms when compared to formal narrative or casual interview speech events; and
iv. age: younger orators (aged 30–45) are more likely to produce /n/-full forms than older orators (aged 46–61).

When the factors following segment, tense, genre, and age were included, they improved the fit of the model. All other factors, both independently and in interactions, worsened the fit of the model. The model output is presented below in Table 18.

Table 18. Output of model fit to data from five speakers: Model <– glmer(Nasal_drop~Fol_seg+Genre+Tense+Age+(1|Speaker_code)+(1|Word), data=Data.five_orators.all_verbs, family=binomial)

Fixed effects	Estimate	Std. error	z value	Pr(>|z|)
(Intercept)	2.6290	0.7583	3.467	0.000526***
Following segment = utterance boundary	0.1098	0.3594	0.305	0.760027
Following segment = consonant	−0.7915	0.3653	−2.167	0.030242*
Following segment = vowel	0.2901	0.4001	0.725	0.468379
Genre = formal narrative	−1.0856	0.3376	−3.215	0.001304**
Genre = casual interview	−0.8241	0.2602	−3.168	0.002537**
Tense = future	0.7722	0.4947	1.561	0.118487
Tense = infinitival	2.3870	1.1336	2.106	0.035235*
Tense = recent past	0.5606	0.4804	1.167	0.243232
Tense = remote past	1.7235	0.4357	3.956	7.62e-05***
Age = 46–61	−1.3271	0.6496	−2.043	0.041064*

Figure 4 illustrates how the final-/n/ in present tense verbs (the centre group in the figure) is significantly less frequently realised than in verbs of other tenses, and that speakers aged 30–45 (represented by circles) consistently realise final-/n/ more often than those aged 46–61 (triangles). This age effect, however, should be considered cautiously as there were only five speakers in the sample.

With regards to the role of genre and its effect on /n/-realisation, Figure 5 illustrates how final-/n/ is most often realised in formal contexts, such as when giving a *kawa* oration (triangle) or a narrative monologue (circle), and less often in more informal contexts, such as during a conversational sociolinguistic interview (square). The one exception to this pattern is Geoff Rowak (GGR), who realises final-/n/ consistently across all speech styles.

In summary, the results of these analyses show that both linguistic factors, such as tense, phonological context, and genre, and social factors, such as orator status and age, have significant effects on the frequency with which verb-final /n/ is realised in Ende.

4. Discussion

In this section, I will discuss the results as they pertain to the Ende social context, as well as in relation to Schokkin's results of variable /n/-realisation in Idi. The

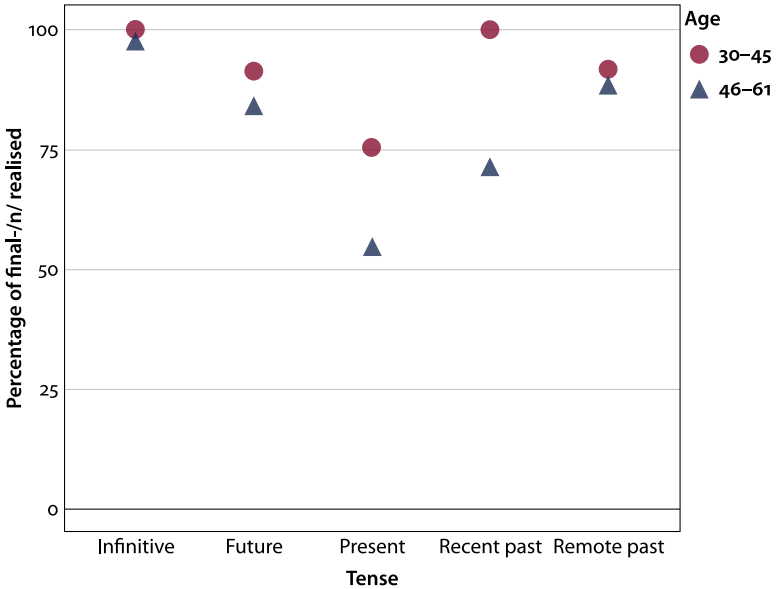

Figure 4. Percentage of tokens realised with final-/n/ by tense (future, infinitival, present, recent past, and remote past) and age (30–45, 46–61)

data indicate that variable /n/-realisation in Ende is sensitive to both linguistic and social factors and may be used stylistically in more formal speech events. Though the /n/-full variant is considered the standard or correct form, I see that in specific linguistic contexts, like the present tense, the /n/-full variant is rarely used.

One question that arises from these observations is whether this pattern is a change-in-progress and, if so, whether the language is getting more /n/-full or less /n/-full over time. An apparent-time analysis that looks at the use of the /n/-full variant across age cohorts reveals a U-shaped distributional curve, in which the youngest and oldest speakers are less /n/-full than the middle-aged speakers (Figure 6). This distribution does not reveal an obvious change-in-progress. Rather, this distribution is reminiscent of an age-grading effect, where middle-aged speakers use a more standard variety of speech compared to younger and older speakers (Wagner, 2012), a type of variation pattern that is stable over time.

