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Preface

Dear Reader,

It is my pleasure to present our Coyote Papers, Volume 25. This collection contains papers that were presented during the Arizona Linguistics Circle in October 2022. This is an annual conference that welcomes a variety of topics in the linguistics field. This year we gathered representatives from eight different countries and 16 universities.

This volume contains eight papers that were single-blind peer reviewed.

I would like to thank everyone who voluntarily took part and committed through all the process that began with the organization of ALC16 back in June 2022 until the publishing of the proceedings.

Gabriela De la Cruz-Sánchez
Editor in Chief
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We thank all our reviewers for their hard work and commitment:


General Information

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Definite Determiner Alternation in Yemeni Tihami Arabic

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Introduction

This paper focuses on the phonological alternations of the definite determiner of the Yemeni Tihami Arabic variety spoken in the governorate of Hajjah. The analysis I provide supports existing arguments on the moraicity of initial geminates. Unlike in Standard Arabic and other Arabic varieties where the definite determiner is [l], the definite determiner in Yemeni Arabic varieties occurs in different forms, such as [m], [b], or [n], and shows more variation than its counterparts in other Arabic varieties. The phonological analysis provided in this paper was inspired by an atlas of the dialects of northern Yemen by Peter Behnstedt (2016), which briefly presents a few examples of different definite determiners attested across northern Yemeni Arabic varieties. I bring more data for one of these varieties, Tihami, to further investigate the allomorphy of its definite determiner (DET) using Optimality Theory (OT).

The city where this Tihami variety is spoken is in northwestern Yemen and part of the Tihama coastline. Its population is approximately 2 million. The definite determiner of this dialect is /m-/ because this is one of a group of spoken varieties collectively known as Tihami Arabic, I use the term *OCP m-dialect* to refer to it, and that is because the Obligatory Contour Principle (OCP, Leben 1973) plays a major role in the alternation of its definite determiner. Data were collected from three informants living in a village called Kashar. They are all males and are between the age of 30-40 years old.

The remainder of this paper is organized as follows. Section 1 introduces geminates and the approach used to analyze initial geminates in this variety. Section 2 presents data for the definite determiner, provides a phonological analysis of its alternations using optionality within the OT, and concludes the paper.

1 Geminates

In this article, I analyze geminates based on theories arguing for the moraic weight

* I wish to thank the ALC 16 participants, especially the reviewers, for their insightful comments on this work. I am grateful to Aaron Kaplan for his feedback on this project.
representation of geminates proposed by Hayes (1989, 1995). Based on this approach, geminates are assumed to contribute a mora to the syllable weight. Davis (1999), Topintzi (2006, 2008), and Topintzi and Davis (2017) argue that initial geminates are moraic. I adopt their approach. I present evidence for this in Tihami Arabic in Section 2. See the representation of the definite form [f-fa. nuu] 'the lantern' below.

\[
\text{ff aa. nuu <s>}
\]

\[
|\ |\ |\ |
\]

\[
\mu\mu\mu\mu\mu
\]

(1) Onset Geminates in Tihami Arabic

In (1), the word-initial [ff] geminate is assigned a mora like an intervocalic geminate. Therefore, I assume that word-initial geminates contribute a mora to syllable weight in this variety. This type of geminate is attested in the Tihami variety analyzed here only in the definite form of nouns as part of constructing the determiner phrase, as will be shown in Section 2. Initial geminates of this variety are limited to bilabial consonants.

As for syllable weight, Watson (2007, 2011) argues that syllables in Yemeni Arabic are maximally bi-moraic, which is also my argument for this Tihami variety. Watson (2007, 2011) draws a distinction between non-geminate consonants that are assigned a mora through weight-by-position and segments that are underlyingly moraic, such as geminates and vowels. In this paper, I make the same distinction between CVC syllables (light), on the one hand, and CVV and CVG syllables (heavy), on the other.

In (2), the first syllable in [ffir.gah] 'the band' carries two moras based on this analysis; the first mora is contributed by the initial geminate, and the vowel contributes the second mora. Word-final codas are assumed to be extrasyllabic in these dialects following Watson (2007, 2011). See the representation of moras for [faanuu] 'lantern' and [sukkar] 'sugar' below, and [ffirgah] 'the band'.

\[
\text{faa. nuu <s> suk.ka <r> ff ir.ga <h>}
\]

\[
|\ |\ |\ |\ |
\]

\[
\mu\mu\mu\mu\mu\mu\mu\mu
\]

(2) Mora representation in Tihami Arabic
2 Definite Determiner of the OCP-m-dialect

The definite determiner in this dialect surfaces as [m-] in all environments but optionally undergoes full assimilation before labials. Therefore, I assume that it is /m-/ underlingly.

(3) a. tees ‘sheep’ m-tees ‘the sheep’
   b. hanaʃ ‘snake’ m-hanaʃ ‘the snake’
   c. milh ‘salt’ m-milh ‘the salt’
   d. χubz ‘bread’ m-χubz ‘the bread’
   e. raas ‘head’ m-raas ‘the head’
   f. naas ‘people’ m-naas ‘the people’

In (3), the definite determiner creates onset clusters in the definite forms. The definite determiner surfaces faithfully as [m] before nonlabials and before [m]. With words that start with labials [b, m, w, f] the definite determiner displays optional variation in the output; see (4).

(4) a. basˤal ‘onion’ m-basˤal ~ b-basˤal ‘the onion’
   b. firgah ‘band’ m-firgah ~ f-firgah ‘the band’
   c. wardah ‘roses’ m-wardah ~ w-wardah ‘the roses’
   d. matˤar ‘rain’ m-matˤar ~-------- ‘the rain’

The definite determiner either fully assimilates to the following word-initial labial or surfaces faithfully as a labial nasal. It is worth noting that these two options lead to the same result when the following sound is [m]; hence, the lack of optionality in (4d). This optionality is assumed to be triggered by the OCP-LAB constraint, which penalizes adjacent labial consonants, such as partial geminates such as [mf..] on the boundaries of the prosodic word; I assume the definite determiner to be outside the prosodic word. Therefore, the /m-f/ labial sequence, which comes from separate morphemes, fully assimilates to become [ff], thus fused into one long [f] (which is weighted with two moras) as a geminate. I specify that this constraint applies only to labial sequences at the left boundary of the prosodic word. Labial sequences within the prosodic word such as in [hafwah] ‘mistake’ and [labwah] ‘lioness’ in this variety are unaffected by OCP-LAB, in as much the same way coronal sequences in Standard Arabic are attested word-internally despite their being banned at the left boundary of the definite forms, such as in /ʔal-fams/ ‘the sun’ which surfaces as [ʔaf-fams] not *[ʔal-fams], see Heselwood and Watson (2013).

The assimilation triggered by this OCP-LAB constraint comes at the expense of preserving the input features of the determiner in the output. The assimilation of a nasal to
a non-nasal labial violates IDENT-SONORITY (IDENT-SON), which penalizes changes in the sonority of the input segments. This constraint penalizes the increase or decrease in the sonority of the sonorant segments, so a nasal becoming glide or vice versa is penalized by this constraint because it means an increase or a decrease in the sonority scale of sounds. I assume the sonority hierarchy vowels > glides > liquids > nasals > obstruents, with vowels having the highest sonority and obstruents having the lowest (Clements 1990; Kenstowicz 1994; Smolensky 1995; Parker 2011).

The form in (4b) surfaces optionally as [m'firgah] or [f'firgah]. The former violates OCP-LAB by having the [mf] sequence; however, the latter satisfies this constraint through assimilation but violates IDENT-SON instead. This optionality is analyzed using the Partial Orders (PO) model of optionality proposed by Anttila (1997, 2007). The model assumes partially ordered constraints to produce more than one actual output. So, if [m'firgah] and [f'firgah], are both possible attested outputs for an input /m-firgah/, which is the case in (5), and if the ranking $X >>$ IDENT-SON >> OCP-LAB, with $X$ being any dominating/high-ranking constraint, gives us only [m'firgah] and $X >>$ IDENT-SON >> OCP-LAB gives only [f'firgah], then to get both outputs we posit that constraints IDENT-SON and OCP-LAB are not ranked with respect to each other, and in any tableau a ranking is chosen at random: $X >>$ IDENT-SON or $X >>$ OCP-LAB. Adopting this model, IDENT-SON and OCP-LAB are partially ordered in relation to each other to produce both outputs in (5). Let the analysis start with the two major constraints playing a role in the determiner variation in (5).

The output in (5a) violates OCP-LAB because of the two adjacent labials in its onset cluster. (5b) satisfies OCP-LAB, but does so by changing the identity of the underlying determiner from nasal to obstruent through assimilation, thus violating IDENT-SON. The dotted line represents partial order. Thus, the ranking IDENT-SON $>>$ OCP-LAB produces (5a) and the opposite ranking produces (5b). Putting the exclamation mark in round brackets indicates the fatality of the violation under one of the two rankings, so the violation of candidate (5a) is fatal under the OCP-LAB $>>$ IDENT-SON ranking, whereas the violation of (5b) is fatal under the opposite ranking. These two constraints produce variation in (4b). The tableau in (6) can be expanded by considering a candidate with partial assimilation.
The determiner in candidate (6c) assimilates with the following consonant in voicing. However, this assimilation does not satisfy the OCP constraint because it contains a sequence of two labials on the boundary of the prosodic word; rather, it also violates IDENT-SON and is ruled out by violating both high-ranking partially ordered constraints. DEP-µ penalizes epenthetic moras and is low-ranking. The geminate created by assimilation contributes a mora to the weight of the first syllable in (6b). Onset geminates are assumed to be moraic in this dialect, as mentioned in the geminates section earlier.

Another candidate to consider is one in which the word-initial consonant changes its place feature to [-labial] to satisfy the OCP constraint, but the high-ranking IDENT-PLACE (ID-PLACE) constraint that preserves the place features of the output segments in the output rules it out; see (7).

This constraint is necessary because one way to satisfy OCP-LAB is by changing the place features of the prosodic word-initial labial when it attaches to the labial determiner. A candidate like *[m-ðirgh] for the input /m-firgh/ in (7) satisfies OCP-LAB by changing the place features of the prosodic word-initial labial instead of assimilation of the determiner, and it would be penalized by the high-ranking constraint IDENT-PLACE. The winning candidates would then be [ffirgah], the one that preserves the place features of the prosodic word, and [mfirgah], the faithful output. The IDENT-PLACE constraint is high-ranking in the grammar of this dialect, but neither this constraint nor candidates that violate it will be shown in subsequent tableaux. See (8) for another example of optional labial assimilation. This tableau gives an example of changing the sonority of the determiner on the sonority scale from nasal to glide.
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The faithful output (8a) maintains the nasal determiner, thus violating OCP-LAB. The assimilating output in (8b) satisfies OCP-LAB through assimilation. However, the sonority of the definite determiner is not preserved as glides are more sonorous than nasals, so this candidate violates IDENT-SON. The word-initial geminate resulting from assimilation violates DEP-μ because onset geminates are moraic. Both candidates are optional, and the partial order of these two constraints produces them both. The other candidates are harmonically bounded and cannot win under any ranking.

If the word-initial syllable of the indefinite form is heavy, gemination of the determiner must be accompanied by epenthesis because onset geminates cannot be created in a syllable that is already heavy without the geminate. Epenthesis makes the geminates intervocalic in this case. Consider the data in (9).

A form like *fīiraan where the onset geminate is not allowed because the onset geminate is created in a syllable that is already heavy without the geminate. When assimilation occurs, word-initial geminates created in heavy syllables are resolved by epenthesis in (9a-d). When the word-initial consonant is [m], as in (9d), an epenthetic vowel is inserted before the determiner to avoid the word-initial nasal geminates. Compare this data to that given in (4), where the initial geminates created by the definite form are allowed because they do not make their syllables superheavy.

The ban on onset geminates in heavy syllables raises the question of why they are allowed in (4) but blocked in (9). The answer to this question is that initial geminates are moraic, as mentioned earlier in Section 2, and that it is not that onset geminates in heavy syllables are blocked but the fact that they can violate the bi-moraic maximum syllable weight. If they fall into syllables already heavy, they make them superheavy, that is, tri-
moraic. This violates the bi-moraic maximum syllable weight in the dialect.

A weight constraint such as *\(\mu\mu\mu\) penalizes superheavy syllables, which explains why word-initial geminates are banned in the definite forms in (9). To prevent superheavy syllables, the definite determiner either surfaces faithfully to create partial geminates [mf-, mb-], or the first part of the geminate is assigned to the coda of an epenthetic syllable after assimilation. See (10) for an evaluation of the partial geminate option.

(10)

```
/m - fiiraan/ *\(\mu\mu\mu\) IDENT-SON OCP-LAB DEP-\(\mu\)
 a. mfii.raan
 b. ?af.fii.raan
 c. ffi.ii.aa
 d. ?am.fii.aa
```

The faithful output in (10a) violates OCP-LAB, which is satisfied by violating IDENT-SON in (b) and (c). However, candidate (10c) is ruled out by the high-ranking *\(\mu\mu\mu\), which penalizes superheavy syllables. Output (10b), the other optional licit output, also violates IDENT-SON, but satisfies *\(\mu\mu\mu\) through epenthesis, thus violating the low-ranked DEP-\(\mu\) constraint. Epenthesis in (10b) resolves the ban on word-initial geminates in superheavy syllables by syllabifying the first part of the geminate as the coda of the epenthetic syllable— that is, by making the geminate intervocalic. IDENT-SON and OCP-LAB must be partially ordered in relation to each other to yield both optional outputs in (10). Like the winning output in (10a), candidate (10d) violates OCP-LAB, but is ruled out by DEP-\(\mu\). Therefore, the PO ranking in (10) provides the partial geminate variant. See (11) for the other PO rankings that produce the geminate-and-epenthesis variant.

(11)

```
/m - fiiraan/ *\(\mu\mu\mu\) OCP-LAB IDENT-SON DEP-\(\mu\)
 a. mfii.aa
 b. ?af.fii.aa
 c. ffi.ii.aa
 d. ?am.fii.aa
```

To obtain the geminate-and-epenthesis output, the ranking of the constraints must be OCP-LAB >> IDENT-SON, as shown in (11). It should be noted that (11d) is ruled out by OCP-LAB under this ranking, whereas DEP-\(\mu\) rules it out under the first PO ranking in (10). This candidate competes with the partial-geminate attested output in (10) but competes with the
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geminate-and-epenthesis output in (11).

Now that a grammar is developed to account for the labial cases in this dialect, let us test in (12) the grammar on one of the examples from (3), where the definite determiner surfaces faithfully, and no optionality is attested.

