

(h) in Marshallese English

Isabelle Buchstaller

Sociolinguistics Lab, Universität Duisburg-Essen

This paper explores the sociolinguistic patterning of glottal choices in the English spoken in the Republic of the Marshall Islands (RMI), a variety that variationist research has thus far eschewed. The analysis suggests that the schooling background of the speaker is the most crucial determinant for both /h/-dropping and /h/-insertion. These findings are not surprising given the dramatic social inequalities regarding access to educational opportunities that characterise the RMI. The locally-specific contact situation, in conjunction with the constraints on /h/-insertion, suggest that the English spoken in the Marshall Islands is typologically distinct from the Southern British dialect root described for other parts of the Pacific by Schreier (2019).

Keywords: Marshallese, English, h-dropping, h-insertion, h-epenthesis, education

1. Introduction

This paper explores choices in the realisation of (h) on *Mājro* (Majuro), the capital atoll of the Republic of the Marshall Islands (henceforth RMI). The Marshall Islands are officially bilingual with Marshallese and English co-existing as the two official languages. Marshallese, a ‘nuclear Micronesian’ language (Bender, 1971; Matthews, 1949–50), is relatively well described, including studies on aspects of its syntax (Willson, 2002, 2008), morphology (Pagotto, 1987; Rudiak-Gould, 2004), phonetics (Rudiak-Gould, 2004), phonology (Bender, 1968, 1969; Choi, 1992; Hale, 2000) and morphophonemics (Bender, 1973). Since this research has unanimously revealed that Marshallese has no glottal phonemes and lacks fricatives, the present article explores how speakers of Marshallese realise the glottal fricative /h/ when speaking English.

Apart from two descriptive works on the results of language transfer (Buchstaller & Willson, 2018, in press), little is known about the local variety of English and, to my knowledge, no variationist analysis has ever been conducted

on Marshallese English. This dearth of linguistic attention is important since the language contact situation in the Marshall Islands differs somewhat from the better-described scenarios that have given rise to contact Englishes in the Pacific Basin (including Fiji, Kiribati, Kosrae and Samoa). Together with two out of the other four island groups in Micronesia (the Commonwealth of the Northern Mariana Islands and the Federated States of Micronesia) and contrary to many other Pacific communities, the Marshall Islands orient to the United States, rather than to varieties with British phylogeny as a linguistic role model. This is of great relevance to the present study since, as Wells (1982, p. 255) confirms, 'h-dropping is unknown' in the United States (see also Grund, 2017; Jahr, 2011). Regarding hypercorrect h-insertion, little to nothing is known for the Northern American context outside of Newfoundland, which might be indicative of its absence in varieties of US English (see Janda & Auger, 1992).

Furthermore, while all Pacific island states are isolated from each other and from the nearest landmass by vast swathes of water, 'the socio-political and economic development of the RMI has resulted in ... [especially] restricted opportunities for face-to-face contact with native speakers of English or indeed in any need to use English at all', even by Pacific standards (Buchstaller & Willson, 2018, p. 361). To date, the outer islands remain entirely cut off from international trading and shipping routes. With no tourism to speak of, only two areas – the urban center of the capital atoll *Mājro* (Majuro) and the military base *Epjā* (Ebeye) – have seen some contact with English-speakers.¹ What is more, the RMI have a fraught relationship with the United States of America, mainly due to the atomic testing on Marshallese territory, the displacement and contamination of several atoll populations and the reluctance of the United States to offer adequate compensation for the human, environmental and medical calamities that ensued from this legacy (Barker, 2012; Johnson, 2013). Local attitudes towards the United States are therefore complex, and must be seen in the context of a number of concerns regarding sovereignty, self-determination and identity construction (Kupferman, 2013; Low, Penland, & Heine, 2005; Rehg, 2004).

Overall, thus, the situation in the RMI is rather different to the historical transplantation scenarios described in Schreier (2019, p. 48), who argues that the /h/-insertion recorded in many English-speaking communities (such as the

1. Buchstaller and Willson (2018, in press) also note the comparative paucity of other adstrate influence in the RMI: The Marshall Islands have never experienced large-scale immigration from the Philippines (less than 1% of the population in the RMI are Philippines-born, EPPSO 2012) and Japanese influence is very scant. And while the capital atoll boasts a sizeable Chinese community, which has a stronghold on the taxi business and the many shops that line Majuro's main street, their actual numbers are not adequately accounted for in the census.

Caribbean, Newfoundland, and also some Pacific varieties such as Kosrae) is a result of British inheritance with ‘south-eastern English dialects [constituting] particularly important donor varieties’. Indeed, as we will see below, the occurrence of /h/-dropping and /h/-insertion in Marshallese English as well as the constraints which govern their realisation make the linguistic situation in the RMI unlike the British ‘dialect root’ scenario (Schreier, 2019, p.49) but more akin to the language learning situations described in the acquisition and cognitive science literature (Janda & Auger, 1992; John & Cardoso, 2008; Mah, Goad, & Steinhauer, 2016).

The aim of this article is to explore the realisation of /h/ amongst speakers of Marshallese, who – due to a variety of social, economic and geo-political reasons – find themselves in local contact situations with speakers of US English, a variety that has phonetic /h/ and for which /h/-dropping and /h/-insertion have not been reported. Research on French learners of English has stressed the impact of language proficiency and the type of learning environment (Janda & Auger, 1992) on the realisation of the glottal aspirant. As we will see below, in the RMI, where the vast achievement gap between private and public schools has recently triggered a change in language policy in the public education system (Low et al., 2005; Ministry of Education, 2015), the role of school choice is a crucial determinant for the realisation of /h/. The present analysis will hone in on the effect of speakers’ educational opportunities within the context of the RMI school system.

By describing the social and linguistic factors that constrain the use of /h/ in fundamentally regular ways, this article aims to serve two interrelated objectives: (i) to contribute to the World Englishes literature by describing a complementary scenario to the one proposed in Schreier (2019) and (ii) to inform educational policy by providing an account of a local transfer effect that is fundamentally contingent on the socially-niched learning opportunities that characterise the Marshallese educational system.