This observation, that there is no clear evidence that variable /n/-realisation in Ende is a change in progress, aligns with the findings made by Schokkin for Idi (this issue). Schokkin also concludes that variable /n/-realisation in Idi is not a change in progress, even providing some diachronic evidence, an extraordinary find in this area of the world. The results of this study are, perhaps not surprisingly, comparable to Schokin's Idi findings in other ways too. Although the factor of age

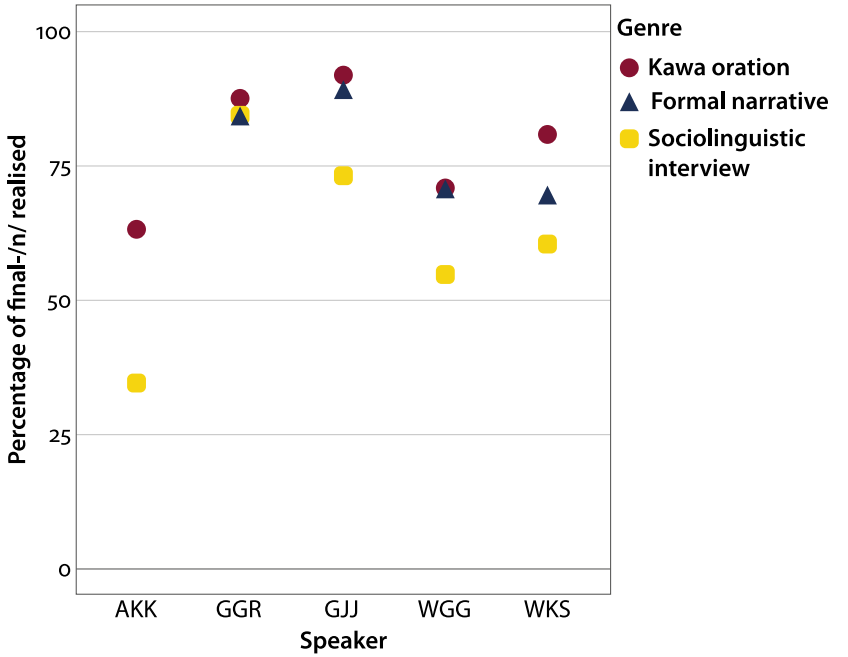

Figure 5. Percentage of tokens realised with final-/n/ by genre (formal narrative, kawa oration, sociolinguistic interview) and speaker (Aitru Kollwam, Geoff Rowak, Gidu Jerry, Wagiba Geser, and Warama Kurupel Suwede). I did not have an example of a formal narrative given by Aitru Kollwam to analyse in this study.

was not a significant social factor in the model of Ende /n/-realisation,[9] both the Ende and Idi patterns exhibit a trend in which the oldest speakers are significantly less /n/-full than the middle-aged speakers (Schokkin, 2018; this issue).

With regards to linguistic factors, Ende present tense verbs have similar rates of /n/-lessness as present tense verbs in Idi (Ende: 70%; Idi: 60%). In both languages, following consonants and intonation breaks correlate significantly with /n/-lessness when compared with following vowels and pauses.

The Ende results do differ from Schokkin's findings in Idi, in that the prestigious role of orator status in the Ende context is a significant correlate with the variable /n/-realisation. Orator status was not investigated by Schokkin as the social context in Dimsisi, where she did her data collection, was different than in Limol. The group of orators includes members of both sexes, all age groups, and

9. The factor of age did correlate significantly with the variation when the factor of orator status was not included in the model. However, after inclusion of orator status was included, age dropped out as a significant effect.

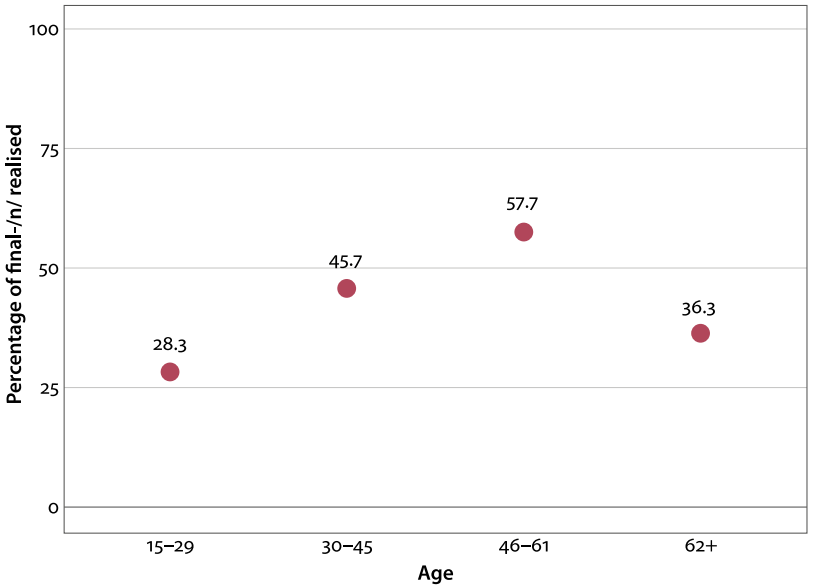

Figure 6. Percentage of /n/-realisation by age cohort ($N = 2165$)