(12)

/m - tees/  ID-PLACE *μμμ IDENT-SON OCP-LAB DEP-μ

a. mtees
b. ?am.tees *

(12a) Epenthesis in candidate (12b) is penalized by DEP-μ, and nasal dissimilation in candidate (12c) is penalized by IDENT-SON. The possible candidate in (d), where the determiner assimilates to the place feature of the following alveolar consonant, is ruled out by the high-ranking identity constraint such as IDENT-PLACE, which penalizes change to the input place features in the output. The faithful winning candidate does not violate any of these constraints. The grammar developed thus far can account for all facts about the determiner in this language. The ranking of the constraints governing its phonology is given in (13).

(13) IDENT-PLACE, *μμμ >> IDENT-SON, OCP-LAB >> DEP-μ

The ranking in (13), determined from the examples in (10-12), shows the relationship between the constraints that produce variation/optionality in this grammar: IDENT-SON and OCP-LAB. While the ranking between IDENT-PLACE and *μμμ does not matter, the ranking of IDENT-SON and OCP-LAB matters, but is variable. IDENT-PLACE must outrank these two variable constraints, and they must outrank DEP-μ.

In conclusion, phonological analysis of the definite determiner of the Yemeni Tihami OCP m-dialect supports existing arguments on the moraicity of initial geminates and presents a rare case of initial geminates in Arabic. In this paper, I show how the OCP effect is active in the alternation we see in the definite forms in this dialect. This is the first study that phonologically analyzes the determiner alternation in this variety using OT.
References

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Introduction

Garifuna (ISO 639-3: cab) is a northern Arawakan language spoken in Central America by approximately 100,000-500,000 Garifuna people (Haurholm-Larsen 2016:6). The acoustic properties of stress in Garifuna are not well documented. This study represents the first quantitative exploration of Garifuna word-level stress, through the examination of five potential correlates: spectral expansion, duration, intensity, H1-H2, and F0. This study took place in the spring of 2022, during the COVID-19 pandemic. Elicitation sessions were conducted via Zoom, with audio recorded from the speaker’s Android phone. As such, this study is not only the first to acoustically examine Garifuna stress, but a case study of pandemic fieldwork—particularly regarding what can be done under non-optimal recording conditions.

1 A framework for stress

This paper assumes an Autosegmental-Metrical (AM) view of stress, in which stress is understood as a pattern of prominence relations between elements of an utterance, rather than a scalar property of a given element (Ladd 2008:54). This paper adopts the definition of stress put forth by Hyman (2006: 231): it is obligatory and culminative. That is, each prosodic word must contain one and only one syllable marked for highest metrical prominence.

Stress may be broadly separated into word- and phrase-level stress. These are often unwittingly conflated. Examples include Fry (1954:138), who purported to examine English word-level stress correlates by having participants read minimal stress pairs (e.g. subject vs. sujet). However, words uttered in isolation are phrases in their own right, and receive phrasal stress (Gordon 2014:84-88). In addition, Fry’s target words were placed in focal position within each sentence frame, thereby receiving phrase-level stress. Word-level stress may be additionally confounded by effects at prosodic phrase boundaries, such
as pitch excursions (Wagner et al. 2010:909), vowel lengthening (Wightman 1992:1716), and general strengthening effects (Roettger and Gordon 2017:3). Many experiments are structured to keep target words away from the phrase edge in order to control for these potential boundary effects. However, this strategy is not without considerations. If only the target word is varied between sentences, participants may interpret it as new information, and inadvertently produce it with focal stress (Roettger and Gordon 2017:4).

As stress is a structural property of metrical hierarchy, it has no single acoustic correlate (Hyman 2009: 215). Rather, stressed syllables are realized through a combination of cues that are language-specific. These include increased duration, F0, and/or intensity, flatter spectral tilt towards higher harmonics, spectral expansion, and resistance to co-articulation (Van Heuven and Turk 2020:150, Gordon 2004:1). This paper examines five potential correlates: spectral expansion, duration, intensity, H1-H2, and F0.

2 A sketch of Garifuna stress

Primary stress in Garifuna is bounded within the first two syllables of the prosodic word (Haurholm-Larsen 2016:22). However, its placement is unpredictable within this two-syllable window. Three minimal pairs differing in the location of primary stress are shown in (1) (Dąbkowski 2021:1), illustrating how primary stress is lexically specified.

(1) a. águra ‘to throw away’ vs agúra ‘to touch’
   b. áriha ‘to doze’ vs aríha ‘to see’
   c. dúru ‘(an) offence’ vs durú ‘thick’

Unlike primary stress, secondary stress is rhythmic and predictable: it occurs on every third syllable following the primary stress. Examples of secondary stress are shown in (2) (Haurholm-Larsen 2016: 175) and (3) (Haurholm-Larsen 2016: 107).

(2) atiri-gu-bà-nya l-uwágu wèyasu?
   how.much-COMPL-EXTR-3PL 3SG.M-on occasion
   ‘How many are they going to be this time?’
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(3) n-abâcha-gûdâ:-l-i n-unîye miligi
1SG-heat-CAUS-DI\(^{1}\)-3SG.M 1SG-CLF milk
‘I’m going to heat my milk.’

(2) shows stress in the phrase atirigubànya ‘how many are they’. Primary stress falls on the syllable \(tî\); secondary stress falls on \(bà\). Likewise, (3) shows stress in the phrase nabâchagûdâli ‘I will [cause to] heat [the milk]’. Primary stress falls on the syllable \(bà\); secondary stress falls on \(dà\). In both examples, as indeed throughout the language, secondary stress falls three syllables to the right of the primary stressed syllable.

Though primary stress is lexical, its realization may shift with prefixation. Prefixes are not lexically specified for stress. They are of the form CV-, where V deletes if the stem begins with a vowel. When vowel deletion occurs, the prefix is considered part of the stem’s first syllable, and primary stress does not shift. (4) (Haurholm-Larsen 2016:49) illustrates this pattern (syllables are delineated with a period (.)). In (4), \(úguchu\) ‘mother’ has primary stress on the first syllable. When the possessive suffix \(nî\)- is added to the vowel-initial stem, the prefixal vowel deletes. The prefix, now \(n\)-, is affixed to the first syllable of \(úguchu\) to make \(núguchu\) ‘my mother’. The C- prefix is considered part of the first syllable, and so does not cause stress to shift.

(4) a. ú.\(u\).\(g\).\(u\).\(ch\)u
mother
‘mother’

b. n-ú.\(u\).\(g\).\(u\).\(ch\)u
1ST.POSS-mother
‘my mother’

When the first syllable of the stem begins with a consonant, the prefix occurs in its full CV- form. It is then treated as a new syllable affixed to the stem. This causes stress to shift one syllable rightward (unless stress is already on the second syllable, in which case it remains on the second syllable). Two examples of this are shown in (5) (Haurholm-Larsen:22) and (6) (Haurholm-Larsen:22).

---

\(^{1}\) DI refers to an aspectual suffix of the ‘DI-class’ (Haurholm-Larsen 2016:4). The precise behavior and classification of these suffixes is not fully understood.
In (5), the word gárada ‘letter’ becomes nigárada ‘my letter.’ Because gárada begins with a consonant, ni- is affixed as a new syllable in its full form. This causes stress to shift from the first to second syllable (where it still remains attached to the syllable gá). In (6), the word muréy ‘nance fruit’ becomes nimúrey ‘my nance fruit.’ Because stress was originally on the second syllable, stress remains on the second syllable after the prefixation of ni-.

However, primary stress after prefixation is attached to the syllable mú instead of the original réy, because the addition of the prefix shifts which syllables are present within the permitted window for stress.

No quantitative studies currently exist for Garifuna stress, though one exists for sister language Ashaninka (southern Arawakan). This study concluded that in Ashaninka, primary word-level stress was cued by duration and intensity, while secondary stress was cued only by intensity (Mihas and Maxwell 2019:4).

### 3 Measurement effects of recording devices and software

This study was during the COVID-19 pandemic. All data was subsequently recorded through Zoom, using the consultant’s Android phone.

Recording devices can impact several acoustic measurements, due their use of compression, bandpass-filtering, echo- and noise-reduction, and sampling rate variation to process audio (Sanker et al. 2021:362-364, Rathcke et al. 2017:25). Horizontal compression, where silence or other ‘redundant’ information is compressed, can alter measurements that depend on periodic motion, such as F0 and formant frequencies; selective compression may alter F0, formants, and spectral tilt (Liu et al. 2008:694). Bandpass-filtering distorts high vowels in particular, whose F1 may be artificially overestimated (and F2 artificially underestimated) by the filter’s lower frequency cutoff. Compression may show similar formant-distorting effects (Rathcke et al 2017:25).
On the other hand, Bulgin et al. (2010:1) found that F0 and formant measurements were not significantly different between (compressed) MP3 and (uncompressed) WAV formats. van Son (2005:777) concludes that lossy compression can be used in cases where an RMS error of 1 semitone or less is acceptable. Likewise, de Decker and Nycz (2011:54) found that recordings made by the MacBook and iPhone Voice Memo did not distort the overall F1/F2 vowel space.

Although use of Zoom in research exploded during the COVID-19 pandemic, there has been little previous investigation on the software’s potential distortion effects. As with other software, Zoom uses compression, echo/noise-reduction, and varying sampling rates to manage the audio stream. In a 2021 study, Sanker et al. examined the effects of using different recorders and types of software on audio measurements. As compared to an H4n solid-state recorder, significant distortion caused by Android phone recordings was found with respect to spectral tilt, F1, F2, and signal-to-noise ratio (SNR) (Sanker et al 2021:370). Zoom was reported to have a significant distortion effect on vowel duration and spectral tilt (compared to an H4n recorder played through a 2021 MacBook Air) (Sanker et al 2021:371). However, the study further found that phonological contrasts involving duration, spectral tilt, F0 maximum, and HNR were retrievable across recording/software types; F1/F2 measures appeared to vary.

### 4 Data and methodology

Due to the COVID-19 pandemic, this study was conducted via Zoom and the speaker’s own Android phone. The consultant was Frank Palacio, a writer, artist, educator, and native Garifuna speaker from Belize. Elicitation sessions were acoustically analyzed with Praat (Boersma & Weenink 2022) and statistically analyzed/visualized with R version 4.2.1 (R Core Team). Five acoustic correlates of stress were examined: spectral expansion (F1/F2, in Hz), intensity (RMS amplitude, in dB), duration (in ms), and H1-H2 (in dB). All except duration were extracted from the vowel midpoint.

In order to examine stress, target words were elicited in carrier sentences. These were constructed to keep the target word away from the phrase edge and focus away from the target word. Sentences were elicited in a question-and-answer format, so as to control focus. A variety of questions and answers were elicited, in order to avoid consultant boredom and inadvertent new information focus on the target word (Roettger and Gordon 2017:4). An example question-and-answer format is shown in (7). The target word is in brackets; the focused word is underlined. Only the target word in the answer was analyzed.
(7) Q: kági t-iri warúguma túra?
   what 3SG.F-name star that
   ‘What is that star called?’

   shooting.star 3SG.F-name-EXTR star that
   ‘That [star] is called a shooting star.'

Target words were varied systematically so that stressed syllables of all six non-nasal vowel types (/a/, /i/, /e/, /o/, /u/, /ɨ/) in both possible stress positions were represented. After removing outliers (< Q₁ − 1.5*IQR or > Q₃ + 1.5*IQR), 31 stressed tokens (the target words) and 61 unstressed tokens were analyzed (for 92 total tokens). Initial and peninitial stress each accounted for roughly half of the stressed tokens; Welch’s T-tests did not reveal significant differences between stress positions for any of the metrics examined below (duration (p=0.110), F0 (p=0.743), intensity (p=0.760), H1-H2 (p=0.229), F1 (p=0.611), and F2 (p=0.077)). Future research would ideally include around three times more tokens to confirm the effects described below.

5 Results

Visual inspection of the stressed and unstressed vowel spaces does not seem to reveal any marked differences. Statistical analysis bears out this impression. To investigate the effects of vowel type and stress on F1, three linear models were fitted: Model 1 predicted F1 as a function of vowel type, Model 2 as a function of vowel type and stress, and Model 3 as a function of vowel type, stress, and the interaction of vowel type and stress. Analysis of variance F-tests comparing model fit indicated that Model 2 did not significantly improve fit over Model 1 (F(84,1) = 0.0008, p = 0.977); neither did Model 3 improve upon Model 2 (F(79,5) = 2.322, p = 0.051). Identical models using F2 as the response variable were then compared, with the same pattern observed: Model 2 did not significantly improve fit over Model 1 (F(84,1) = 1.156, p = 0.286); Model 3 did not significantly improve fit over Model 2 (F(79,5) = 0.150, p = 0.980).

Taken together, the inclusion of stress does not seem to significantly improve the prediction of either F1 or F2 over using vowel type alone. This is also supported by two multiple linear models fitted on stress and vowel type, predicting F1 and F2 respectively. Stress was not found to be significantly predictive of F1 (t = -0.029, p = 0.977) or F2 (t = 1.103, p = 0.273). All vowels were found to be significantly predictive of F1 at p < 0.005,
while all vowels besides /o/ and /ɨ/ were found to be significantly predictive of F2 at $p < 0.005$.

(8)

A binary logistic regression model was then run predicting stress as a function of duration, intensity, H1-H2, F0, and vowel type. Vowel type was sum coded. A significant main effect of duration was observed ($\beta=0.012$, $p=0.024$). Intensity ($\beta=-0.132$, $p=0.126$), H1-H2 ($\beta=0.037$, $p=0.523$), F0 ($\beta=0.049$, $p=0.072$), and vowel type (/a/ ($\beta=-1.014$, $p=0.084$), /e/ ($\beta=-0.611$, $p=0.649$), /i/ ($\beta=0.087$, $p=0.872$), /o/ ($\beta=0.059$, $p=0.957$), /u/ ($\beta=0.878$, $p=0.140$), /ɨ/ ($\beta=0.601$, $p=0.507$)) were not found to be significant predictors.

Figure (8) shows the duration (in milliseconds) of stressed and unstressed vowels, as broken down by vowel type.

**Discussion**

This study suggests that duration is significantly associated with primary stress, in keeping with Mihas and Maxwell’s (2019:4) findings for sister language Ashaninka.

Visually and statistically, Garifuna vowels appear quite stable across both stressed and unstressed conditions. Analysis of variance F-tests suggest that when predicting F1 or F2, including stress (or the interaction of stress and vowel type) does not significantly improve fit over using vowel type alone. Linear models regressed on stress and vowel type also support the interpretation that stress is not a significant predictor for F1 or F2.
After fitting a binary logistic regression model predicting stress as a function of vowel type, duration, intensity, H1-H2, and F0, a main effect was found only for duration (logit coefficient = 0.012, p = 0.024); that is, for every 1 millisecond increase in vowel duration, the probability of the vowel being stressed increases by 50.31%.