The article is structured as follows: After a brief section on the history of language contact in the Republic of the Marshall Islands and the policy governing language learning in the educational system, I will outline my fieldwork methods and the data that form the basis of the analysis. I will then move on to explore the social and linguistic determinants that condition /h/-dropping as well as /h/-insertion in the context of the RMI.

2. Language contact in the Republic of the Marshall Islands

The Republic of the Marshall Islands is officially bilingual. Marshallese continues to enjoy vibrant use, being the native language of 99% of the approximately

44000 citizens living in the Republic of the Marshall Islands (EPPSO, 2012) and used extensively amongst the roughly 10000 expats who live in various US states (Johnson, 2015) and in Nauru. But while English dominates in official domains, to date, very little is known about the local varieties that have evolved out of contact with Marshallese. Only recently has linguistic research began to describe the varieties that have developed in the local contact situation (Buchstaller & Willson, 2018, in press). This dearth of detailed knowledge makes it difficult to formulate expectations regarding the realisation of /h/ by Marshallese speakers of English.

While 79% of all Marshallese polled answered the census question ‘I can read or write a simple sentence in this language [English]’ with ‘yes’, it is well known that ‘Marshallese students struggle with basic literacy [in English]. The Pacific Islands Literacy and Numeracy Assessment (PILNA) reports that fifth and seventh graders in [the] Marshall Islands had the lowest test results [for English proficiency] among 13 Pacific countries’ (Hosia, 2016a). Table 1 illustrates the results of the 2016 Marshall Islands Standard Achievement Test (MISAT). On the basis of these scores, it is not entirely surprisingly that only about 2% of Marshallese applicants meet the minimum criteria of the English language test as part of the selection process for recruitment into the US military (Robert Early, personal communication 2015). Table 2, which illustrates the published results of a math and literacy test for a scholarship, supports the contention that the RMI literacy achievement is low compared to the rest of the Micronesian region (see also Peacock, 1985; Pine & Savage, 1989).

Table 1. English proficiency in the 2016 MISAT (Marshall Islands Journal, 2016)

6th grade	19%
10th grade	25%
12th grade	32%

Table 2. Passing rates for Xavier High School scholarship (Hosia, 2016b)

Kosrae:	31%
Yap:	26%
Palau:	25%
Pohnpei:	13%
RMI:	8%
Chuuk	< 2%

It is results such as these which have driven better-off families to register their offspring in private schools, where the lion's share of teaching staff are native speakers of English (in contrast to public schools, which employ mainly Marshallese or other Pacific Islanders). As government statistics show, some of the 13 RMI private schools perform very well in standardized tests (such as the one administered by the Western Association of Schools and Colleges). Table 3 compares the highest performing private school, the Co-Op, with a randomly chosen public school 30 km away. It is this discrepancy of testing results which continues to fuel the exodus of better-off students to private schools.

Table 3. English proficiency for a randomly selected Majuro public high school as well as the most highly achieving private school, the Co-Op (data: Ministry of Education)

	Ajeltake school	Co-Op school
Grade 3 English	16	71
Grade 6 English	8	83
Grade 8 English Reading	53	92
Grade 8 English Writing	38	98

On the basis of findings such as these and motivated by bilingualism and teaching policy research (Rickford, 2001; Skutnabb-Kangas, 2014; the chapters in Reyhner, Martin, Lockard, & Gilbert, 2013 *inter alia*), the minister of education recently proposed a language policy reform which aims at the widespread promotion of societal bilingualism and improved literacy in English and Marshallese. While the success of this new language policy for the public school sector is not yet quantifiable, the present article explores the impact of speakers' educational background on their realisation of /h/ in 2015, the year in which the new strategy was implemented. Given that research on the acquisition of English /h/ has found that learners' exposure to native speaker input and their specific learning situation constrain target-like production (Janda & Auger, 1992), my aim is to assess the role of schooling background in the context of the Marshall Islands. Research such as the present article thus aims to shine some light on the systemic ways in which social structure – in particular access to different types of schooling – impacts on the realities of language use in the RMI, hoping to provide guidance to teachers and educators.

3. Fieldwork strategy

Many Marshallese are highly reluctant to speak English with *ri-pälle* 'Caucasian foreigners', a fact that is amply commented on in the RMI expat community (J. Niedenthal, personal communication, July 2005; R. Early, personal communication, August 2005). I encountered this reticence in my own interactions with all but the most well-travelled Marshallese Islanders and especially with public school educated speakers who have not had much contact with Western foreigners. My fieldwork strategy therefore aimed to integrate myself into different sectors of Marshallese society, ranging from privately educated, native-like speakers of English to those with much lower proficiency and confidence in the language.²

I chose three interactional settings as entry points into different communities: The two local universities, the Marshall Islands campus of the University of the South Pacific (USP), which hosted me during my stay, and the College of the Marshall Islands (CMI), where my partner was based, gave me access to teachers receiving in-session training, fellow scientists as well as administrators. The weaving house situated in the courtyard of USP provided me with the opportunity to hang out with weavers and local artists on a roughly twice-weekly basis as I was trained to create traditional Jaki-ed mats. The Wellness Center kitchen team, finally, recruited me to cook and bake with them. As I was roped increasingly into their day-to-day activities, including food preparation but also parties and outings, I was able to record the kitchen team, including the local baker, the chefs, and kitchen aides. I also recruited a number of informants during the Wellness Center health education intervention programme (mainly cookery lessons and agriculture demonstrations held by the team in the adjoining restaurant and garden, <http://www.canvasback.org/wellness>). The corpus also includes pupils from the private Co-Op school and the public Marshall Islands High School, who were recruited via the principals of these two schools.³

The research reported here is based on three months' ethnographic fieldwork. Apart from interviews in schools and with highly educated speakers, recordings were only undertaken when social relations had been formed and trust had been established. Overall, the corpus amounts to a sample of 56 speakers that is able to capture the main social divisions of the Marshallese society. In this paper, I

2. I am grateful to Dr. Irene Taafaka, Dr. Seraphim Alvanides, Dr. Karl Fellenius, and the staff at the wellness center (esp. Christine and Tanner Smith) for helping me create and foster connections with the Marshallese community.

