

UCSB McNair Scholars Research Journal



UNIVERSITY OF CALIFORNIA, SANTA BARBARA
2019 Volume 9

**UCSB McNair Scholars
Research Journal**

**University of California, Santa Barbara
2019 – Volume 9**

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McNair Program Staff

Program Director	Dr. Beth E. Schneider
Assistant Director	Dr. Yvette Martinez-Vu
Program Coordinator	Raquel Ramos
Graduate Mentors	Madeline Nolan Bertin Solis
Writing Consultant	Dr. Ellen Broidy
Journal Editors	Dr. Beth E. Schneider Dr. Ellen Broidy
Journal Layout/Design	Madeline Nolan

**UCSB McNair Scholars
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2019 - Volume 9

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Letter from Executive Vice Chancellor, David Marshall

I am very pleased to introduce Volume IX of the UC Santa Barbara *McNair Scholars Research Journal*. Named after Dr. Ronald E. McNair Jr., physicist and NASA astronaut, the national McNair Scholars Program is a program designed to provide research opportunities for first-generation college, low-income, and underrepresented undergraduates with the goal of preparing them for graduate school. Our local UC Santa Barbara McNair Scholars Program supports our campus efforts to advance the diversity and quality of our students, and to prepare them for success beyond their undergraduate experience. By combining undergraduate research with faculty mentoring and academic support services, the McNair Scholars Program provides a path to graduate school for students from families that in the past may not even have considered an undergraduate college education.

UC Santa Barbara is very proud to be an Hispanic Serving Institution. UCSB is the first member of the American Association of Universities (AAU)—an elite group of the 62 top research universities in North America—to receive this designation. As a public research university, UC Santa Barbara strives to support all of its students and to give them the knowledge, understanding, and skills to make contributions to the State of California.

The *McNair Scholars Research Journal* recognizes the research accomplishments of a select group of undergraduate scholars from a wide range of disciplines who have successfully completed our McNair Scholars Program. Their contributions to this journal represent the hard work and intellectual creativity of students who, we expect, will become leaders in their respective fields. In our program, students develop a strong bond with mentors who offer guidance and serve as role models in order to help them realize their potential. The journal also reflects the

contributions of the faculty mentors who exemplify the dedication of our campus to undergraduate success.

The quality, originality, and creativity of the scholarship published here are very impressive. This research augurs well for the future contributions of these students to scholarship and society. I congratulate the McNair Scholars, thank their faculty mentors, and extend my appreciation to the staff of the McNair Scholars Program for their dedication and work in helping these students succeed.

David Marshall
Executive Vice Chancellor

**Letter from Director of Undergraduate Research and
North Hall Endowed Chair in the Linguistics of
African America, Anne Charity Hudley**

Scholarly communication is the heart of research. In her poem entitled “A Higher Level of Poetry” Nikki Giovanni states: “There is really only one thing to say to young writers: Know who you are writing for and to.” Giovanni’s focus on making sure that you know “who you want to be proud of your work” is crucial to the idea of inclusion in research so that your families, communities, and others you care about and who can benefit from your work are part of the conversation.

Going through the academic publishing process can help scholars, particularly new scholars from backgrounds that are underrepresented in the academy, make decisions about what audiences they want to reach and what scholarly conversations they want to be a part of. Through their early experiences with the peer review process, new scholars get a sense if they will be more readily accepted into a particular conversation or if they will have to work to navigate towards acceptance. Scholars will also decide if that navigation toward that acceptance is worth it or if it is more fulfilling and more impactful to join another scholarly conversation, work to break into a conversation, or to create a new conversation altogether. Often, we find in underrepresented scholars, a mix of work towards all three objectives leads to success, justice, and joy.

The history of exclusion and discrimination in academic publishing means that much work has indeed gone unnoticed. This journal does its part to address and repair that great injustice. As the highest ranked and highest resourced Minority Serving Institution in the world, UCSB is poised through its scholarly communication, to change what conversations are being had in the academy in innovative and inclusive ways. The articles in this ninth

volume of the UCSB McNair Scholars Research Journal represent the best hope we have for the future of the research. It's an honor to read along as you lead the way.

As we launch the campus-wide UCSB Undergraduate Research and Creative Studies Journal (URCAJ) this spring, I call upon our past, present, and future McNair scholars to open their scholarly conversation up with our entire campus through the submission of two papers focused on their work in the McNair Scholars Research Journal and the Undergraduate Research and Creative Studies Journal. We need you and we are here for you.

Anne H. Charity Hudley
North Hall Endowed Chair in the Linguistics of
African America
Director of Undergraduate Research
UCSB

Letter from McNair Scholars Program Director, Dr. Beth Schneider

Volume IX of the UCSB McNair Scholars Research Journal is now in the hands of our students, alumni, faculty mentors, campus allies, and McNair colleagues in California and around the country. As the Director of the McNair Scholars Program since its inception, it is a pleasure to showcase the work of nine seniors this year. I will be retiring in 2019 after 38 years as faculty at UCSB, making Volume IX the last one I oversee as Director.

These scholars/authors spent close to two years with the UCSB McNair Scholars Program. Expectations we hold for the UCSB McNair scholars are high, and all these students met them, presenting their faculty-mentored scholarship at one McNair Scholars National Research Conference or at a professional conference in their discipline. They each offered two or three poster sessions in various venues. Eight of these authors will begin graduate training in Fall 2019 at major research universities across the country (Harvard University, New York University, University of Chicago, University of Illinois (Urbana-Champaign), Stanford, UCLA, UCR, and UCSB).