It is possible that any of these predictor variables may interact with vowel type, as English vowel duration does (House 1961:1), or Van Heuven and Sluijter’s (1996:234) observations that closed vowels tend to be higher in F0, and open vowels in intensity. However, to estimate an interaction of the same size as a main effect requires a sample size four times as large (Geller et al 2020:302). Future research is encouraged to collect a robust sample size more equipped to examine interactions.

It is also important to consider the possible confounding effects of recording device and software. Sanker et al. (2021:370) reported that Android phone recordings significantly differed from the H4n industry standard in measuring H1-H2 and F1/F2; Zoom was reported to significantly distort vowel duration and H1-H2. As this work relied on Android and Zoom, several potential correlates could be affected. However, this does not mean the results are meaningless: findings by Sanker et al. (2021:369) also suggest that phonological differences (such as between stressed and unstressed syllables) are recoverable. Thus, although absolute measurements should be taken with a grain of salt, the general pattern emerging from this study should still be reliable.

This study represents the first quantitative examination of stress in Garifuna, as well as one of the few in the Arawakan languages generally. As Garifuna prosody is still not well understood, we must also be cautious of the potentially confounding effects of stress and accent (though effort was taken to control for this).

Taken together, this study provides encouragement and an initial base for further exploration of stress in Garifuna. The use of phone recordings, as well as software like Zoom, can serve as a(n often necessary) entry into preliminary or exploratory research in many language communities, particularly those which are remote or in cases where it is not possible to supply standard, high-quality recording devices to all consultants. Used with knowledge of potential confounds, these data suggest inroads for further research into Garifuna stress, as well as a case study of fieldwork using consumer-grade technology most likely to be available to consultants and other study participants.
References


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Spatial Language and Vision:
The Geocentric Frame of Reference
in Blind Traditional Negev Arabic Speakers

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Introduction
Spatial concepts have a special status in the study of the relationship between language and cognition. They are fundamental constituents of conceptual structures (Lakoff and Johnson 1980), deeply connected to motor and visual skills (Landau 2010 & Marotta 2013), on one hand, yet subject to language-specific and culture-specific elaborations (Levinson 2003), on the other. In the field of perceptual psychology, bottom-up theories suggest that direct and immediate perception through the affordances (physical and functional properties) of objects and events is the basis of conceptualization (Gibson 1979), while top-down theories posit that cognitive processes guide and interpret perception (Gregory 1966). In this respect, the nature of spatial representations and, in particular, their acquisition, remain subjects of debate (Meini 2013).

1 Hypothesis and Expected Results
If linguistic conceptualization derives directly from sensory experience (De Vega et al. 2008), the linguistic representations of congenitally blind speakers should be substantially different from those of sighted speakers of the same language. At the same time, if conceptualization is at least in part independent of sensory experience and based on linguistic categorization (Mahon & Caramazza 2008; Bedny & Saxe 2012), lack of visual information should only superficially influence conceptual structures (Marotta 2013). I tested this hypothesis, comparing linguistic representations of static, projective spatial relations on the horizontal plane in sighted (TNA) and blind (BTNA) Traditional Negev Arabic speakers.

Previous studies (Alloway et al. 2006; Amedi et al. 2003) revealed that in congenitally blind subjects, other processes that enable the formation of mental images (Ishai & Sagi 1995), among them linguistic categorization (Vigliocco et al. 2009), partially
compensate for visual deficiencies. Thus, I expected to find similarities in TNA and BTNA linguistic projective spatial representations.

TNA is of particular interest in disambiguating the role of language in conceptualization. As Cerqueglini (2015; 2022) demonstrated, TNA spatial linguistic representations display an extraordinary degree of cultural elaboration, encoded in a culture-specific ontology of objects in space—based on the interplay of culture-based parameters, routine affordances, and axial constraints—all reflected in a complex spatial grammar (Section 4). TNA culture-based ontological parameters (e.g., cultural familiarity) often prove stronger than functional/metrical affordances, which seem to play an important role in blind speakers’ spatial experience (Gallese & Lakoff 2005; Barsalou 2008). In TNA, small-scale descriptions often rely on cardinal directions (geocentric frame of reference, Section 3), which seem remote from direct experience. Furthermore, BTNA speakers over the age of 75 received no special teaching or training of the type modern societies provide individuals with special needs. Thus, the similarity of linguistic representations among BTNA and TNA speakers offers solid evidence to support top-down theories, demonstrating linguistic and cultural constraints’ significant effects on conceptualization.

2 Traditional Negev Arabic

TNA is a cluster of closely related tribal dialects of North-West Bedouin Ḥijāzi Arabic spoken in the Negev region (southern Israel) by women and men over age 75 who never received formal education (Cerqueglini & Henkin 2016).

3 Spatial Frames of Reference

Frames of Reference (FoRs) are coordinate systems projected on spatial arrays to locate any object (Figure, F) in relation to another object (Ground, G) (Levinson 2003). FoRs are of three basic types: object-centered, based on inherent facets of G (e.g., the front region of a G-building is where the main door is located); ego-centered, based on the coordinates projected by the speaker (S) (e.g., in English, the front region of a G-tree is projected by S, as trees are considered not to have any inherent front side); or geocentric, based on external coordinates such as cardinal directions. Let us examine Figure 1:
According to the geocentric FoR, ‘F-ball of wool is east of G-black cat.’ For the object-centered FoR ‘F-ball of wool is on the right side of G-black cat,’ according to G’s inherent bodily partition. The ego-centered FoR can be used via Reflection (‘F-black cat is on the right side of G-ball of wool’; ‘F-white cat is behind F-ball of wool’), 180° Rotation (‘F-black cat is on the left side of G-ball of wool’; ‘F-white cat is behind F-ball of wool’), or Translation (F-black cat is on the right side of G-ball of wool’; ‘F-white cat is in front of G-ball of wool’).

4 TNA Frames of Reference

TNA FoRs have been described by Cerqueglini (2015; 2022). Except for minor cross-dialectal variations (Cerqueglini 2019), TNA projective spatial linguistic representations are quite homogeneous. On a small scale, along the front/back axis, the object-centered FoR applies only to culturally salient, familiar, faceted Gs (man/horse/knife). Ego-centered representations on the front/back axis are applied only by the strategy of translation (Section 3) to familiar, (culturally) symmetric Gs (stone/tree/sheep) when FG are aligned in the middle of S’s visual field. Lateral representations, non-culturally salient or modern Gs, and different axial conditions in relation to S are treated geocentrically. The right/left opposition is not lexicalized. Figure 2 presents the TNA FoR system:
Culture-specific criteria (cultural saliency, familiarity) have proved stronger than anatomical, functional, and geometric properties. Thus, G-sheep/goat attract not the object-centered FoR, but the ego-centered FoR with Figure-Ground-Speaker (FGS) aligned and the geocentric FoR in all other axial conditions (Cerqueglini 2015). G-cow/dinosaur always attract the geocentric FoR because they are unfamiliar and not culturally salient. (For elders, cows symbolize a sedentary lifestyle foreign to the Bedouin.) Similarly, G-shoe/key/computer, also not culturally salient, are treated geocentrically.

5 Methodology

I tested 12 TNA/12 BTNA informants in their hometowns (Ksēyfih, Rahat, Sğīb as-Salām) on static linguistic projective spatial representations on a small scale. Both groups were recruited through the local health and social assistance system among individuals in appropriate psychophysical condition who were willing to participate. They were tested on the same experiments and received identical instructions, as detailed below. Stimuli consisted of toy objects available for haptic interaction and attached to cardboard bases so that their mutual position/orientation could not be modified by tactile interaction. Informants were familiarized with the toy objects (TNA, visually; BTNA, haptically), and the names of the objects were agreed upon before the tests.

A. The Individual Test, based on Levinson et al. (1992). Stimuli consisted of 18 spatial FG arrays (432 trials). F was a stone. Nine Gs were selected according to TNA spatial ontology (Section 4): for object-centered FoR, man/horse/knife; for ego-centered FoR, tree/pillow/sheep; and for geocentric FoR, chair/cow/dinosaur. FG arrays were arranged consecutively on a table. Two arrays were tested for each G. The informant was asked wīn ad-dims min G? ‘where is the stone in relation to G?’ for each array, where G was the TNA noun of the G-object. Maximal response time was 5 seconds.

B. The Communicative Test, adapted from Bohnemeyer (2011). Two informants from the same TNA/BTNA group were tested together twice, so every informant was tested both as D(irector) and M(atcher) on 2 different arrays of stimuli (48 trials). DM sat in the same room, facing the same direction. For TNA, DM were separated by a screen to prevent them from seeing each other. D received a 30x30 cm box with low edges that contained an arranged spatial scene with 6 toy objects: knife/horse/stone/sheep/chair/cow. M received the same box and objects as D and had to arrange them within 30 seconds according to D’s instructions to reproduce the array given to D. M could ask 2 questions. (Questions/replies have been excluded from the results as they appear in different numbers for different Gs).

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6 Data Analysis

This section reports qualitative data yielded from experiments A and B, comparing general tendencies shown among TNA and BTNA speakers with Gs that in TNA attract different FoRs: G-knife (TNA object-centered FoR), G-sheep (TNA ego-centered FoR/geocentric FoR), and G-chair and G-cow (geocentric FoR). Percentages of agreement in TNA responses for each array are never lower than 97% and confirm Cerqueglini’s results (2015; 2022). BTNA results for each G are based on experiment A (12 informants x 2 trials) and B (12 informants x 2 trials).

6.1 G-Knife

Figure 3 provides examples of TNA/BTNA response types for G-knife. According to TNA spatial ontology, G-knife is inherently faceted, its blade being its ‘face’ or front region.

| 1. TNA/BTNA: ad-dims ʿa-wijh al-xūsih  The stone is in front of the knife |
| 2. | |

| I. TNA/BTNA: ad-dims ʿa-wijh al-xūsih  The stone is in front of the knife |
| II. BTNA: ad-dims isār al-xūsih  The stone is on the left side of the knife |
| III. BTNA: ad-dims min al-isār w-al-xūsih min al-yimin  The stone is on the left and the knife is on the right |
| IV. BTNA: ad-dims min jāy w-al-xūsih min gād  The stone is closer and the knife is farther |
| V. BTNA: ad-dims min wara w-al-xūsih min giddām  The stone is behind and the knife is in front |

Figure 3. TNA/BTNA Linguistic Referential Strategies for G-Knife

In TNA, scenes 1 and 2 are treated according to the object-centered FoR because of the properties attributed to G-knife (Section 4). In BTNA, 18 of 48 scenes with G-knife (37.5%) produced object-centered responses (Figure 3, Response I), while 30 (62.5%) produced ego-centered responses (Figure 3, Responses II, III, IV, and V).

6.2 G-Sheep

Figure 4 provides examples of TNA/BTNA response types for G-sheep. In the TNA spatial ontology, G-sheep is culturally non-faceted. Therefore, it is treated egocentrically by
translation with FG aligned in the middle of S’s visual field (Figure 4, Response I) and geocentrically in all other axial conditions (Figure 4, Response III).

| I. TNA: \(ad-dims \ min \ al-xarūf \ w-ğād\) The stone is from the sheep and away | III. TNA: \(ad-dims \ šarg \ al-xarūf\) The stone is east of the sheep |
| II. BTNA: \(ad-dims \ min \ al-xarūf \ w-ğād\) The stone is on the farther side of the sheep in relation to the position of the speaker |

Figure 4. TNA/BTNA Linguistic Referential Strategies for G-Sheep

Figure 4, Response II shows that in BTNA speakers, different axial conditions of FGS alignment produce no substantial differences, as both scenes are treated egocentrically.

### 6.3 G-Chair

Figure 5 provides examples of TNA/BTNA speakers’ responses for G-chair. In TNA spatial ontology, G-chair is non-familiar/non-culturally salient and is treated geocentrically, as shown in Figure 5, Responses I and III.

| I. TNA/BTNA: \(ad-dims \ šarg \ al-kursiy\) The stone is east of the chair | III. TNA/BTNA: \(ad-dims \ janūb \ al-kursiy\) The stone is south of the chair |
| II. BTNA: \(ad-dims \ min \ al-yamīn \ w-al-kursiy \ min \ al-īsār\) The stone is on the right and the chair on the left | IV. BTNA: \(ad-dims \ min \ jāy \ w-al-kursiy \ min \ ḡād\) The stone is closer and the chair is farther |

Figure 5. TNA/BTNA Linguistic Referential Strategies for G-Chair
Interestingly, Responses I and III show that BTNA speakers master the geocentric FoR and the culture-specific rules for its application. Of 48 BTNA informants’ responses to arrays entailing G-chair, 22 (45.8%) were geocentric and 26 (54.2%) ego-centered along the right/left and the front/back axis, as shown in Responses II and IV.

6.4 G-Cow

Figure 6 reports examples of TNA/BTNA responses for G-cow. In TNA spatial ontology, G-cow is non-familiar/non-culturally salient and is treated geocentrically, as shown in Figure 6, Responses I and II.

<table>
<thead>
<tr>
<th>1. TNA/BTNA: ad-dims jinūb al-bagarah</th>
<th>II. TNA/BTNA: ad-dims šarg al-bagarah</th>
</tr>
</thead>
<tbody>
<tr>
<td>The stone is south of the cow</td>
<td>The stone is east of the cow</td>
</tr>
</tbody>
</table>

Figure 6. TNA/BTNA Linguistic Referential Strategies for G-Cow

Interestingly, for both scenes 1 and 2, all TNA and BTNA speakers used the geocentric FoR. Indeed, consistently with the TNA spatial ontology and similarly to G-chair, G-cow is unfamiliar/not culturally salient. Yet, unlike G-chair, G-cow is unavailable in the informants’ daily experience.

7 Discussion

Like other languages (Cattaneo & Vecchi 2011), BTNA seems to behave similarly to TNA. Indeed, as shown in Figure 3, Response I, Figure 5, Responses I and III, and Figure 6, Responses I and II, BTNA speakers master TNA FoRs and their G-based distribution. Linguistic and cultural constraints are evident as BTNA speakers can apply geocentric strategies on a small scale based on lack of familiarity and cultural saliency, as Figure 6 shows. Nonetheless, in the case of common objects in daily use, e.g., G-knife and G-chair, most of the BTNA informants preferred ego-centered strategies over object-centered and geocentric ones. TNA treats familiar, culturally salient Gs (knife) according to the object-
centered FoR and non-culturally salient Gs (chair/cow) according to the geocentric FoR along the front/back axis, while lateral representations are only geocentric. BTNA treats all frequently used Gs (knife/chair, but also coffeepot/key/shoe) egocentrically by translation. BTNA speakers develop the right/left opposition, projected onto Gs egocentrically by translation, especially when Gs are functionally aligned with S (e.g., G-knife handle is towards S. Compare Responses III and V in Figure 3). Thus, in BTNA, tools used as body extensions in daily actions assume S’s partition, regardless of their cultural saliency, supporting Gibson’s theory of perceptual affordances (1979). G-stone/tree/sheep/goat are treated egocentrically by translation, independently of FG’s alignment to S’s visual field. Yet, notably, animals that are culturally non-faceted in TNA (i.e. whose sides are not distinguished for projective spatial representations, like sheep/goat, see Cerqueglini 2015; 2022), not familiar (dinosaur), and not culturally salient (cow) never produce object-centered representations, i.e., cultural and linguistic constraints are firmly established in BTNA.