3. I would like to thank the high school principals Junior Paul and Chelsea Armstrong for their help and support in recruiting these students and for allowing me conduct the recordings on school premises.

report on a subset of 19 speakers, stratified by three age groups, speaker gender and educational background. Given that chain-migration has resulted in vast and tightly-knit Marshallese expat communities in the US (the biggest ones being in Hawaii and Arkansas, see Babic, 2015; Zak, 2015), I did not code for individual speaker's time spent abroad. Rather, on the basis of the educational divide in terms of language proficiency discussed above, I formalised the amount and type of contact with (native) English speakers and confidence with the use of English via the individual's educational background – private vs. public schooling. I also noted speakers' social standing (which I coded for impressionistically based on the clan lineage of the speaker and the resources their family commands).⁴

4. The realisation of (h) and coding procedure

The systemic differences between English and Marshallese have been shown to have implications for the consonantal inventory of the local contact variety of English (Buchstaller & Willson, 2018, in press). Crucially for the present investigation, the Marshallese sound inventory lacks fricative and glottal phonemes (Bender, 1971, p.450; Choi, 1992; Willson, 2003). The acquisition of the English glottal fricative /h/ is a particularly difficult task due to its low auditory salience (Mah, Goad, & Steinhauer, 2016).⁵ Not surprisingly, thus, Marshallese people

4. Marshallese social structure relies on a conical clan structure and the traditional hierarchical order is based on land-use rights. All members of a clan owe allegiance to a chief (*Iroij*), who oversees the clan heads (*Alap*), who themselves are supported by laborers (*Rijerbal*). Rank is traced through females: 'A woman outranks her daughter, an elder sister outranks a younger sister, the female descendants of an elder sister outrank the female descendants of a younger sister, and the daughters of an elder sister outrank the mother's younger sister' (Hage 2000, p.298). The matrilinear *jowi* ('clan') and *bwij* ('lineage') are thus important structuring factors in Marshallese society, with family lineages spanning different islands/atolls. Most older speakers can sketch in great detail the lineage of their clan whereas this knowledge tends to get lost amongst younger speakers. Even so, the vast majority of Marshallese orient to the obligations – regarding norms of social interactions and politeness phenomena – governed by their positionality in the *jowi* or *bwij* (see Buchstaller & Willson, in press).

5. Mah et al. (2016, p.2) argue that 'the absence of supralaryngeal narrowing in the production of [h] results in particularly low intensity fricative noise ... [so that [h] is] more adequately described as the voiceless counterpart of an adjacent vowel... with the results that [h] is ... difficult to detect in the speech stream.' Exploring French learner's use of /h/ using advanced brain imaging technology, the authors argue that it is not this perceptual weakness which is at the root of these learners' difficulty but rather the construction of 'an appropriate phonological representation for [h] in the interlanguage grammar' (ibid:1). This hypothesis, while fascinating in its theoretical implications, cannot be tested in the present paper. Suffice it to say, here, that its

who speak English as part of a multilingual repertoire or as an additional language display complex patterns around /h/. The sound can be unrealised as in (1a), realised as a glottal fricative (as in 1b) or as a glottal plosive [ʔ] (in 1c, see also Kamiyama et al., 2011; Wells, 1982). Similarly to word-initial contexts, speakers of Marshallese English also variably produce /h/ in medial position in polysyllabic lexemes (as in 1d).

- (1) a. [ɪgh ('high')
 b. [h]ouse
 c. [ʔ]undred
 d. liveli[ʒood ('livelihood')

Speakers' awareness of this systemic difference between Marshallese and English sometimes results in spelling pronunciations (as in 2a) and in qualitatively hypercorrect (unetymological) forms that are not supported by the spelling (see Janda & Auger, 1992). /h/-insertion, which is defined as 'the insertion of [h] at the beginning of vowel-initial words' (John & Cardoso, 2008, p.77), has been reported for contact varieties with a history of British migration (Schreier, 2019; Schneider, 2004) as well as for learner varieties of English (Janda & Auger, 1992 *inter alia*). In Marshallese English, /h/-insertion occurs both in open class (2b) as well as in closed class (2c) lexemes, where speakers variably produce glottal friction in the relatively long onset of vowel initial words. In line with the allophonic alternation for /h/ discussed above, the inserted segment can also be a glottal stop (as in 2d and 2e). As (2f) shows, epenthetic /h/ sometimes even occurs with western proper names.

- (2) a. [ha.wəʔs] ('hours')
 b. like a [h]island wear
 c. who he [h]is
 d. [ʔ]our [ʔ]office
 e. fourteen [ʔ]islands
 f. his name is [h]eldon [h]eldon John (Elton John)

Expanding on Schreier's (2006) methodology, data on the realisation of /h/ were retrieved in dropping and insertion environments (detailed in Table 4). For potential dropping environments, I considered words that are /h/-initial in formal prescriptive US varieties, extracting both closed and open class items. I also considered words that contain /h/ in medial stressed position in polysyllabic lexemes. For potential insertion environments, I extracted vowel-initial closed class

acoustic properties make /h/ difficult to acquire (see Janda & Auger, 1992; John & Cardoso, 2008; Kamiyama, Kühnert, & Vassière, 2011).

items as well as open class items, differentiating between environments with primary stress vs. unstressed environments. The overall aim was to extract 25 tokens in each of these contexts per speaker but the overall figure of tokens included in the analysis is much lower. Since the quality of the data did not allow for acoustic analysis, all tokens were coded impressionistically for the three realisations (zero, glottal fricative and glottal stop).⁶

Table 4. Extraction contexts for /h/-drop and insertion

Dropping environments	Insertion environments
closed class (<i>his</i>)	closed class (<i>am</i>)
open class initial (<i>house</i>)	open class stressed (<i>island</i>)
medial stressed in polysyllabic lexemes (<i>behaviour</i>) ¹	open class unstressed (<i>obligation</i>)
N=597	N=1048

1 Since statistical analysis has revealed that the realisation of /h/ in initial and medial lexical words displays similar patterns, the N=35 tokens of polysyllabic lexemes will be collapsed with the other open class contexts in the analysis below.