all marital statuses. Although the category of orator is skewed male, middle-aged, and married, the inclusion of orator status in the model outperformed the inclusion of any individual categories of sex, age, marital status, and all interactions between them.

The role of orator status is not only significant for understanding the patterns of /n/-realisation in Ende. A recent analysis of variable retroflex affrication, whereby stops /ʈ/ and /ɖ/ are variably realised as /t͡ʂ/ and /d͡ʐ/, shows that orators are more likely to realise the variable as a stop than as an affricate compared with speakers who are not orators (Strong et al., 2020). Strong and colleagues go on to show that among the orators, older speakers and women tend to produce stops at higher rates than younger speakers and men. This pattern is consistent with an interpretation of the stop variants as prestige forms and suggests that their use in Ende is linked with the speaker's societal position: orators, who hold positions of high status in the community, use language to assert symbolic power. However, in my current study of /n/-realisation, I did not find that older or female orators were leading in the usage of the /n/-full form. It is interesting to note, though, that these patterns of variable retroflex affrication are also observed in Idi (Schokkin et al., 2021). If we find that these sociolinguistic variables are used consistently by specific subcommunities and in certain genres or registers, we may instead consider these patterns to be part of a larger regional style.

5. Conclusion

In summary, this paper detailed a study of variable verb-final /n/-realisation in Ende to assess whether the Ende variation pattern could be linked to linguistic and social factors, as has been observed in the related Idi language. I found that indeed, the two patterns are quite similar. Verb-final /n/ is more likely to be elided in the present tense and preceding a following consonant or utterance break. Moreover, social factors such as orator status correlate significantly with the /n/-variation, such that orators are the most likely to retain the prestige variant: verb-final /n/. Furthermore, this study supports Schokkin's conclusions for Idi that this pattern is an elision pattern, not addition. Not only do Ende speakers intuit that these verbs should be written with final-/n/, but the following segment patterns also support an /n/-elision analysis.

This study highlights the need to seek emically-derived categories for all social factors, including those that seem context-independent, like age. The role of social status or prestige in a given social context is often triangulated by looking at relevant proxies such as education, socioeconomic class, occupation, or race, and these are often useful for modelling sociolinguistic variation in Western communities. Though these exact proxies were not relevant in the Ende context, the significant role of orators as a marker of prestige and power within the community indicates that the sociolinguistic variation in Ende may be subject to similar social structures, though they may go by different names.

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Glossing abbreviations used within this article are the following

1	first person
3	third person
AGT	agentive
AUX	auxiliary
COP	copula
DU	dual
FUT	future
INT.DEM	intermediate demonstrative
NDU	nondual
NOM	nominative
P	patient
PL	plural
POSS	possessive
PRS	present
REC	recent past
REM	remote past
RT.EXT	root extension
S	subject
SG	singular

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Abstract (Indonesian)

Penelitian ini menunjukan penemuan analisis sosiofonetik dari kata-akhir /n/-peniadaan bunyi dalam ucapan di Bahasa Ende (Sungai Pahoturi; Papua). Analisis dari 73 pembicara mengungkapkan bahwa kata yang mewakili waktu, konteks fonologis, dan yang paling penting apakah sang pembicara adalah seorang pembicara kawakan, jenis orasi publik yang bergengsi, yang berkorelasi signifikan dengan penyimpanan-/n/. Penelitian kepada lima praktisi *kawa* membuktikan bahwa umur dan aliran juga mungkin bisa mempengaruhi ini. Penelitian ini dirancang untuk membandingkan kata-akhir /n/-peniadaan bunyi dalam ucapan yang terkait ldi dari analisis Schokkin (permasalahan ini). Memang, penemuan ini telah mendukung kesimpulan bahwa salah satu pola dari /n/-peniadaan bunyi dalam ucapan (sebagai lawan kepada /n/-tambahan) memperlihatkan banyak kesamaan dalam faktor pengkondisian. Menganalisis variasi sosiolinguistik yang baru di daerah ini mempersembahkan beberapa manfaat dan tantangan. Penelitian ini membahas bagaimana kategori yang terkait dengan umur, suku, dan status orator yang diturunkan secara teknis bisa menyimpang dari karakterisasi prestise di masyarakat yang kebaratan-baratan dan urban tetapi lebih cocok ke konteks sosial New Guinea.

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