8 Conclusion

The extension of ego-centered strategies and the decline of axial constraints in small-scale contexts in BTNA compared to TNA show that semantic representations, while constrained by language/culture, are also influenced by the specific conditions in which speakers interact with objects. Yet, interestingly, both TNA and BTNA speakers show similar mastery of geocentric representations in culturally-constrained contexts. Indeed, though seemingly remote from direct experience, cardinal directions are fundamental concepts in TNA, symbolizing ethical and esthetic values (Cerqueglini & Henkin 2016), and the geocentric FoR is the TNA default strategy in all doubtful cases (Section 4). Assuming the abstractness of geocentric concepts and following Gregory’s hypothesis on the constraining force of top-down language effects (1970), BTNA mastery of the geocentric FoR may be explained both by its cultural saliency and frequency of use and by the fact that the more abstract the conceptual structure, the more active the top-down language effects. This hypothesis and the acquisition of the geocentric FoR in BTNA will be explored in future studies.

References


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Comparative constructions in Taiwanese: The online storyboard elicitation

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Introduction

The study reports the comparative constructions in Taiwanese by means of a storyboard elicitation, which was created to investigate how Taiwanese encodes comparative constructions under a context. In the other words, this storyboard attempts to elicit as many different kinds of comparative constructions as possible. Two narrations of the storyboard from two native speakers of Taiwanese are presented.

On the other hand, due to the Covid-19 pandemic, it is challenging for a fieldworker to collect data in person, and this study thus conducted an online storyboard elicitation via videoconferences (e.g., Zoom and Google Meet), which are prevalent in Taiwan, to easily collect and record data (see Leemann et al., 2020).

This study is organized as follows. Section 1 introduces the linguistic background of the comparative construction and the types of the comparatives in Taiwanese. Section 2 briefly introduce the method that this study follows. Section 3 offers the elicited data from the storyboard and investigates whether the elicited comparatives comply with what previous research proposed. Finally, this study wraps up this analysis, along with some future directions.

1 Linguistic background

1.1 Comparative construction

In the sense of Stassen (1985), the particle comparative, the EXCEED-type comparative and conjoined comparative are the most important types to generate a comparative construction, from a typological point of view.

1 I would like to thank my two language consultants and the audience in ALC 16 for the insightful comments and suggestions.
(1) in English refers to the particle comparative, which means that a morphological particle is used to create a comparison, i.e., the morpheme -er specifies an ordering relation.

(1) Aldo is taller than Alex.

(2) in Amis is the second type, which refers to the EXCEED-type, encodes a greater-than ordering relation by means of an affix -ki-, expressing ‘to exceed’ or ‘to pass’, where the comparison standard is the complement. There are two types of -ki- comparatives, by agent-focus and patient-focus, in Amis (Kuo & Song, 2010).

(2) a. mi-ki-kereteng ku widang aku cingranan.
   AF-exceed-heavy NOM friend 1SG.GEN 3SG.OBL
   ‘My friend is heavier than him.’

   b. ma-ki-kereteng nu widang aku cingra.
   PF-exceed-heavy GEN friend 1SG.GEN 3SG.NOM
   ‘My friend is heavier than him.’

The third type refers to the conjoined comparative, which contrasts two distinct clauses, as shown in (3), an example from Motu (Beck et al., 2009: 47).

(3) Aldo-na lata to Alex-na kwadoği.
   Aldo-TOP tall but Alex-TOP short
   ‘Aldo is taller than Alex.’
   Lit: ‘Aldo is tall, but Alex is short.’

The strategy of the comparatives varies across languages, and this study thus attempts to set up a storyboard, which is entitled The Twin, to elicit how a native speaker of Taiwanese encodes the comparatives.

1.2 Comparative construction in Taiwanese

According to Cheng-Hsieh (1981), Lien (1999) and Cheng (2000), four major comparative constructions are summarized in (4), and the examples also are demonstrated respectively. Indeed, (4a) and (4d) can refer to the similar pattern.
In addition to (4), equative construction also belongs to the comparatives, as exemplified in (5) according to Lien (1999) and Cheng (2000).

(5) a. Aldo kā Alex pênn / pënnpênn lō.
    PRN and PRN same/same tall
   ‘Aldo is as tall as Alex.’

Moreover, the superlative construction is exemplified in (6) by means of the degree word siōng ‘most’, as known as the superlative particle.

(6) Aldo siōng lō.
    PRN most tall
   ‘Aldo is the tallest.’

The different types of comparison in Taiwanese are formulated in Table 1, where GA refers to gradable adjective. Table 1 shows many strategies of expressing comparision from descriptive literature; therefore, it is intriguing to investigate how native speakers express comparison in natural way. Storyboard is a better elicitation Empson et al. (2021).
Table 1 *Types of the comparatives in Taiwanese*

<table>
<thead>
<tr>
<th>Comparatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A pí B GA.</td>
</tr>
<tr>
<td>(ii) A GA B</td>
</tr>
<tr>
<td>(iii) A (khah) GA-kue B</td>
</tr>
<tr>
<td>(iv) A (pí B) khah GA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A kā B pènn/pènnpênn GA.</td>
</tr>
<tr>
<td>(ii) A kā B kangkhuan GA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Superlatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A siōng GA.</td>
</tr>
</tbody>
</table>

2 **Methodology**

In the spirit of Burton and Matthewson (2015) and Empson et al. (2021), storyboards consist of a script in the contact language and a set of attaching picture panels. By means of a storyboard, any possible productions could be collected when the narration is restated by the consultants. Additionally, this study follows Empson et al. (2021)’s storyboard, entitled *The Twin Dilemma*, and further revises lines of story a little bit and makes it shorter and coherent. In other words, the background of the story is still about the twins while the plot is slightly different from Empson et al.’s.

The storyboard elicitation is a method to gather authentic speech with as little influence from a contact language as possible. Storyboards are pictorial representations of stories, which speakers are asked to tell in their own words. Storyboard can be used to elicit semantic, pragmatic, as well as morphosyntactic data (Burton and Matthewson, 2015).

Moreover, this study uses an English narration, rather than a Mandarin one, to elicit data since most of native speakers of Taiwanese are bilinguals (Taiwanese and Mandarin). This study attempts to eliminate the influence from Mandarin while the consultants are retelling the stories. Therefore, the consultants are required to hear an English narration to each panel, and they are required to retell the story in Taiwanese without the narration.

In the sense of Empson et al. (2021), this study sheds light on the inclusion of the distinctive comparative constructions and a differential degree interrogative. Therefore, Table 2 demonstrates the constructions that are targeted by *The Twin storyboard*.

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2 This study uses StoryboardThat (<https://www.storyboardthat.com/>, an online platform that renders as many necessary materials as possible.
Table 2 *Constructions targeted in The Twin storyboard*

<table>
<thead>
<tr>
<th>Comparative construction</th>
<th>Corresponding panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicative comparative</td>
<td>D, F, H, J</td>
</tr>
<tr>
<td>Adverbial comparative</td>
<td>H</td>
</tr>
<tr>
<td>Attributive comparative</td>
<td>F, K</td>
</tr>
<tr>
<td>Contextual comparative</td>
<td>D</td>
</tr>
<tr>
<td>The positive (attribute, predicative)</td>
<td>A, G, I, K</td>
</tr>
<tr>
<td>The superlative (predicative, adverbial)</td>
<td>E, I, L</td>
</tr>
<tr>
<td>The equative</td>
<td>G</td>
</tr>
<tr>
<td>Comparative interrogative</td>
<td>C, D</td>
</tr>
</tbody>
</table>

3 Discussion on the elicited data

The observation of the two sets of data elicited from the two native speakers of Taiwanese mostly follows the structures as previous literature, except for the absence of (i) and (ii) in the comparatives. This section will first discuss the structure of the comparatives as elicited by the storyboard *The Twin* and will offer the intriguing different expressions on the comparatives from the two Taiwanese consultants.

For Taiwanese, the storyboard elicited four instances of the comparatives, along with the particle *pi ‘comp’* in general from the two narrations, as shown in (10). Note that the gradable predicates in the following examples are their unmarked forms; the comparative construals are signaled through the particle *pi ‘comp’*. This type refers to the particle comparative, also known as the *pi*-comparative in Taiwanese.

(10) a. Aldo pi Alex khan kuan. (ZMW, Panel D)

PRN COMP PRN COMP high

‘Aldo is taller than Alex.’

b. Aldo pi Alex khan guantse ne?

PRN COMP PRN high how.much Q

‘How much taller is Aldo?’

c. Aldo pi Alex khan nng-konghun.

PRN COMP PRN high two-centimeter

‘Aldo is two-cm taller than Alex.’

---

3 Both consultants are bilingual speakers, Taiwanese and Mandarin. The English proficiency of ZMW is the immediate level; that of ZRZ is the advanced level and ZRZ is study in the states.
Intriguingly, in addition to the particle *pi*, the other particle *khah* ‘COMP’ can be found in (10); however, the second particle *khah* is optional in (11), respectively. Namely, (11) and (12) remain grammatical without the particle *khah*.

(11) Aldo *pi* Alex kuan.  
PRN COMP PRN high  
‘Aldo is taller than Alex.’

(12) Aldo *pi* Alex koh gau untong.  
PRN COMP PRN much good.at sport  
‘Alex is better at sports than Aldo.’

This study also found a contextual comparative (13), in contrast with the particle *pi*-comparative, namely, a contextual comparative requires *khah* instead of *pi* from two consultants’ elicited data.

(13) Siann *khah* kuan?  
who COMP high  
‘Who is taller?’

Moreover, this study has observed that *koh* is compatible with the comparative particle *khah*, and it denotes intensification to a comparative construal, as seen in (14).

(14) A-tsink kámkakkoh koh khah hit-lō khùnlüáu.  
uncle feel much COMP such confused  
‘Uncle felt more confused!’

---

Consultants are noted only in those particular and/or distinctive elicited examples.
Besides, this research has detected that king-ka is another form to replace khah in (14). In (15), king-ka seems a combination of the intensifier koh and the comparative particle khah, in that it denotes the intensification and comparison simultaneously.

\[(15)\]  A-tsik kámkak king-ka khùnlìâu. (ZMW, Panel J)
uncle feel much-COMP confused

‘Uncle felt much more confused.’

With the exception of the comparatives, this study has observed that the equatives and superlatives follow the syntactic structures as previous literature states. As for the equatives, the two equative particles pênn and kângkuán are found from the two narrations, as respectively seen in (16), and as for the superlatives, not only the superlative particle siōng was found but the other particle siann was also discovered, as illustrated in (17a) from ZRZ’s narration, and in (17b) from ZMW’s narration.

\[(16)\] a. Aldo kā Alex pênn iónggiám.’ (ZRZ, Panel G)
PRN and PRN same strong

‘Aldo is as strong as Alex.’

b. Aldo kā Alex kângkuán ióng.’ (ZMW, Panel G)
PRN and PRN same strong

‘Aldo is as strong as Alex.’

\[(17)\] a. A-pah sī tsù-láitê siōng kuán ê.’ (ZRZ, Panel E)
dad BE house-in most tall GEN

‘Dad is the tallest in our family.’

b. A-pah sī tsuán tsù-láî siâng kuán ê.’ (ZMW, Panel E)
dad BE whole house-in most tall GEN

‘Dad is the tallest in our family.’

For the adverbial comparative, (18) follows the comparative strategy that previous literature claims, whereas (19) reveals that the verbal predicate tsiah ‘eat’ precedes the first comparative particle pí rather than precedes the second one khah, where khah in (19) does not occur. Therefore, it is also of interest to investigate whether the verbal predicate undergoes any movement operation.
Comparatives in Taiwanese via Storyboard  
Chihjen Cheng

(18) Alex pí Aldo tsiáh kah tšē. (ZRZ, Panel H)  
PRN COMP PRN eat COMP much  
‘Alex eats more than Aldo,’

(19) Alex tsiáh pí Aldo tšē. (ZMW, Panel H)  
PRN eat COMP PRN much  
‘Alex eats more than Aldo,’

Conclusion

To sum up this paper is of interest to detect the various strains of the comparatives by way of the storyboard, and to investigate how native speakers of Taiwanese produce the comparatives in modern Taiwanese. On the other hand, the two elicited narrations did not detect the EXCEED-type comparative (e.g., GA-kue type) and unmarked-type comparative (e.g., A GA B type). Therefore, it is shown that the strategy of the comparatives has changed.

References


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*Coyote Papers Volume 25 (2023)*
A Phonetic Vowel Study of
Piipaash Language
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This is the first phonetic study of Piipaash vowels. Piipaash also known as Maricopa is a Native American language which belongs to the River branch of the Yuman language family (Gordon 1986). There are approximately 15 Piipaash speakers that reside within the Salt River Pima-Maricopa Indian Community (SRPMIC) and Gila River Indian Community (GRIC). The language is facing a great need of documentation and preservation in order to revitalize and pass on its legacy. Piipaash language revitalization efforts and related documentation activities are most notably being accomplished by the O’odham Piipaash Language Program (OPLP), whose office sponsored and supported this study. This preliminary study of Piipaash vowels aimed for the documentation of Piipaash vowels in addition to the application of findings with the goal in mind the language revitalization of the Piipaash language.

In previous Piipaash linguistic research, morphology and syntax were examined by Gordon (1986). The vowel system of Piipaash was briefly introduced in the study. There are ten phonemic vowels in Piipaash. It has a five-vowel system with the inventory of /i/, /e/, /a/, /o/, and /u/. Each vowel has a short and long length and stress was marked on the final vowel of a lexical root (Gordon 1986:8). The minimal pairs showed the length contrast.

| [ˈðik]  | ‘here’         | [ˈðiːk] | ‘come.REAL’ |
| [ʔaˈve] | ‘snake’        | [ʔaˈve] | ‘mouse’     |
| [ˈvak]  | ‘sit.REAL’     | [ˈvaːk] | ‘come.REAL’ |
| [iˈðo]  | ‘face;eye’     | [iˈðo]  | ‘tooth’     |
| [ˈkupuːm] | ‘be.hole.INC.’ | [ˈkuːpuːm] | ‘be.hole.PL.INC.’ |

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1 I would like to thank Carl Sundust, Berly Stevens, and Lloyd Sundust for their kindness, compassion, and support. I also appreciate the support given to me by the SRPMIC and OPLP team. Thank you Luis Barragan, Kelly Washington, Sierra Ward, Ron Carlos, Isabella Dockerty, Christina Lopez, and Friends of Yuman.
1 Method

1.1 Participants

The data were collected from three Piipaash speakers who were invited to this study via OPLP. All speakers are from the Gila River reservation. They learned English as they grew up and speak fluent English. Speaker C is a male in his early 80’s. Speaker B is a female speaker in her late 80’s. Speaker L is a male in his late 70’s. Speaker C and L are relatives.