All tokens were hand coded in Praat, time stamped and were extracted into Excel via a Praat script. Following the literature on h-dropping (Bell & Holmes, 1992; Leach, 2018, in press, see also Clarke, 2010) and the acquisition of /h/ (John & Cardoso, 2008; Janda & Auger, 1992), the following predictors were operationalised in the analysis reported here (Table 5):

6. From an articulatory point of view, Ladefoged (1990, p.24) points out that ‘that most forms of [h] have very little friction at the glottis. The vocal cords are apart and any turbulent air-flow that there might be [and that listeners might react to] is due to what Pike (1943) calls “cavity friction” rather than local friction at a particular point’. Thus, while the abstract articulatory target of the glottal stop has been assumed to be full and sustained vocal fold adduction, its actual realisation is extremely variable, often relying on a form of laryngealized voicing (Dilley, Shattuck-Hufnagel, & Ostendorf, 1996; Docherty & Foulkes, 1999; Pierrehumbert & Talkin, 1992). There is much discussion about the auditory cues that allows speakers to differentiate glottal realisations, much of which can be summarized in Esling, Zeroual, and Crevier-Buchman’s (2007, p.585) statement that ‘a “glottal stop” cannot be uniquely glottal but is at least glottoventricular’, which means that ‘the ventricular folds (structures superior to the vocal folds in the larynx) are always involved in glottal stop articulation’ (Garellek, 2013, pp.1–2). On the bases of these findings, in the research reported here, [h] refers to phenomena that entailed clear auditory frication, whereas tokens were categorized as glottal stop when I perceived a conspicuous glottal burst (which was sometimes accompanied by breathy or voiced glottal noise, see Leach, 2018).

Table 5. Linguistic and social predictors for realisation of /h/

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- the type of drop/type of insertion (lexical word initial vs. lexical word medial etc. see Table 4),
 - the grammatical category of the word (instances of *have* vs. pronouns, prepositions, etc.),
 - the preceding phonetic context,
 - word stress (coded as a binary category),
 - the number of syllables of the word containing (h),
 - the topic of the conversation,
 - the gender of the speaker,
 - the age of the speaker,
 - the educational background (private or public) of the speaker
 - the social standing of the speaker.
-

The data were analysed using descriptive statistics (Chi-square) and inferential statistics (regression) in the software *r* (R core team). The latter was conducted as a bottom up procedure, whereby I ran a baseline model and tested the effects of individual predictors via the function *add1* (Chambers, 1992). I then submitted the data to mixed effects logistic regression analyses using the package *lme4* (Bates, Maechler, Bolker, & Walker, 2015), gradually adding predictors and monitoring the goodness of fit. Following Gries (2013), I used the *ANOVA* function in the R package *car* (Fox & Weisberg, 2011) to identify significant improvements in the quality of the regression model. Due to the vastly different amounts of data I managed to obtain from different informants, speaker was operationalised as a random factor.

5. H-dropping in Marshallese English

If we define /h/-dropping as the perceptual absence of any kind of glottal gesture (but see below), the overall rate is 41%, which is much higher than the rates reported for other varieties of English (Lynch, 2017; Schreier, 2019; see Bell & Holmes, 1992). Notably, as Table 6 illustrates, privately schooled speakers retain the lion's share of their /h/ (with 84%), whereas speakers who attend(ed) public schools only produce the glottal fricative 43% of the time, realise it as a glottal stop 10% of the time and do not realise any glottal gesture at all in 47% of all instances. This finding, which supports the argument regarding educational inequality in Marshallese society, suggests that the social stratification reported elsewhere for /h/-dropping (Bell & Holmes, 1992; Grund, 2017; Häcker, 2004; Jespersen, 1949) also holds in the RMI.

Table 6. Realisation of (h) in % overall*

	H-retention		Glottal stop		H-drop	
	N	%	N	%	N	%
Private	200	84	3	1	36	15
Public	152	43	36	10	169	47

$X^2(2) = 101,37, p < 0.0001$

* The three tokens of /h/ realised as [w] will be ignored in the present analysis.

Unsurprisingly, /h/-dropping is much more prevalent in grammatical lexemes than in lexical ones (47% vs. 25% overall, see Clarke, 2010; Leach, 2018 *inter alia*). Crucially, as Tables 7 and 8 reveal, there is an interaction effect between the type of word and the educational background of the speaker in the sense that the difference between privately vs. public school educated speakers is much more pronounced for the open class lexemes, where privately educated speakers produce 90% all possible tokens of glottal fricative [h]. The public school educated speakers, on the other hand, realise /h/ as a fricative 46% and as a glottal stop in 17% of all cases (Table 7). In the latter case, the glottal gesture is present not as period friction but rather as the perceptual impression of a burst.

It is thus a question of ideology how we report the realisation of /h/ by these public school educated speakers. If we apply an Anglo-centric definition of /h/ as glottal fricative [h], the public school educated speakers produce the L1 target in less than half of all instances. A definition which takes into account localized linguistic choices,⁷ on the other hand, would come to the conclusion that a glottal gesture is present 63% of the time amongst this speaker group. For both operationalisations of /h/, the difference between privately and publicly educated speakers is significant at the 0.001 level (with $\chi^2 = 67,43$ and 35,69). The following analysis will rely on an anglocentric definition of /h/ to allow for comparability between the patterns that characterise the RMI and other localities reported in the literature.

Table 7. Realisation of (h) in % open class words

	H-retention		Glottal stop		H-drop	
	N	%	N	%	N	%
private	123	90	2	1	11	8
public	79	46	29	17	65	38

$X^2(2) = 67, p < 0.0001$

7. Note that [h] – [ʔ] is not contrastive in any variety English that I am aware of.

Table 8. Realisation of (h) in % closed class words

	H-retention		Glottal stop		H-drop	
	N	%	N	%	N	%
private	58	70	1	1	24	29
public	68	40	6	4	95	56

$$X^2(2) = 19.67, p < 0.0001$$

For the regression analyses, the dependent variable was thus coded as the realisation of /h/ as a fricative vs. else (which included the glottal stop and zero) and [h] was set as the response level. I first ran a base model with speaker as a random effect, followed by an add1 command, which considers the effect of all individual predictors considered separately. This analysis – the results of which are illustrated in Appendix A – reveals that the speaker's educational status has the highest likelihood ratio test score and the lowest AIC (both measures of goodness of fit) of all predictors tested. Obviously, we would expect a certain amount of collinearity between constraints such as socio-economic status and type of schooling; also interactions need to be tested for. I thus submitted the data to a number of mixed effects logistic regression analyses which allowed me to determine the best explanatory model for speakers' realisation of /h/. The model with the best fit is shown in Table 9.⁸

The level of education is significant as a positive main effect: Public school educated speakers favour /h/-dropping. But educational background also participates in an interaction with the type of lexeme. Figure 1, which plots the predicted effects for this interaction, reflects the difference in the realisation of /h/ by speakers of different educational backgrounds according to word type (lexical vs. grammatical). The positive estimate means that public school education increases the chance of /h/-dropping, especially in lexical words. The model reported here thus fully supports the contention voiced above that school type heavily affects the realisation of /h/: Not only do privately educated speakers produce lower rates of h-drop, they do so especially in open class items.

Also the internal factors tested in the model are in line with previous findings reported in the literature: In terms of world class, pronouns, which have been reported to be particularly frequent 'targets for /h/-dropping' (Leach, 2018, p. 155) and forms of *have* favour the reduced form (see also Janda & Auger, 1992;

8. Contrary to Lynch's findings in Kosrae (2017), speaker age and gender have no bearing on their propensity to realise their /h/. Also the topic of the conversation, word stress, the number of syllables of the word, and the speaker's relative status in Marshallese society as determined by clan membership and family lineage are not chosen as significant predictors.

Table 9. Results of a mixed effects logistic regression analysis on /h/-dropping in ME
N obs. 572 AIC 631 r^2 (conditional) = 0.41

	Estimate	Std. Error	z value	p-value
(Intercept)	−1.46888	0.59275	−2.478	0.013 *
Education:				
private	[reference level]			
public	1.24371	0.43277	2.874	0.004 **
Word class:				
Form of <i>have</i>	[reference level]			
closed	−0.45444	0.41139	−1.105	0.269
open	−1.29990	0.51939	−2.503	0.012 *
pronoun	0.34321	0.38108	0.901	0.367
Preceding:¹				
voiceless obstruent	[reference level]			
voiced obstruent	−0.6485	0.3639	−1.782	0.075
lateral	−0.9220	0.4161	−2.216	0.027 *
vowel	−0.6339	0.2837	−2.234	0.025 *
nasal	0.3331	0.3712	0.897	0.369
Interaction:				
public x lexical	1.46691	0.48290	3.038	0.002 **

1. Pauses had to be excluded from the analysis.

John & Cardoso, 2008). Regarding the preceding environment, the results for ME mirror some aspects of Bell and Holmes’ (1992) and Leach’s (2018) findings, in particular the inhibiting effect of vowels. However the Marshallese English speakers also demonstrate some idiosyncratic results, including the disfavouring effect of voiced obstruents and of vowel-like laterals (Cutting, 1974).⁹

Overall, the analysis of the ME data reveals that the most important conditioning factor for the realisation of /h/ amongst speakers of Marshallese English is the type of schooling (private vs public), especially when interacting with the type of word containing /h/. This finding is entirely diagnostic of the faultlines of

9. On the basis of a dichotic ear monitoring task, Cutting (1974) concluded that ‘syllable-initial liquids were perceived more like stops while syllable-final liquids were perceived like vowels’ (see McGovern & Strane, 1977, p.163).

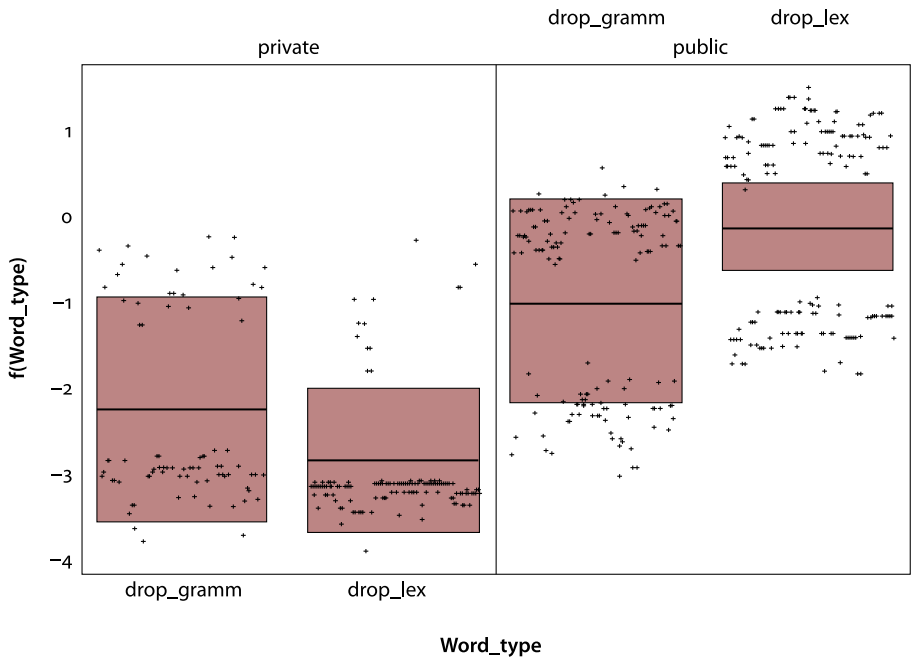


Figure 1. Interactive effect of education and type of word on the probability of h-dropping in ME

language learning and language use in the RMI. Crucially, school type will also play an important role when we consider /h/-insertion.

6. Glottal insertion in Marshallese English

This section investigates the insertion patterns produced by Marshallese speakers of English, exploring first the factors which condition glottal insertion overall (hence the insertion of any glottal gesture) before investigating the type of insertion (i.e., the insertion of segments that are perceived as a glottal stop vs. a glottal fricative).