1.2 Word list and Recording Procedure

There are not many minimal pairs in Piipaash due to its complex morphology. Therefore, in order to avoid systematic differences in vowel environments, words with a variety of environments were selected. Samples were selected pseudo-randomly from the Maricopa dictionary (Gordon 2016) and a Maricopa vocabulary and phrasebook (SRPMIC 2000).

Recording took place at a location convenient for each speaker. Speaker B was recorded in one session at the SRPMIC Cultural Repository. Speaker C was recorded in four sessions, at his home and at the repository. Speaker L was also recorded in two sessions at the repository. All recordings were done with a TASCAM handheld recorder and an external microphones.

Before recording, the interviewer reviewed lexical items on a list of Piipaash words with English translations with the participants confirming that they were familiar with the items. Words were not recorded if participants were not familiar with the items. Given a list, participants were asked to repeat the target words multiple times during the recordings.

1.3 Measurement

The recorded audio material was segmented, and the data set (n=636) was analyzed via Praat (Boersma & Weenink 2022); all the F1 and F2 formants of the stressed vowels were measured. Occasionally the formant setting was adjusted to ensure that the Praat tracks formants were appropriate (4600 Hz, four formants, 0.04 window). Although the duration of the stressed vowel was measured, the vowel duration was not standardized due to insufficient controls during the data sampling. Considering size of? the sampling population, speech rate and production volume were not controlled.
2 Result

2.1 Piipaash Vowel Space

All of the collected data were measured and visualized in a plot; F1 is the height of the vowel and F2 represents the backness of the vowel. Figure 1 captures the vowel space of Piipaash. It was consistent with a typical five-vowel system. The gender difference was reflected to the wide range of F1 and F2 values.

Figure 1. Piipaash vowel space

Figure 2 is an average vowel space of three Piipaash speakers. There were some vowel quality differences observed between short and long vowels, but it varied by speaker. Speaker L, the youngest speaker, showed the pattern of the long vowels to be more peripheral, and short vowels appear to be more centralized. This quality difference could be an influence of English. Vowel quality differences were observed in Speaker B and C especially front vowels, but the differences were not as robust. This could be due to differences in speakers’ language experience and/or their age differences. Gender differences were also observed (Figure 3). Speaker B, a female speaker whose vocal tract is presumably shorter than the mens’, has a wider F1 and F2 range.
2.2 Influence of Secondary Coarticulation

This section reports an influence of a co-articulated pre-vocalic consonant on vowel production. There are 26 consonants in Piipaash. The language contrasts labialized and non-labialized dorsal: /k/ with /kʷ/, /q/ with /qʷ/, /x/ with /xʷ/. Palatalized consonants are also distinguished from its associated consonants: /k/ with /kʲ/, /n/ with /ɲ/, and /l/ with /ʎ/. Additionally, /kʷ/ is also different from a sequence of /k/ following the labial velar glide, /w/ due to the imperative prefix, k-. Figure 4 illustrates the contrast between /kʷ/ and /kw/. This also can be said to apply to /kʲ/ and /k/ followed by the palatal approximant, /j/ due to its morphology.

2 The palatal lateral approximant /ʎ/ is described as ‘ly’ in Piipaash orthographic system.
Influence of labialization on vowel

The labialization influence on a following vowel was systematic, lowering F1 and F2. This phenomenon was observed among the labialized lexical items consistently. Figure 5 demonstrates speaker C’s utterances of qaaq /qaːq/ ‘crow’ and qwaaq /qʷaːq/ ‘deer’. Influence of the labialization has been represented in the minimal pair.

Influence of palatalization on vowel

Another prominent secondary coarticulation in Piipaash is palatalization. The near minimal pair was collected from Speaker B: nakk /naːk/ ‘to sit (realis)’ and nyaq /naq/ ‘younger sister’. The palatalization triggered lowering F1 and a sharp increase in F2 due to its high front gesture which causes a constriction in the front of the oral cavity (Figure 6).
Figure 6. Influence of palatalized consonant /ɲ/ on vowel

![Waveform and spectrogram](image)

**Nak-)** sit.SG-REAL
- 'sit'

**Nyaq**
- younger sister

Figure 7 also demonstrates the influence of the palatalized consonant on vowel and captures that the palatal lateral approximant, /ʎ/ influences the vowel following. The comparative samples, collected from Speaker C, were *luumk* /luːmk/ ‘lame (realis)’ and *muuluylłyk* /muːʎuːʎk/ ‘to cook (realis)’ with the second person prefix, *m*- . As the illustration presents, compared to F2 of the alveolar lateral approximant, the F2 raise of the palatal lateral approximant was drastically induced by the palatal lateral approximant. The influence of palatalization was more robust when the following vowels were low.

Figure 7 Influence of palatalized consonant /ʎ/ on vowel

![Waveform and spectrogram](image)

**Luumk**
- be lame.SIN-REAL
- ‘lame’

**Kawish**
- (something) 2PL-cook.PL-REAL
- '(You) cooked (something)'

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2.3 Vowel Length

This study did not control consonantal environments, speech rate, and other variables, however long vowels still tended to show greater duration than short vowels. Figure 8 shows a comparison of /o/ and /oː/ for speaker B. Lexical items are arrayed on the x-axis, and y-axis is duration (sec) of vowel utterance measured in Praat. Blue bars show short vowel items while yellow bars show long vowel items. The short vowel items had consistently shorter vowel duration than the long vowel items, though lexical differences were also observed. For example, the lexical item vqor, ‘fruit’ had twice the vowel duration of the other entries. The vowel duration likely varied depending on the environment. In general, a post-vocalic trill seemed to lengthen short vowels, while a following voiceless consonant seemed to further shorten short vowels.

Figure 8. Piipaash vowel length

Discussion

This study has provided a phonetic vowel analysis on the Piipaash language spoken in Arizona. It documented the vowel space of Piipaash which was consistent with the typical five-vowel system and individual vowel production differences among the speakers. The influence of secondary coarticulation on vowels was also documented, with labialization and palatalization having noticeable effects on vowel formants. This study also revealed that vowel duration in Piipaash is consistent with a short/long contrast, but vowel duration is also influenced by consonantal context.
This preliminary vowel study has contributed to deepening understanding of the speech of native Piipaash speakers which allow us to document the language more accurately. It also has several potential practical applications and invites future research. The data obtained for this study could be used to review the orthographic system. For example, \textit{Xlyshuushk}, ‘to sweat (realis)’ is transcribed as a long vowel in Maricopa dictionary (Gordon 2016), but durations observed from multiple speakers in this study likely fall into the range of a short vowel. There are also pedagogical applications. Unfortunately, natural language transmission of Piipaash is no longer occurring. However language revitalization efforts are greatly being achieved by OPLP in the SRPMIC and GRIC are making great achievements; in teaching Piipaash to children and adults in the community, creating a lexicography and educational materials, and empowering community language activists in addition to its cultural revitalization. Bird and Claxton (2022) suggested a role Praat-based speech visualization for indigenous language pronunciation pedagogy. Novice Piipaash learners will benefit from this practice by having their utterances visualized.

There are several future research projects. 1) Phonetic vowel study on data obtained from a corpus of connected speech. Each datum analyzed in this study was elicited manually, in the form of a word list. While this study allowed a certain degree of control of consonantal environment, spontaneous speech samples would represent more authenticity in terms of speech rate and articulation. 2) Vowel duration measurement with the controlled environment. In this study, the conclusions we can draw from vowel duration were limited by not controlling for speech rate and context. Future research may control these variables to further explore vowel length contrasts and consonantal effects on vowel duration.

References


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The Inauthentic Use of African American English on Instagram
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Introduction
In the modern technological era, the internet has become a vital part of people's daily lives across the world. Social media specifically has become a globally accepted way to communicate and interact with others while sharing life updates, entertainment, news, and so much more. It had already become a fascinating and quickly evolving entity for human interaction up until the onset of the COVID-19 pandemic when there was suddenly even more interaction occurring online as the majority of our daily communication began occurring through the internet. The internet and social media platforms are interwoven with modern youth culture in North America as many young individuals use it as a way to communicate with friends, make new friends, and interact with the world around them. Youth internet culture is always evolving at a rather rapid rate, but across the last decade, from my personal observations, there is one particular aspect of internet lingo that has seemingly been a staple for as long as I have been on social media: the usage of AAE as a linguistic tool in internet comedy. What I plan to do is investigate this linguistic phenomenon concerning the inauthentic usage of African American English (AAE) as a means of comical performance on the social media platform Instagram.

The usage of AAE in this sense that I have noticed has often been from non-Black individuals which do not speak AAE as an L1 and instead adopt a highly stylized version of it. There is much to be analyzed around the origin of this linguistic phenomenon, the reasons for it, and its impact. In this paper, I will first overview background studies about social media investigations, surveys of online linguistic landscapes, and a history of the appropriation of AAE in media. I will then go into the methodology of how I investigated the inauthentic use of AAE on Instagram before discussing findings. By the end of this paper, I will demonstrate that AAE is inauthentically performed by non-Black non-L1 AAE
speakers on social media in a way that relies on harmful stereotypes of African Americans in order to demonstrate the status of belonging to internet comedic culture.

1 Background

A small yet growing field of linguistics is one called linguistic landscapes (LL). Most simply put, linguistic landscape studies can be described as “the study of writing on display in the public sphere” (Coulmas et al., 2009). In other words, this field is dedicated to the language choices made by individuals and/or groups in public signage in the world. A newer and even smaller field focuses on the linguistic choices of online landscapes, and this field includes inspecting the language used publicly on social media such as comment sections. For my purpose here, I will call this subsect online linguistic landscapes (OLL). Maly and Blommaert (2019) propose “to study social action and space from a post-digital perspective” which involves a higher emphasis on discourse and discussion rather than heavy numerical analysis, much like this current study (Maly and Blommaert, 2019).

Instagram began as an image-sharing site in which one could only create a post with an image. Only if an image was posted was there the option to also add text descriptions beneath the image. Instagram has begun slowly focusing more on videos as well as images, but the option to type text descriptions is still available and largely utilized by users. Under each video or image post, other users can leave text-only comments. Instagram also has a feature called “stories” in which a user can post a temporary image or video that is only accessible on their feed for 24 hours. After this period, it is permanently inaccessible to other users unless the original poster posts it again. Due to the difficulty of collecting such temporary data such as Instagram “stories,” I will be looking at the descriptions and comments of regular image and video posts.

It is not uncommon that AAE speakers can be misunderstood by non-AAE speakers. These misunderstandings can have very serious repercussions and consequences that unproporionately affect Black North Americans. A very stark example of such misunderstandings was researched by Taylor Jones in 2019. Jones found that when Black individuals testified in court, official transcribers frequently made glaring errors in transcribing AAE both phonologically and syntactically, sometimes completely misconstruing what was being said by the Black testifiers. If AAE is being misconstrued by professionals whose job it is to precisely and exactly transcribe what is being said by individuals, then this misinterpretation can be assumed to be happening elsewhere such as in healthcare, education, and even in online communities. That is exactly what Ilbury
found in white British homosexual men appropriating AAE as a form of in-group culture: the users who were using AAE inauthentically on Twitter were not “accurately represent(ing) the systematicity of AAVE phonology, but rather they have stylistically appropriated” the phonological rules and other lexical items (Ilbury, 2020). This misconstruction of AAE by non-L1 AAE speakers is even further complicated when it is considered how AAE is not a monolith but rather is a language full of dialects and varieties (Jones, 2019). In fact, while AAE itself is not monolithic, the inauthentic use of AAE projects a rather monolithic stereotype of invariable "Blackness," causing further harm in reducing its speakers to a single, often detrimental, image.

In addition to misconstruction, AAE is affected by cultural appropriation. There are many linguistic studies into this phenomenon, many of them focusing on the inauthentic use of AAE by white speakers. When it comes to the inauthentic use of AAE in media, many studies focus on forms of entertainment such as television, movies, and social media. Bucholtz and Lopez (2011) introduce the term linguistic minstrelsy as the “sociolinguistic processes of deauthentication, maximizing of intertextual gaps, and indexical regimentation of the performed language” in television and movies that “reproduce(s) and undermine(s) the symbolic dominance of hegemonic white masculinity” (Bucholtz & Lopez, 2011). They claim that this mock language “reinscribes stereotypes about African Americans and their language while participating in a longstanding and often controversial pattern of European American appropriation of Black cultural forms,” which is exactly what we see in the appropriation of AAE on social media and other entertainment. AAE has been a popular form of language to “borrow” from across many non-Black non-L1 AAE speaking communities. White female social media personalities have been found to hyper-perform “Blackness” via their usage of AAE in such a way that it “surpasses ‘real’ community members,” i.e., Black women (Fix, 2010). A white drag queen in the southern United States has been documented using features of AAE while on stage in order to entertain performance guests with comedy and jokes, linguistically “blurring her racial identity” (Mann, 2011). Most applicable to this paper’s research is the study concerning inauthentic and performative use of AAE among white British homosexual men in England (Ilbury, 2020). Ilbury’s study shows how white homosexual men take on and then perform the role of the “independent, strong, sassy, fierce Black woman” stereotype as a form of in-group projection and communication style and how that stereotype has a strong foundation on the Internet from decades-old memes. I argue that the inauthentic and appropriated use of AAE in comedic and humorous settings on Instagram share a similar
background with the subjects in Ilbury’s study: a decades-old internet culture that make jokes of AAE at Black peoples’ expense.

Based on a review of three highly viral internet memes (Chris H., 2017; Crazy Laugh Action, 2012; KFOR Oklahoma's News 4, 2012), I was able to conclude that, oftentimes, the sole requirement for humor is the presence of a Black individual or AAE. All three videos revolve around highly upsetting and concerning situations composed of a drug overdose, attempted sexual assault, and an apartment building which caught fire, yet they have all soared to extreme comedic popularity based on the language used by Black individuals within the materials. In fact, the AAE phrases of the Black individuals in all three videos became “network catchphrase memes” (Chen, 2019) which can still be found in comments by non-Black non-L1 AAE speakers today.