The overall rate of glottal insertion for the ME sample is 30%, and as such much higher than comparative studies by Schreier (2019) and Janda and Auger (1992), who reported 7% and 2% respectively (but note the different extraction and collection methods which make direct comparisons problematic). As Table 10 reveals, school type alone is not a significant main predictor for glottal insertion: Private and publicly educated speakers insert a glottal gesture into about 30% of all vowel-initial lexemes.

Table 10. Glottal insertion (in %) overall

	No insertion		Glottal insertion	
	N	%	N	%
private	333	71	137	29
public	402	70	176	30

$X^2(1) = 0.15, p = 0.697, \text{ n.s.}$

For the regression analysis, the dependent variable was initially coded as any kind of insertion of a glottal gesture vs. no insertion and the response level was set at no insertion. An add1 command (see Appendix B) suggests that – if tested by themselves – stress, type of word (lexical vs grammatical) word class, and topic are significant predictors for glottal-insertion. A mixed effects regression analysis (see Table 11) is more parsimonious, reducing these predictors to just one main effect: Stress. In the English spoken in the RMI, syllables that receive stress tend to favour /h/-insertion (see Sivertsen, 1960).

Table 11. Results of a mixed effects logistic regression analysis on /h/-insertion in ME

N obs. 1048 AIC 1232 r^2 (conditional) = 0.1				
	Estimate	Std. Error	z value	Pr(> z)
(Intercept)	−1.4043	0.2053	−6.840	0.0001 ***
Stress:				
No	[reference level]			
Yes	1.2870	0.2226	5.782	0.0001 ***
Interaction:				
Stress (Yes) x public	−0.7131	0.2905	−2.455	0.0141 *

As illustrated by Figure 2, stress interacts with the type of education. Whereas both speaker groups insert more /h/ in stressed environments, this effect is stronger amongst the privately educated speakers, who produce higher rates of /h/-epenthesis in stressed syllables than their than public school educated counterparts.¹⁰

10. Note the bimodal distribution in Figure 2, which I assume is part of the reason why the predictive power of this model is so low ($r = 0.1$). This suggests that other factors play a role in the probabilistic patterns of /h/-insertion. As we will see below, the type of glottal gesture inserted is one such factor.

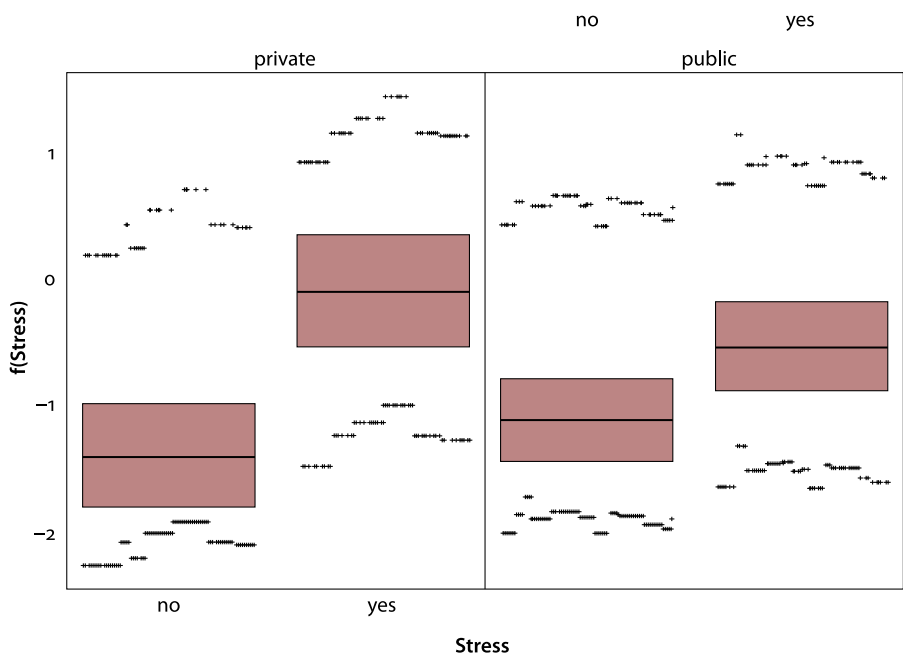


Figure 2. Interactive effect of stress and education on the probability of h-insertion in ME

The finding that stress interacts with the educational level of the speaker is supported by the fact that of the few cases of emphatic stress in the data ($N=8$), 7 receive insertion and almost all by privately educated speakers (note Sivertsen's, 1960 contention that in Cockney [h] insertion is to some speakers a marker of emphasis). The best illustration of this effect comes from the Pacific Educator conference which took place in Majuro in summer 2015. During the official conference dinner, as delegates were teaching each other their national dances, a member of the RMI organisational team came on stage and vividly described the way in which the hands were to be moved during a particular musical segment. Example (3a), taken from this short instructional sequence, illustrates that vowel initial words produced with emphatic stress contain ample /h/-insertion. Examples (3b–d), taken from my recordings, further exhibit instances of emphatic stress co-occurring with /h/-insertion.

- (3) a. you have to go '[h]up and down '[h]up and down.
 b. The German '[h]asked my grandfather
 c. Who he '[h]is
 d. ... '[?]overloaded with just '[?]all the stories...

The effect of word stress – and indeed of emphatic stress even though numbers are too low to include this environment into the regression analysis – supports the hypothesis that glottal insertion in ME can be seen as a type of qualitative hyper-correction (see also Janda & Auger, 1992; Mugglestone, 2003, p.111): Speakers who are highly aware of prestigious forms because they are privately schooled and thus have more access to native speaker models¹¹ realise more hypercorrect forms in stressed syllables. They do even more so when producing emphatic stress.