2 Methodology

For my data, I chose to look at Instagram’s “meme pages.” “Meme pages” are Instagram accounts dedicated to making or re-uploading comical images or videos (memes), and some of these accounts have created entire communities out of their interactions with their followers. I will refer to accounts and pages I examined eight posts in total. Of these eight posts, I looked at four posts per account on two separate “meme pages” on Instagram. Of the four posts chosen to be analyzed per account, I chose two random posts that involved the mere presence of a Black individual or AAE and two random posts that involved no Black individuals or AAE whatsoever. This comparison was done to see if there was any type of relation between the content of the post and the usage of AAE by non-Black individuals in the comment section. Originally, I had only planned to do two random posts per page, but as I was choosing my posts for data, I noticed there seemed to be a slight uptick in AAE in the comments depending on the content. Upon noticing this difference, I decided to specifically look for the two types of posts I mentioned above and selected random posts fitting the above descriptions.

I manually looked for comments involving certain phonological and syntactic AAE features that are often incorrectly appropriated by non-L1 AAE speakers online as outlined by Ilbury (2020). A few of these features include the zero copula, -ng reduction, various lexical items with origins in AAE, and attempts to spell words according to AAE phonetics. I also drew from Maly and Blommaert’s (2019) post-digital analysis framework which emphasizes discourse over numerical statistics and focused on the circumstances surrounding the comments. In this case, the circumstances around the comments are the
perceived ethnicity of the commenters and the content of the original post under which the comments were made (i.e. whether or not the post involves the mere presence of a Black person or features of AAE). After collecting comments by non-Black users using AAE, I manually double-checked for AAE linguistic features in the collected comments by referencing Ilbury (2020) and Green (2002).

Determining the humorous content of the comments relied in part on understanding the typical format of internet memes. Due to the fact that memes are typically imitated from other sources then altered and reproduced to fit different contexts, I relied on a mixture of “the study of network catchphrase memes” wherein “language is replicated quickly and disseminated” (Chen, 2019) and a personal understanding of the ongoing catchphrase meme trends that were relevant at the time of data collection. In addition to this, since I was looking particularly for inauthentic uses of AAE by non-Black commenters, I looked for comments that attempted to be clever, witty, and/or offensive based on Merritt et al.’s research (2021) which demonstrated that stereotypical and potentially offensive memes seem to pair with clever, witty attempts at humor as “the threshold for tolerance of discriminatory statements (may be) influenced by ingroup/outgroup status” due to the fact that “social acceptability of expressing prejudice may be a critical feature for the creation, enjoyment, or transmission of” internet comedy and catchphrase memes.

There are many apparent caveats to this initial research and methodology. First, the sample size is very small. Some accounts post up to ten or more memes every day, so future studies will have to largely expand the sample size to get a clearer picture of the situation. Second, these posts are often removed by Instagram due to being reported or are simply taken down by the poster themselves. In addition, the same is the case with the comments beneath the post: they are often removed for various reasons. There is also the possibility that more comments were left after the data were initially collected, therefore changing the numbers of the data. Next, because you can choose how private your information is on Instagram, it is not easy to find reliable data on a commenter’s ethnicity. If the commenter decided to make that information public, then I counted their comment(s) as data in the final calculations. However, if they have not shared this information publicly, I did not add their data to the final calculations. Finally, there is always the chance of misinterpreting the data as I am not an L1 speaker of AAE and may over-interpret or under-interpret the comments.
Discussion

Most comments under the meme pages’ posts were jokes themselves. There seems to be a culture amongst the followers of meme pages to comment with jokes that bounce off the content of the posts. In other words, commenters seem to want to add something to the meme in the form of comedy rather than simply commenting that they liked the post or found it funny. There is a kind of scaffolding between the posts, the comments, and sometimes replies to the comments. The commenters seem to want to joke around themselves instead of simply looking at a meme without participation. This joking manner is no exception to the comments containing AAE by non-Black individuals: each comment, except for a few criticizing a famous Black woman, uses AAE in comedic comments.

Every single post analyzed, except one, contained non-Black individuals using AAE in a comedic sense which strongly implies that non-Black individuals are using AAE inauthentically in a performative way to add more humor to the comment section of a humorous post. While it is impossible to prove that these individuals do not speak AAE natively, it is unlikely. It is more likely that the commenters are using AAE as a way to gain social capital in an era where social media fame and attention are highly coveted. In this instance, these kinds of comments are an inauthentic use of AAE as a means to gain social capital focusing on humor which uses AAE as a tool in their comedic style. In addition, this behavior is enlivened by non-Black individuals when they are commenting in the context of memes involving Black individuals or AAE. When interacting with these kinds of memes, non-Black individuals feel more encouraged to participate in the performative and inauthentic usage of African American English.

Figure 1 shows the percentages of comments by non-Black commenters containing AAE between the four posts involving a Black person or AAE and the four posts that do not involve a Black person or AAE. Almost all four posts involving a Black person or AAE have a higher percentage than the four posts not involving a Black person or AAE. The exception to this trend is Post 6 which overall had a higher percentage of comments utilizing AAE features but with many commenters who had chosen to conceal their ethnicity and race, meaning I could not include their comments as data. Figure 2 shows that when there is a meme involving a Black person or AAE, non-Black Instagram users are over three times as likely to use AAE features in their comments. This number supports the fact that non-Black users are opting to use AAE in certain circumstances and therefore likely using it inauthentically. In addition, this difference in percentages also supports the
suggestion that non-Black users will change their language depending on the context of the meme they are commenting about. In this case, they are changing their language by including AAE features or not depending on if the meme involves a Black person or AAE. Figure 3 offers a brief sampling of the kinds of comments that were collected for analysis.

Figure 1: Percentages of AAE across post categories

<table>
<thead>
<tr>
<th>Percentage of comments with AAE</th>
<th>Posts involving a Black person or AAE</th>
<th>Posts not involving a Black person or AAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post 1 – 9.9%</td>
<td>Post 2 – 13.1%</td>
<td>Post 3 – 5.8%</td>
</tr>
<tr>
<td>Post 5 – 13%</td>
<td>Post 6 – 4.8%</td>
<td>Post 4 – 0.0%</td>
</tr>
<tr>
<td>Post 7 – 2.4%</td>
<td>Post 8 – 3.2%</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2: Average percentage of AAE across post categories

<table>
<thead>
<tr>
<th>Average percentage of comments with AAE</th>
<th>Posts involving a Black person or AAE</th>
<th>Posts not involving a Black person or AAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2%</td>
<td></td>
<td>2.85%</td>
</tr>
</tbody>
</table>

Figure 3: Illustrations of comments

<table>
<thead>
<tr>
<th>Comment with AAE posted by non-Black person</th>
<th>AAE Feature</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Pineapple be hitting different [sigh emoji]”</td>
<td><em>habitual be</em></td>
<td>Post 3</td>
</tr>
<tr>
<td>“bro think he Kanye”</td>
<td><em>null-3rd person singular verb morpheme, zero copula</em></td>
<td>Post 4</td>
</tr>
<tr>
<td>“cappin”</td>
<td><em>AAE lexical item, -ng reduction</em></td>
<td>Post 6</td>
</tr>
</tbody>
</table>

One could argue that users of social media who are non-Black non-L1 AAE speakers choose to utilize AAE to fit in with online circles are simply “crossing” and are not doing anything too different from Black individuals who are crossing into North American Standard English to “fit in” with European American circles. However, I would argue that there is a notable difference between individuals who truly cross and use audience-designed language and those individuals who use AAE inauthentically and performatively on the internet. In the case of online social media users using AAE, while they may be doing so to fit in with a sort of in-group communication style, it is not required.
or even expected of them to do so. There are countless and very famous non-Black internet comedian figures (ex., Drew Gooden, Kurtis Conner, or Charles White Jr.) who do not employ the use of AAE yet remain widely and openly accepted and enjoyed in comedic circles. However, Black individuals who are L1 AAE speakers that cross into North American Standard English are expected to perform in North American Standard English to succeed in education and ultimately their careers (Baugh et al. 305-318). If they do not perform to European American standards, their livelihoods may suffer greatly.

**Conclusion**

This study has demonstrated that non-Black individuals on social media are using AAE features even though they are likely not L1 AAE speakers in the comedic realms of the internet, specifically on the comment sections of meme pages on Instagram. While this usage of AAE may happen unprompted, it seems that there is more willingness to use AAE in comments if the context of the original post involves a Black person or AAE. This usage of AAE depends on non-Black individuals’ stereotypical perception of what the language sounds like and can sometimes end in certain features being selectively chosen and employed without employing other features typically found in AAE. Non-Black individuals seem to be using AAE inauthentically, performatively, and jokingly to fit in with the Instagram meme community, possibly due to AAE alone being found to be humorous to said community, especially when the meme they are discussing involves a Black individual or AAE.

**References**


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Sociolinguistic Variation of Se Lo(s) in Mexican Spanish:
A Corpus-based Approach to Selosismo in Flux

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Introduction

One of the most striking morphosyntactic variations in Spanish clitics is the selosismo construction, a phenomenon recently studied by Schwenter and Hoff (2021). Although various names have been proposed for the clitic phenomenon such as the “se los construction” (Schwenter & Hoff 2021), “cannibalistic datives” (Company 1998), and “floating plurals” (Kailuweit 2006), selosismo is the term I will use hereon, inspired by and in keeping with other Spanish clitic variations such as leísmo, loísmo, and laísmo as well as other syntactic phenomena like dequeísmo and queísmo. The present study will use selasismo to refer only to ‘se las’; selosismo will refer to both non-normative use of ‘se los’ and ‘se las’ unless otherwise specified to be only referring to ‘se los’.

In summary, selosismo can be described as a ditransitive clitic cluster (Schwenter & Hoff 2021) that occurs with a plural indirect object (IO) referent encoded by the dative pronoun se, and a singular direct object (DO) referent encoded by the accusative pronoun los (or las). The non-standard feature of this construction is the use of the plural accusative clitic although the DO referent is singular (Schwenter & Hoff 2021:47-48). Thus,

(1) Les dije el plan [a ellos]
    3PL.DAT tell-1SG.PRET the plan [to 3PL.NOM]
    ‘I told them the plan’

which can be pronominalized under normative grammar to:

(2) se lo dije
    3PL.DAT 3SG.ACC tell-1SG.PRET
    ‘I told them it’

is interchangeable (and often in free variation/election) with:

(3) se los dije
    3PL.DAT 3PL.ACC tell-1SG.PRET
    ‘I told them it’
being the normative construction and (3) being the marked proclitic *selosismo* construction.

The two forms, normative and *selosismo*, in Mexico, have apparently undergone neutralization in discourse (Sankoff 1988) meaning that, to many speakers, they are no longer distinguishable. In fact, Schwenter and Hoff (2021) find that *se los* is the more common variety when the IO referent is plural, chosen 72% of the time. Because both *selosismo* and the normative construction are viable ways to express what are oftentimes the same semantically indistinguishable concepts, I argue that the alternation is a situation of free variation.

The form always appears with ditransitive verbs as well as verbs made ditransitive for stylistic emphasis because they allow/require a dative object as well as an accusative object to be expressed via clitics. Ditransitive verbs in Spanish include, *decir* [to say], *llevar* [to bring], *dar* [to give], *preguntar* [to ask] and so on. A token of *selosismo* from the present study is as such:

(4) \[ Pregúnt-a-se-los a los de dinero qué \]
    \[ Ask\-IMP\.-2SG\.-3PL\.-DAT\.-1SG\.-ACC \thinspace \text{to} \thinspace \text{those} \thinspace \text{of} \thinspace \text{money} \thinspace \text{what} \]
    \[ frustración tienen \]
    \[ frustration \thinspace \text{have-3PL\.-PRES} \]
    ‘Ask those with money what frustrations they have.’
    (Moreno-Fernández 2005)

The dative *se* refers to the unspecified object “they” and the accusative *lo* refers to what is being asked; the English equivalent being the pronoun “it”. Evidently, the -s morpheme being attached to the accusative DO (*los*) is an expression of the plurality of the dative IO’s referent; an expression desired because of the ambiguous plurality of *se* (Kany, 1945). It is this adoption of the role of plural expression by the DO that leads Company (1998) to dub them “cannibalistic datives”.

*Selosismo* is an important and culturally significant marker of the greater Mexican-Spanish dialect. However, although this study focuses only on Mexican Spanish, the dialect most famous (and most investigated) for its *selosismo*, it is worth noting that many other American-Spanish dialects employ the construction to a certain degree, including but not limited to, Costa Rican, Argentinian, and Chilean Spanish (Schwenter & Hoff, 2021). Moreno de Alba writes that *selosismo* is not produced in European Spanish claiming that
“in Spain one does not say, much less write, _se los dije (a ellos)_ but instead _se lo dije (a ellos)_” (2013:150). This belief could be attributed to the frequent use of the second person plural _vosotros_, in which case _se lo_ can be replaced by _os lo_, and because the _os_ is already undeniably coded as second person plural, there is no need to express plurality via _selosismo_. However, _selosismo_ is certainly not impossible in European Spanish and is occasionally observed as the 3rd person plural is used in formal address. The goal of this study is to explore the sociolinguistic variables that govern the use of this variation within the naturally occurring speech of Mexican Spanish. In the following section, previous literature will be reviewed. In section 2, research questions and hypothesis will be outlined, followed by sections on methodology, results, and points of discussion.

1 Previous Literature

Previous literature has been widely descriptive or structurally analytic, exploring the variable itself and/or its variable constraints without touching on social predictors. For example, the aforementioned 2021 article by Hoff and Schwenter is the first structural article of its kind on _selosismo_, exploring the “linguistic factors that condition [the] variable” (52). They find that the selection of either the normative or non-normative structure is most strongly predicted by the topic relevancy and recency of the referent within the conversation. They also propose that, because of the already “low number of ditransitive verbs in the language” that _selosismo_ is applied most commonly to a few number of high-frequency verbs such as _llevar_ and _decir_ (e.g., _se los llevó_), creating near-fixed expressions.

Moreno de Alba (2013) provides an impressively extensive explanation of _selosismo_, especially with respect to the effect of grammatical gender of both the dative and accusative referent, providing special attention to _selasismo_ in particular. This study is also one of the few that mentions sociological predictors, however, as Moreno de Alba (2013) mentions, the data he used, collected from the _Atlas Lingüístico de México_, is debatably valid because of the data collection methods used by the corpus; direct questions on the construction were likely made to the subjects, evidenced by the fact that 50% of subjects gave the “canonical” or normative answer. However, this does have interesting repercussions when analyzed as an unintended quasi-social acceptability judgement task, revealing possible stigmatization. Other attempted analysis on other corpus of written and speech data resulted in a higher percentage of the non-normative construction, but a low total number of overall tokens.
The present study attempts to provide a preliminary analysis of selosismo in naturally occurring speech, answer similar research questions to those of Moreno de Alba (2013), and validate claims such as those by the Real Academia Española (2005) that selosismo “se extiende progresivamente… a los registros cultos [is progressively spreading…to formal registers]” (2005:529).

2 Research Questions and Hypotheses

Building upon previous investigations into selosismo, this research aims to answer the following research questions; (i) What social predictors/variables (if any) condition the use of the selosismo construction? (ii) Is the variation in the expression of se los conditioned similarly among the five dialectal regions of Mexico that were analyzed? And (iii) what can the social predictors tell us about the evolution and future spread of this construction?