Curiously, perhaps, the previous phonetic environment was not selected as a determinant for glottal-insertion in the regression model (tested as a main factor and in interaction with stress or education). This suggests that, contrary to other contact varieties of English (see i.e., Lynch, 2017 for Kosrae), Marshallese speakers of English do not systematically use glottal insertion to avoid hiatus. The following paragraphs briefly explore this finding in more detail. Since the underlying representation of lexical forms in Marshallese English is – as of yet – unresolved, I decided to use the alloform of the article as a diagnostic for the status of /h/-insertion as a hiatus avoidance strategy. More specifically, when the definite article takes on the form *th[i]*, I will assume that the following constituent (usually a noun or an adjective) is treated as vowel-initial, which might make hiatus resolution relevant. The selection of the allomorph *th[ə]*, on the other hand, suggests that the following constituent is treated as consonant-initial and the expectation – at least for those varieties of English that avoid hiatus – would be that hiatus resolution is not relevant.

As Table 12 reveals, speakers of ME produce less glottal insertion when the determiner takes the form *th[i]* (20%), which would suggest that the following constituent is vowel-initial and might thus lead us to expect hiatus avoidance strategies. Conversely, we find more insertion (48%) when the lexical head is treated as a consonant-initial form (given the choice of determiner *th[ə]*). This finding suggests that speakers of ME are not relying on glottal insertion in order to avoid hiatus in determiner-noun and determiner-adjective sequences.

While low Ns call for caution in interpreting the results for the indefinite article, Table 12 shows that the same pattern – less insertion after an alloform which suggests that the following lexical head is vowel initial – also pertains for this environment (with 27% vs. 33%). Given the robustness of the findings presented here, both in terms of the non-significant effect of the preceding environment as well as the way in which ME speakers treat words following alloforms of the deter-

11. Teachers in private schools tend to be Americans or other native speakers of English. The educational staff in public schools, on the other hand, are largely Marshallese or other Pacific Islanders (the latter of whom tend to have variable competence in English but usually do not to speak much Marshallese).

miner, I would like to suggest that hiatus avoidance is not a determining factor for glottal insertion in Marshallese English. Note in this respect that the phonological literature suggests that in ‘some languages, vowel hiatus is permitted quite freely’ (Casali, 2011, p. 1434; see also Balogné Bérces, 2006; Erdal, 2015).¹²

Table 12. Glottal insertion in ME with allomorphs of the definite and indefinite article

Insertion ME speakers					
Definite article	Expectation	Not	[h]	[ʔ]	
Lexeme treated as V-initial: Th[i] apple	Hiatus resolution relevant	80%	19%	1%	N=75
Lexeme treated as C-initial: Th[e/ə] apple	Hiatus resolution not relevant	51%	34%	14%	N=35
Indefinite article					
Lexeme treated as V-initial: An apple	Hiatus resolution relevant	73%	20%	7%	N=15
Lexeme treated as C-initial: A apple	Hiatus resolution not relevant	67%	0%	33%	N=3

Finally, let us consider the constraints that condition the type of glottal gesture inserted. Table 13 reveals that whereas privately educated speakers tend to favour glottal stop insertion, publicly educated speakers insert more glottal fricatives. This difference is highly significant.

Table 13. Type of glottal insertion in ME (in %) overall

	No insertion		H-insertion		Glottal stop insertion	
	N	%	N	%	N	%
private	333	71	6	1	131	28
public	402	70	59	10	117	20

$X^2(2) = 39.7, p < 0.0001$

12. The literature reports that some varieties of English which do not practice article allomorphy use /h/ epenthesis in order to avoid hiatus. Champion (1976, p. 27), in particular, comments that for Lincolnshire ‘it is common practice to employ “a” and “the” almost always, even when the next word begins with a vowel, but *a apple, a egg, a iron, the orange* and *the umbrella* do not flow readily off the tongue. The difficulty is overcome by using h to improve the fluency, so we say *a happle, a hiron, the horange* and *the humbrella*. This function of the aspirate is entirely divorced from Standard English usage’. The findings reported here suggest that speakers of Marshallese English do not resort to /h/-insertion to avoid hiatus.

Testing for the factors that underpin the competition between the two glottal realisations further supports the finding that the type of education is a significant determinant of glottal insertion. For this analysis, the dependent variable was coded as [ʔ] vs. [h] and the response level was set as the glottal stop. The results in Table 14 mirror those in Table 13: public school speakers are relatively more prone to realise [h], whereas privately educated speakers are more prone to realise [ʔ]. No other factors reached the level of significance. Hence, while the social faultlines of school choice and educational history do not have a main determining effect on the overall amount (Table 11) of glottal insertion, they have a clear impact on the realisation of epenthetic /h/.

Table 14. Outcome of a regression analysis on the type of /h/-insertion in ME

N. obs. 313 AIC 263 r^2 (conditional) = 0.34				
	Estimate	Std. Error	z value	Pr(> z)
(Intercept)	−3.6400	0.6786	−5.364	0.0001 ***
Education:				
private	[reference level]			
public	2.8442	0.7394	3.846	0.00012 ***

Overall, speakers with private school education produce more glottal insertion in stressed environments – especially in words with emphatic stress. And whereas the publicly schooled speakers insert more [h], speakers who have undergone private schooling produce relatively more epenthetic glottal stops.

7. Discussion and conclusion

This article explores the factors that condition the realisation of (h) in the Marshall Islands, drawing attention to the fundamental regularity and social situatedness of this phenomenon. /h/-dropping in the RMI is constrained in familiar ways: It is socially stratified whereby privately educated speakers retain much more /h/. It is found least in open class lexemes and it mainly occurs with pronouns (and forms of *have*). And it is disfavoured in the context of vowels, laterals and other voiced sounds. These findings are not surprising given the acquisition literature as well as the history of h-dropping. Indeed, not unlike 19th century Britain where ‘the pronunciation or non-pronunciation of /h/ [is] ... *the* sign of education and knowledge of the proper conventions of writing’ (Grund, 2017), in the RMI, the realisation of /h/ (when /h/ is the target norm) is

fundamentally contingent on the type of schooling, especially given that privately educated speakers have disproportional access to proficient English models for the realisation of /h/.¹³