Regarding these research questions, I offer the following hypotheses: Because of the construction’s non-standard quality, I hypothesize that it will be more frequently employed in more rural regions (e.g. Mexicali) as compared to dense urban centers of power and population (e.g. Mexico City) (Hägerstrand 1967). I also hypothesize that low employment of the construction will be shown by individuals with a higher level of education (Labov 2006), women, who tend to favor more prestigious variants (Medina-Rivera 2011; Labov 1972), and middle-aged individuals, who tend to use stigmatized non-standard variants less than their younger and older counterparts (Labov 1966). Lastly, because of the theory of urbanization, the observation that urban varieties tend to extend outwards to rural areas, I predict a certain degree of dialect leveling in which the selosismo construction is dying out or being further stigmatized with evidence supported by the social predictors (Labov 1972).

3 Methodology & Corpus

To investigate these research questions, naturally occurring speech was retrieved using corpus data. The comparative variationist method (Schwenter 2011; Tagliamonte 2002), the comparison of different social groups to describe and observe variation, is also utilized to forecast the future extension or diminution of the variable.

The data for the quantitative analysis comes from the Proyecto para el estudio sociolingüístico del español de España y de América (PRESEA) (Moreno-Fernández 2005). The PRESEA corpus consists of spontaneous speech data obtained using the sociolinguistic interview technique (Labov 1984) in a conversation between a researcher and a native local interlocutor. Independent variables that were coded to determine their
significance in predicting the choice to use *selosismo* include speaker’s origin city, age of speaker, and level of education. Although not an exhaustive representation of all Mexican dialects, all speakers (N=90) from all five Mexican cities included in the corpus were considered in this study; the cities were Puebla, Mexico City, Mexicali, Guadalajara, and Monterrey. The other independent variables considered as designated by the corpus include (i) gender, (ii) age group: generation one (20-34 years old), generation two (35-54), and generation three (55+), and (iii) level of education: low level of education with up to six years of formal instruction, intermediate level with more than 6 years of formal instruction but less than a university education, and high level of education with a university education.

From the 90 total informants, all 492 tokens of proclitic *se lo, se los, se la,* and *se las* were extracted as well as enclitic *-selo, -selos, -sela, -selas.* The subsample from which tokens of *se lo/a(s)* and *-selo/s(s)* were observed included the speech from 40 men and 39 women (Table 1), meaning 11 informants did not use *se lo/a(s)*, *-selo/s(s)*, nor *selosismo.*

Table 1. Distribution of the sample with respect to level of education, gender, and age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Level of Education</th>
<th>20-34 years old</th>
<th>35-54 years old</th>
<th>55+ years old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>High</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Medium</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Low</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Totals</td>
<td>14</td>
<td>13</td>
<td>12</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

3.1 Coding of Predictors & Statistical Methods

With regard to the dependent variable, all occurrences of *se los, se las, -selos,* and *-selas* whose DO was singular and IO was simultaneously plural were considered tokens of *selosismo* and coded as 1. All others were coded as 0. Tokens were determined based upon the conversational context. If context and therefore plurality could not be determined from the discourse, the token was coded as 0.

Statistical analysis was performed using Jamovi (Love et al. 2021), a computer program utilized to execute variable rule analysis. After determining it was the best way to test the relationship between the included categorical variables, the chosen statistical analysis was a chi squared test of association with independent samples. In all cases of statistical significance, a Fisher’s exact test was used. The Fisher’s exact test is used in
identifying nonrandom associations between two categorical variables with small sample sizes, making it ideal for this study.

4 Results

Social predictors were used to track the general trend of *selosismo* throughout Mexico without consideration for region to increase token sizes and thereby statistical reliability.

Regarding generation, no statistically significant difference was found to support age on its own predicting use of the construction. However, after running a chi squared test, belonging to the 3rd generation (55+ y/o) and simultaneously having a high level of education results in a statistically significant rate of *selosismo* expression with a P-value of .016. Significance was confirmed by a Fisher's exact test.

Age, level of education, and gender alone were not found to be a significant predictors when combined with any single additional variable. However, when all three are combined, being a male of low or high level of education (but not medium) was found to be statistically significant in predicting high levels of *selosismo* use with p-values of .038 and .008, respectively (Table 2). Likewise, men of the third generation (55+ y/o) were found to use *selosismo* at statistically significant high comparative rates with a p-value of .011. When all three variables; gender, age, and level of education, were combined, being of the third generation (55+ y/o) (regardless of gender) was found to be significant overall with a p-value of .048.

Table 2. $\chi^2$ Test of level of education and gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Level of Education</th>
<th>Value</th>
<th>df</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Low</td>
<td>$\chi^2$</td>
<td>6.527</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fisher's exact test</td>
<td></td>
<td>0.037</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td>$\chi^2$</td>
<td>0.559</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fisher's exact test</td>
<td></td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>$\chi^2$</td>
<td>9.634</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fisher’s exact test</td>
<td></td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$\chi^2$</td>
<td>1.767</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fisher’s exact test</td>
<td></td>
<td>0.381</td>
<td></td>
</tr>
</tbody>
</table>
4.1 Regional Predictors

After running the chi squared test of association, city was found not to be a statistically significant determining predictor of the use of selosismo on its own, nor when combined with other social factors. It is, however, interesting to look at the different percentages in employment between the cities. Speakers within central Mexico, cities like Mexico City and Puebla, employ selosismo at over double the rate of speakers in Mexicali, a northern Mexico/United States border city (Figure 1).

Figure 1. Percentage use of selosismo by city

Because Mexico City is a center of population and political power, a non-standard variety being used with such frequency at 10.9% may suggest that selosismo is not stigmatized or that it is a marker of prestige (Trudgill 1972). However, this is not corroborated by the data when combined with level of education which shows that, although selosismo is used at comparatively higher rates overall within Mexico City and Puebla, the demographics with lower to intermediate levels of education are disproportionately using selosismo at high rates. Looking at averages between both Mexico City and Puebla, the individuals with a low level of education employ selosismo at 13.6%; compare to 4.15% for the high level of education group. This can be possible evidence towards stigmatization when considering the middle-class crossover effect (Labov 2006), explained in depth in the discussion section. However, this city-based claim of stigmatization is to be taken with a grain of salt due to the lack of statistical significance; more data is required to support such a conclusion.

5 Discussion

Overall, the people who used selosismo the most were 1st generation (20-34 y/o) men with high levels of education, 3rd generation (55+ y/o) women with an intermediate level of education, 1st generation (20-34 y/o) men with low levels of education, and 2nd generation
(35-54 y/o) women with low levels of education. If we consider these data, it is striking that no middle-aged individuals with a medium level of education regardless of gender are represented within the demographics. In fact, four of the five groups that showed no *selosismo* within their samples were those of the 1st generation (20-34 y/o) with a medium level of education regardless of gender and 2nd generation (20-34 y/o) with a high level of education regardless of gender. This suggests both that the middle class and the middle age group are independently generally avoiding *selosismo*.

Medium level of education has the lowest percentage of *selosismo* at 7.2% (compare to 8.3% for low level and 8.06% for high level) (Figure 2); the middle-age group also has the lowest percentage of *selosismo* of all generations at 6.99% (compare to 7.2% for generation one and 10.1% for generation three). This could possibly reflect what is known as the “middle class crossover effect” (Labov 2006).

![Figure 2. Percentage use of selosismo by level of education](image)

This effect, first described by Labov (1972, 2006) shows that the lower-middle class oftentimes tries to emulate the speech of higher classes but frequently overshoots in their production resulting in hypercorrection. This can also be applied to age groups being that self-correction by part of the generational groups most active in public life is common, and the groups of intermediate age (25-55 years) frequently present higher levels of self-correction (Silva-Corvalán & Enrique-Arias 2017). And even though the data collection attempts to elicit the most natural speech possible, the observer’s paradox can still influence production, encouraging the middle class and intermediate age groups to use less stigmatized variants. Furthermore, out of all groups, the middle age group had the highest number of speakers who showed no use of any *se lo/a(s)* in any form. The avoidance of *selosismo* by middle-aged and intermediately educated individuals suggests that *selosismo* may be subliminally stigmatized to some extent throughout Mexico.

This is also corroborated by the statistical significance data which show that being a male of low or high education or being of 3rd generation (55+ y/o) and high education...
predicts a statistically high use of the nonstandard variant, possibly because these groups face less societal pressure to conform to more “prestigious” variants (Labov 2006).

Furthermore, when we analyze age under the lens of “apparent time theory” (Magué 2006), it is also possible that the variant is diminishing and becoming stigmatized as shown by the generational data. This theory assumes that the linguistic features acquired during youth remain stable throughout life, making one’s speech a snapshot of the linguistics of the time when they acquired language. Therefore, if we assume the second generation is avoiding selosismo due to stigmatization, using the construction only 6.99% of the time, the age group that uses it second-least is the 1st generation with a frequency of 7.2%. This shows that even without the societal pressure placed upon them that the 2nd generation experiences, the 1st generation is still employing selosismo less, implying that, because of the variant’s non-standard and stigmatized characteristic, it is falling out of use among the younger generations. This can be described as dialect leveling or language standardization. Furthermore, because we know that broadcast mediums such as radio, television, and social media tend to perpetrate a prestige dialect (Silva-Corvalán & Enrique-Arias 2017), although not tested in the present study, I plant the hypothesis that the decrease in selosismo can be attributed to the rise in mass international communication.

6 Conclusion

The hypotheses regarding stigmatization seems to have been supported by the social predictors, which suggested that selosismo is in decline along the generations. This is potentially due to the influence of prestige dialect in mass media giving the variety a stigmatized character. The hypothesis that selosismo would be less utilized in population centers was unsupported given that in Mexico City and Puebla (centers of the prestigious central-Mexican dialect) the non-standard variety was used with the highest frequency. This does not, however, fully discredit the stigmatization claim as the individuals with higher overt prestige avoided use of selosismo; furthermore, sample sizes are low within very specific sociolinguistic demographics when analyzing individual cities, resulting in the need for more data and more reliance on the country-wide analysis.

This study did not incorporate any social nor grammatical acceptability judgement task which could potentially give a clearer picture of the linguistic ideologies attached to selosismo. Also, although the Sociolinguistic Interview technique (Labov 1894) was used by the corpus to attempt to capture the most naturalistic speech possible, because the interviews were conducted by a researcher, it is possible that a more formal register was
elicited. Therefore, it would be interesting to see how the percent in selosismo expression might change with different interlocutors, providing information on the variety's prestige.

This study is preliminary, and because of a less than ideal sample size, results are to be considered provisional. It can, however, give us a look into the interesting variation of one of the most iconic morphosyntactic features of Mexican speech, a feature with an uncertain future but an undeniable past and present cultural significance.

References


Selosismo in Mexico

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Causatives of unergatives in Hindi-Urdu*

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1 Introduction

It is a widely known generalization that in many languages, including English, direct causatives can be formed only from unaccusatives, as in (1), but not from unergatives, as in (2) (Schäfer 2009):\(^1\)

\[(1) \begin{align*}
a. & \text{The door opens.} \\ 
b. & \text{Shama opens the door.}
\end{align*}\]

\[(2) \begin{align*}
a. & \text{Rohan is laughing.} \\ 
b. & *\text{Shama is laughing Rohan.}
\end{align*}\]

Example (1) presents a standard causative-inchoative alternation: the unaccusative in (1a) can be causativized to form the transitive in (1b), with the newly introduced causer\(^2\) being interpreted as bringing about the event described by the intransitive. On the other hand, the unergative in (2a) resists causativization: (2b) cannot be used to express that Shama is making Rohan laugh.

Given that direct causatives do not introduce a separate causing event, the ungrammaticality of (2b) is as expected. Example (2a) describes a laughing event which – since the verb is an unergative – must involve an agent, in this case Rohan. Causativizing this construction entails the addition of another agent argument, such as Shama in (2b). This results

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*\(^1\)I would like to thank Rajesh Bhatt, Faruk Akkuş, the audience at ALC16 and two anonymous reviewers for helpful questions and comments.

\(^2\)Glossing conventions: AOR = aorist, DAT = dative, DOM = differential object marker, ERG = ergative, F = feminine, FUT = future, INST = instrumental, M = masculine, NOM = nominative, PASS = passive, PFV = perfective, PL = plural, PROG = progressive, PRS = present, SG = singular, SUBJ = subjunctive.

\(^*\)I use the term ‘causer’ to refer to the agent of a causative. This is not to be confounded with inanimate causers (as opposed to animate agents), as in The storm shattered the window.
in an event description with two distinct agents, causing the derivation to crash semantically
and/or syntactically.

This paper is concerned with apparent violations of the above generalization: some lan-
guages do, in fact, form direct causatives based on roots which commonly have an unerga-
tive use. In particular, I will present and discuss examples from Hindi-Urdu. Judging from
preliminary investigations, the same facts can be observed in Turkish and Sason Arabic.

To begin with a brief overview over the relevant data, example (3) from Hindi-Urdu
demonstrates a causative alternation involving an unergative:

(3) a. Rohan naach raha hai.
   Rohan.M dance PROG.MSG be.PRS.3MSG
   ‘Rohan is dancing.’

b. Shama Rohan-ko nach-aa rahl hai.
   Shama.F Rohan-DOM dance-AA PROG.F be.PRS.3MSG
   ‘Shama is making Rohan dance/twirling him around (the dance floor).’

(Bhatt and Embick 2017:124)

Other examples of this alternation include ‘jump’ – ‘make s.o. jump,’ ‘walk, wander’ –
‘cause to walk, walk s.o.,” ‘laugh’ – ‘make s.o. laugh’ and ‘move’ – ‘remove’ (Bhatt and
Embick 2017:121). Overall, the vast majority of unergatives in Hindi-Urdu causativizes.

Morphologically, these causatives of unergatives are formed with the suffix -aa, equally
used to derive direct causatives of many unaccusatives, as in jaag-aa-naa (‘to wake some-
one up”), related to jaag-naa (‘to wake up,’ intransitive) (Bhatt and Embick 2017:112).3

Direct and indirect causatives in Hindi-Urdu are distinguished by their morphological mark-
ing: causatives ending on -aa receive a direct reading, meaning that the causer is interpreted
as physically acting on the causee in an unmediated way,4 whereas causatives marked with
the morpheme -vaa are interpreted as indirect, obligatorily involving an intermediate agent
which can but does not have to be overt. Accordingly, an intermediate agent is only felici-
tous with indirect -vaa causatives, as demonstrated in (4):

---

3Direct causatives of certain unaccusatives can also be formed by changing the vowel length of the root;
since this causativization strategy is not relevant for our purposes, I will disregard it in the following.

4A curious exception to this rule is the fact that certain transitives can combine with the -aa morpheme
to yield indirect causatives semantically identical to the corresponding -vaa causatives, demonstrated by their
ability to surface with an intermediate agent (Bhatt and Embick 2017:139). While this is a morphological
puzzle for which I do not have a solution, it does not affect the fact that, as seen in (4), -aa causatives of
unergatives cannot have an indirect interpretation, categorically resisting intermediate agents.
   Shama Mina-INST Rohan-DOM \textit{dance-V AA}-FUT.F  
   ‘Shama lets Mina make Rohan dance.’

   Shama Mina-INST Rohan-DOM \textit{dance-AA}-FUT.F  
   Intended: ‘Shama lets Mina make Rohan dance.’

More evidence for the fact that \textit{-aa} causatives of unergatives are direct causatives comes from adverbial modification. In the direct causative in (5a), the modifier ‘in a strange way’ has a single reading and describes the way in which Shama is acting to make Rohan dance, indicating that the adverbial can only target a single event. This contrasts with the behavior of modifiers with \textit{-vaa} causatives, which can either target the main clause event, as in (5b), or, with a different word order, the embedded event, as in (5c):

(5) a. Shama Rohan-ko \textit{ajiib tarah(-se) nach-aa} rahii hai.  
   Shama Rohan-DOM \textit{strange way-INST dance-A A} PROG.F be.PRS.3MSG  
   ‘Shama is making Rohan dance in a strange way.’

b. Shama-ne \textit{ajiib tarah(-se) Mina-se Rohan-ko nach-vaa}-yaa.  
   Shama-ERG \textit{strange way-INST Mina-INST Rohan-DOM dance-V AA-PFV}  
   ‘Shama, in a strange way, lets Mina make Rohan dance.’

c. Shama-ne Mina-se Rohan-ko \textit{ajiib tarah(-se) nach-vaa}-yaa.  
   Shama-ERG Mina-INST Rohan-DOM \textit{strange way-INST dance-V AA-PFV}  
   ‘Shama lets Mina make Rohan dance in a strange way.’

In (5b), Shama is acting strangely, whereas in (5c), Mina is. I thus conclude from the contrast in (5) that \textit{-aa} causatives of unergatives are direct and do not contain a separate causing event.

Finally, we can confirm that the verbs in question normally behave as unergatives, passing standard diagnostics. For instance, as exemplified in (6), they are unable to appear in reduced relatives, which do not tolerate external arguments (Embick 2004; see also Bhatt and Embick 2017:121–123 for further evidence for the unergative status of these verbs):

(6) a. *\textit{hâs-aa huaa larkaa}  
   \textit{laugh-PFV be-PFV boy}  
   *‘the laughed boy’

b. \textit{khul-aa huaa darwaazaa}  
   \textit{open-PFV be.PFV door}  
   ‘the opened door’
In sum, the data surveyed so far indicate that direct causatives of unergatives, unavailable in English, are in fact attested in Hindi-Urdu. My goal in this paper is thus to understand the syntax and semantics of these constructions and to account for the fact that they are licensed in Hindi-Urdu but not in English. After developing an analysis of direct causatives of unergatives in Section 2, I will then further motivate my proposal by putting it in the context of variable unaccusativity in Section 3. Section 4 discusses remaining questions and challenges, and Section 5 concludes.

2 The proposal: direct causatives of unergatives are transitives

The analysis I will defend in this paper is that causatives of unergatives such as (3b) are syntactically simple transitives, structurally identical to standard causatives such as *Shama opens the door*. Crucially, while in the intransitive unergative, the sole argument is merged as an external argument, in the causative variant, it is instead generated in the position of an internal argument. This frees up the slot in SpecVoiceP where the newly introduced causer can now be merged instead. Concretely, I thus assume the structure in (7):\(^5\)

\[
(7) \quad \text{VoiceP} \\
\quad \text{VoiceP} \\
\quad \text{DP} \quad \text{vP} \quad \text{Voice} \\
\quad \text{Shama} \quad \text{v} \quad \text{Rohan} \\
\quad \text{v} \\
\quad \text{dance} \\
\]

This analysis is supported by a number of observations. First, the causee obligatorily receives a deagentivized interpretation, being depicted as not being in control of the event or even performing the activity against their will. For instance, in (3b), Rohan does not himself voluntarily initiate the dancing process but is passively being twirled around the dance floor. This is hardly compatible with the view that the causee is merged in SpecVoiceP, a position canonically associated with an intentional, volitional interpretation, but rather suggests that the causee is realized as a complement of the verb, thus receiving a patient-

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\(^5\)I remain agnostic about the causative morpheme -"aa", which might be the spell-out of v or of Voice.
like interpretation.

Secondly, while plain unergatives cannot appear in reduced relatives, as already shown in (6), the causativized variants can, also indicating that the causee is realized as an internal argument:

(8) a. *daur-aa laṛkaa run-\(\text{FV.MSG}\) boy
   *
   ‘the run boy’

b. [Ravi-dwaaraa daur-aa-yaa gayaa] laṛkaa
   Ravi-by run-\(\text{AA-PFV}\) PASS.PFV boy
   ‘the boy run by Ravi’ (i.e., the boy chased by Ravi)

(Bhatt and Embick 2017:124f.)

Third, direct causatives cannot be formed of transitive verbs. This is as expected: in transitives, the position of the internal argument is already filled and cannot be occupied by the causee. Moreover, direct causatives are not possible with unergatives which take a path argument as in (9), equally because the internal argument position where the causee would be realized is blocked:

(9) a. Rohan tango naach rahaa hai.
   Rohan.M tango dance PROG.MSG be.PRS.3MSG
   ‘Rohan is dancing the tango.’

   Shama.F Rohan-ACC tango dance-AA PROG.F be.PRS.3MSG
   Intended: ‘Shama is making Rohan dance the tango.’

To conclude, there is solid evidence that direct causatives of unergatives are ordinary transitives, with the causee being merged as an internal argument. Besides being empirically adequate, this analysis has the benefit of being simple and economical. However, it also raises obvious questions: unergative verbs should by definition be unable to take a patient-type internal argument, and it is unclear how an event participant could be the patient of a dancing, jumping or laughing event. In the following section, I will make the case

\footnote{An exception to this claim is the class of so-called ingesto-reflexives, which are transitive verbs that do permit direct causatives. While considerations of space do not permit a more detailed analysis here, there is strong evidence that the resulting causatives are realized as ditransitives (Bhatt and Embick 2017:126–131), such that the causee – which receives dative case – is merged in an argument position introduced by an applicative head and receives the \(\theta\)-role of a goal or experiencer. As a result, the causee does not compete with the direct object for the internal argument position. Causatives of ingesto-reflexives are thus fully compatible with the approach proposed here.}
that these problems vanish once we consider causatives of unergatives as part of the broader phenomenon of variable unaccusativity.

3 The bigger picture: variable unaccusativity

I argue that we can make sense of direct causatives of unergatives by assuming that in Hindi-Urdu, unergatives are coerced into an unaccusative behavior in causative contexts. I will first introduce the phenomenon of variable unaccusativity in general and then return to the Hindi-Urdu data to show that they fit neatly into the picture.

It is cross-linguistically common for verbs to vary between an unergative and an unaccusative use, which is often associated with certain changes to the interpretation of the argument or the verb phrase as a whole (Levin and Rappaport Hovav 1995). In particular, Sorace (2011) has shown that the two decisive factors governing variable unaccusativity are telicity and agentivity: on the one hand, a verb phrase receiving a telic interpretation is more likely to have an unaccusative structure; on the other, the more agentive an argument is, the more likely it is to be realized in the external argument position, thus leading to an unergative structure. It is the latter case that will be relevant for our analysis of direct causatives of unergatives.

An example of the effect of agentivity on variable unaccusativity is given in (10). In the ergative language Tsova-Tush, some verbs that take a single argument are able to mark their argument either with ergative or with absolutive case depending on the degree of intentionality ascribed to the event participant:

\[(10)\]
\[
\begin{align*}
\text{a. (as) } & \text{vuiž-n-as.} \\
& 1\text{SG.ERG fell.AOR-1SG.ERG} \\
& \text{‘I fell down, on purpose.’}
\end{align*}
\]

\[
\begin{align*}
\text{b. so } & \text{vož-en-sO.} \\
& 1\text{SG.NOM fell.AOR-1SG.NOM} \\
& \text{‘I fell down, by accident.’ (Holisky 1987:105)}
\end{align*}
\]

In (10a), the sole argument bears ergative case, indicating that it is merged as an external argument. As a result, it receives an agentive, volitional interpretation of someone having performed the action of falling intentionally. In (10b), by contrast, the argument is marked with nominative case and thus has the status of an internal argument which is interpreted as a patient: someone who has undergone a falling against their will.
Hence, reduced or enhanced agentivity has been shown independently to allow verbs to vary between an unergative and an unaccusative use. I argue that the very same phenomenon can be observed in direct causatives of unergatives: in the causative variant, the causee receives a deagentivized interpretation and is thus realized as an internal instead of as an external argument. The resulting unaccusative structure can then regularly undergo the causative alternation. Thus, the view that verbs such as ‘dance’ can combine with a patient-type argument is only counterintuitive as long as we maintain a strict division between unergative and unaccusative verbs, known to be untenable.

Regarding direct causatives of unergatives as an instance of variable unaccusativity also allows us to understand the curious misalignment between the interpretation of the base unergative and the causativized variant: taking the verb ‘dance’ as an example, in the intransitive, it is the event participant denoted by the external argument who is interpreted as the dancer, but in the causative, it is the participant corresponding to the internal argument. However, as (10) demonstrates, there is nothing surprising about the fact that an event participant can be interpreted as performing the same action regardless of whether the relevant argument is merged in the external or the internal position. What matters is whether the action is performed in a more agent- or more patient-like way. Hence, while the base unergative of a verb like ‘dance’ denotes an event with a single agentive participant, namely the dancer, the causative denotes an event with two participants such that the dancer now has more patient-like properties compared to the volitional instigator of the dancing.

In sum, I propose that Hindi-Urdu unergatives can causativize by virtue of taking on an unaccusative use in causative contexts, such that the causee is deagentivized and receives a patient $\theta$-role instead. This approach presupposes a view on argument structure, backed by independent evidence, according to which verbs are not intrinsically unergative or unaccusative, either allowing or not allowing certain kinds of arguments, but can vary between the two behaviors. However, my analysis of causatives of unergatives also raises further questions, which I discuss in the next section.

4 The remaining challenge: restricting variable unaccusativity

There are two ways in which the proposal outlined so far appears to overgenerate. First, the ability of Hindi-Urdu unergatives to be used as unaccusatives must be restricted to specific
contexts such as causatives. Secondly, we must explain why other languages do not seem to license variable unaccusativity in causative environments. I will now discuss each of these challenges in turn.

Variable unaccusativity in Hindi-Urdu is limited to specific syntactic and semantic contexts. As demonstrated in Sections 1 and 2, unergatives lacking the causative morpheme -aa fail to pass unaccusativity diagnostics and show only standard unergative behavior, suggesting that outside of causatives, unergatives cannot be coerced into an unaccusative use. More precisely, however, causatives are not the only context licensing variable unaccusativity, as (11) demonstrates:

(11) a. *ur-ii (huu-ii) ciryaa
    fly-PERF.F.SG be-PERF.F.SG bird.F.SG
    Intended: ‘the flown bird’

b. ur-ii (huu-ii) patang
    fly-PERF.F.SG be-PERF.F.SG kite.F.SG
    ‘the flown kite’ (Ahmed 2010:8f.)

While the reduced relative in (11a) is, as expected, ungrammatical, (11b), containing an inanimate argument, is grammatical. This indicates that inanimate arguments, inviting a non-intentional, patient-like construal, prefer to be merged as internal arguments, thereby being able to shift the verb from an unergative to an unaccusative use. In sum, while it is in principle possible for Hindi-Urdu unergatives to behave as unaccusatives, this must be licensed by specific contextual triggers, such as causative contexts or inanimate arguments. The general question this raises is thus how the specific contexts which license variable behavior of verbs are encoded in the speakers’ grammar.

Furthermore, these contexts also differ cross-linguistically. We have seen above that Tsova-Tush allows variable unaccusativity more freely than Hindi-Urdu. English, on the other hand, does not allow unergatives to behave as unaccusatives in causative contexts across the board, accounting for the ungrammaticality of *Shama is laughing Rohan. However, one might argue that it does permit the very same variable behavior in a proper subset of contexts, as in the following examples:

(12) a. Shama is dancing Rohan *(across the hall).

b. The general marched the soldiers *(to the battlefield).
Directed motion verbs in English have long been argued to have both an unergative and an unaccusative use, with the latter being licensed only under certain circumstances (Levin and Rappaport Hovav 1995, Biggs 2019). While I cannot spell out the details of the relevant proposals here, what matters for our purposes is that Hindi-Urdu and English both allow normally unergative verbs to be used as unaccusatives (and presumably vice versa) but both restrict this variability to certain environments. Overall, while arguably all languages allow for variable unaccusativity, the conditions which license this fluidity differ cross-linguistically.

Hence, what a successful theory of argument structure needs to deliver is a way to encode in the knowledge of a speaker of a given language not only whether a verb is unergative or unaccusative but rather how felicitous each of the two usages is for each verb in which concrete contexts. Currently, we do not have a framework that lives up to this challenge. On the one hand, there is an emerging consensus in the literature that the unaccusativity/unergativity status of a verb cannot simply be listed in the lexicon, which would create rampant redundancy and also fails to account for the fact that, as exemplified above, the behavior of a verb is sensitive to its syntactic and semantic context. On the other hand, the neo-constructionist strategy of allowing all verbs to merge freely in the syntax and appealing to world knowledge to rule out ungrammatical structures cannot straightforwardly deal with the fact that argument-structural restrictions are often language-specific: if a verb shows variable behavior in one language but not another, or simply behaves as an unaccusative in one language and as an unergative in another, then this is not reducible to a universal fact about the world or the basics of human cognition but is a fact about particular languages. How to model these facts within a grammatical theory is still an outstanding task.

To conclude, the analysis of causatives of unergatives outlined above leaves the question open how to restrict variable unaccusativity both within a single language and cross-linguistically. However, this puzzle is not specific to the present proposal but haunts research on argument structure in general. Solving it is, unfortunately, far beyond the scope of this paper.
5 Summary

This paper has argued that unergatives in Hindi-Urdu can form direct causatives by being coerced into an unaccusative use in causative contexts, with the causative variant thus having a simple transitive structure. This is supported by both semantic and syntactic diagnostics and fits well into the broader picture of variable unaccusativity cross-linguistically. In consequence, the generalization outlined at the beginning of this paper that only unaccusatives can form direct causatives remains valid: the reason why unergatives in Hindi-Urdu can causativize is precisely that in these environments, they behave as unaccusatives.

References