H-insertion, on the other hand, is not discussed much in the literature and has been singled out as ‘an ideal opportunity to research language change under (language and dialect) contact scenarios’ (Schreier, 2019, p.37). The data presented here suggest that the situation in the RMI differs from the dialect root scenarios described in Schreier, both in terms of target variety but also regarding the constraints that govern /h/-insertion. Most pertinently, the ways in which speakers of Marshallese have come and continue to come into contact with English is more akin to the language learning scenarios described for French learners of English. Hence, similarly to Janda and Auger (1992), stressed syllables receive more insertion, especially when uttered by privately educated speakers. Consequently, and in line with Janda and Auger’s (1992, p.222) contention that ‘the proportion of hypercorrect forms becomes much higher in settings favouring more self-monitoring’, I have interpreted these findings as a result of an attention effect whereby speakers with more access to native speaker models produce hypercorrect forms in order to avoid /h/-dropping – and more frequently so in emphatic situations and stressed contexts. Also the type of insertion depends on the school choice with publicly educated speakers relying mainly on glottal fricatives, whereas privately educated speakers tend to use glottal stops. In future work, it would be rewarding to investigate whether ‘there was more hypercorrect [h]-insertion in the styles where speakers dropped /h/ less often’ (Janda & Auger, 1992, p.222).

On the whole, the research reported here has suggested that, in the RMI, school choice is highly significant for the dropping and insertion of (h). This effect is due – at least in part – to the unequal access to English native-speaker or near-native speaker input, which is only available to pupils in private schools.¹⁴

13. I would like to thank one of the anonymous reviewers who queried whether the variable might be beginning to develop social meaning in Marshallese English. This is an excellent question and one that can unfortunately not be answered without recourse to attitudinal data. To my knowledge, /h/ dropping and insertion are not the topic of overt commentary in the community. Trying to operationalise conversational topic as a measure of style shifting is problematic since – when taken alone – topic does play a role in the realisation of /h/, but it does not achieve significance in any of the regression models.

14. In-session training courses have revealed that teachers in the Marshallese public school system have relatively low English proficiency levels. The results of the 2015 cohort of English teacher training students – in-session teachers who are currently teaching in the Marshallese public school system – reveal that only 58% of teachers passed the foundation English classes in summer 2015. ‘Although they are teachers of English, their English language proficiency in

School placement is thus not only the main criterion for academic achievement; it also sets forth important social inequalities that structure academic opportunities in the RMI.

On a larger scale, the findings of this article tie in with ongoing discussions about the social situatedness of language use and language learning in the RMI. As the Marshallese public school system is undergoing important policy reforms, careful sociolinguistic research can contribute empirical information for the establishment of educational benchmarks. This is particularly relevant in communities where many 'teachers do not speak Marshallese and might thus not be familiar with the transfer phenomena that characterize the local contact variety' (see Buchstaller & Willson, 2018, p.357). Studies such as the present one can inform English teaching and testing in the Marshallese public school system more widely, bringing to the fore the faultlines of language learning and language use which establish social stratification in the RMI.

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Appendix A. H-Dropping

Add1 Model: H-dropping ~ (1 | Speaker)

	Df	AIC	LRT	Pr(>Chi)
<none>	716.27			
Education	1	697.40	20.8698	0.0001 ***
Word class	3	703.10	19.1685	0.0003 ***
Stress	1	706.27	12.0000	0.0005 ***
Prev. environment	5	708.58	17.6858	0.0034 **
Type of drop	2	708.26	12.0040	0.0025 **
SE level	2	713.28	6.9900	0.0303 *
N. Syllables	3	720.96	1.3113	0.7265
Gender	1	717.93	0.3427	0.5583
Age	1	717.46	0.8091	0.3684
Topic	2	718.96	1.3099	0.5195

Appendix B. H-insertion

Add1 Model: H-insertion ~ (1 | Speaker)

	Df	AIC	LRT	Pr(>Chi)
<none>	1273.0			
Stress	1	1234.9	38.074	0.0001 ***
Type of insertion	2	1237.9	39.156	0.0001 ***
Word class	3	1262.6	14.366	0.0024 **
Topic	2	1267.7	7.299	0.0260 *
Prev. environment	5	1272.7	8.302	0.1404
Gender	1	1272.8	0.141	0.7072
Education	1	1273.0	0.015	0.9037
SE Level	2	1272.3	2.659	0.2646
No. syllables	3	1275.5	1.482	0.6864
Age	1	1272.4	0.546	0.4599

Appendix C. Type of H-insertion

Add1 Model: Type of H-insertion ~ (1 | Speaker)

	Df	AIC	LRT	Pr(>Chi)
<none>	276.21			
Education	1	263.64	14.563	0.0001356 ***
SE Level	2	274.69	5.5157	0.0634283
Prev. environment	5	275.20	11.004	0.0512994
Stress	1	276.42	1.7893	0.1810173
Word class	3	277.47	4.7384	0.1919870
Type of insertion	2	278.38	1.8242	0.4016704
Gender	1	278.02	0.1816	0.6699941
Topic	2	280.03	0.1756	0.9159616
N. syllables	3	276.86	5.3450	0.1482106
Age	1	277.84	0.3669	0.5447155

Abstract (German)

Dieser Artikel untersucht die soziolinguistische Konditionierung der variablen Realisierung von glottalen Lauten im Marshallese English, einer Varietät des Englischen, die in der Republik der Marshall-Inseln (RMI) gesprochen wird und die in der Variationslinguistik bisher unterrepräsentiert ist. Quantitative Analysen zeigen, dass der schulische Hintergrund des Sprechers die wichtigste Determinante sowohl für /h/-dropping als auch für /h/-insertion ist. Diese Ergebnisse sind angesichts der sozialen Ungleichheit beim Zugang zu Bildungsmöglichkeiten die die RMI kennzeichnen nicht überraschend. Die Sprachkontaktsituation der RMI, in Verbindung mit der beobachteten Konditionierung von /h/-insertion, legen nahe, dass sich das auf den Marshall-Inseln gesprochene Englisch typologisch von der südensinglichen Dialektwurzel unterscheidet, die Schreier (2019) für andere Teile des Pazifiks beschrieb.

Address for correspondence

Isabelle Buchstaller
Sociolinguistics Lab
Universität Duisburg-Essen – Campus Essen
Anglophone Studies
Universitätsstrasse 2
Essen, 45141
Germany
i.buchstaller@uni-due.de