The papers published in Volume IX are the final versions of manuscripts our graduates were willing to see through to publication. They went the extra mile, writing and rewriting their research papers in response to a steady stream of comments from their mentors and the journal editors. As undergraduate research papers, we expect that these publications will be the first of many manuscripts published by these eight students during their graduate training and in their first academic positions.

The nine scholars whose work is featured in this issue displayed perseverance, patience, and diligence that will serve them exceedingly well in their continued professional

training. For all first-generation, low income, and underrepresented undergraduates, the existence of the journal and the labor that it represents will hopefully be an inspiration for themselves and others to seek research opportunities, develop successful mentorships, and take seriously a future in which the UCSB McNair Scholars Program played and continues to play an important part.

With special thanks to the UCSB McNair Scholars staff who help produce the journal, especially Dr. Ellen Broidy (writing consultant) and Maddie Nolan (graduate mentor), and congratulations to the scholars. I will surely miss this wonderful scholarly collaboration.

Beth E. Schneider
Professor of Sociology
Director, UCSB McNair Scholars Program

**Letter from the Editors,
Drs. Ellen Broidy and Beth E. Schneider**

The McNair Scholars Program at UCSB is pleased to bring you the ninth volume of the UCSB McNair Scholars Research Journal. A cooperative effort of faculty mentors, McNair staff, and most especially a dedicated cadre of student scholars, the journal represents months of research, writing, editing and reviewing on the part of all the participants.

For our scholars, preparation of their manuscripts for publication in the Journal begins as a challenging and ends as a rewarding experience. Novices when they start the process, the scholars embark on a year-long adventure in what it takes to produce academic work suitable for publication. With good humor and extraordinary patience and fortitude, they experience both the frustration of being asked to revise and revise again and the feeling of elation that comes with a final acceptance. Through this process, the McNair staff seeks to provide scholars with a practical hands-on introduction to the types of writing and revision expected of graduate students and academics.

Submission to the Journal is not a requirement of participation in the UCSB McNair Scholars Program so we are enormously gratified that a number of our students graduating in 2019 volunteered to allow their work to be put under the editorial microscope. While we would have liked 100% participation, previous publication arrangements with faculty mentors meant that some scholars were unable to submit their work. The scholars who did contribute worked diligently on their papers, rethinking, rewriting, reorganizing, and in some instances, reconceptualizing core ideas in response to comments from faculty mentors and the Journal's editors. We applaud them all for their hard work and commitment. We want to say a special thank you to the

faculty mentors who worked alongside the students to guide them in the production of such high caliber work.

We trust that you will enjoy reading the work of the UCSB McNair Scholars represented in the Journal. As retirement approaches, this volume marks the ninth and final one that we will be editing as a team. It has been a honor and privilege for us to present almost a decade's worth of high-level undergraduate scholarship. We know that the McNair staff, working collaboratively with others on campus, will continue to bring you the voices of new generations of scholars in subsequent volumes. We thank you on behalf of the authors, mentors, McNair staff, and editors who made this publication possible.

Best,

Ellen Broidy

Writing Consultant, UCSB McNair Scholars Program

Beth E. Schneider

Professor, Department of Sociology

Director, UCSB McNair Scholars Program

Phonetic Correlates of Primary Stress in Spoken Fijian

Steven Castro

Mentors: Dr. Marianne Mithun and Dr. Matthew Gordon
Department of Linguistics

Abstract

The purpose of this study is to further our understanding of the structure of the Fijian language. In this project, I examine data gathered from a fluent speaker and focus on analyzing the phonetic correlates of the Fijian stress system. I compare the pitch, intensity, and duration of the stressed syllables with those of unstressed syllables. The measurements are also compared to the syllables that are considered stressed by the stress rules in Fijian in order to match stressed syllables with their correlates. I analyzed these factors through acoustic analysis in Praat, an acoustic analysis program. I used words pronounced in isolation by the speaker. By analyzing these factors, I determined the phonetic correlates of stress and identified which ones are present in stressed environments compared to unstressed environments. This will give linguists a better understanding of how stress works in Fijian.

Introduction

This paper describes the phonetic correlates of primary stress in spoken Fijian. Stress patterns, and the way stress is formed, is an important aspect of a language because it is a significant part of the phonetic system and illustrates how the language is actually spoken. Along with the general principles of stress placement in the language and its functions, it is also important to pay attention to the phonetics that form the words. The phonetic properties or the phonetic correlates of stress are the foundational building blocks of sound which are the primary concern in this study. The project is part of a larger phonetic analysis of Fijian in which secondary stress will be described and other phonetic elements will be observed based on acoustic analysis.

The Fijian language has been documented, analyzed and explained in detail by both Albert Schütz and George Milner. Schütz compiled a detailed Fijian grammar which describes general phonetics, syntax, morphology, and the stress patterns, while also focusing on grammatical and structural rules. Despite the amount of work that has been done on Fijian, there has been little research specifically on the phonetics. I conducted my research in order to add information about the phonetic properties to the collection of Fijian research.

In order to understand the phonetic correlates of stress first we must define what stress is. Stress is an important part of a language but can be difficult to describe. There are several working definitions of stress proposed in both Milner's and Schütz's grammars. Milner describes stress as "the all-round energy we use in speaking, while volume may be defined as the degree of loudness employed" (Milner 1956: 2). This definition, however, limits stress to the degree of loudness or intensity. Schütz offers a more detailed description of stress. He defines stress as perceived

amplitude, which is how, with two adjacent syllables, one is perceived as louder than another Schütz (1985). The second definition is the more accurate definition because it states that stress must be compared to another syllable (unstressed) in order to hear a change in loudness. Schütz 's definition is the one that I will be using throughout this paper as a general definition. However, I will also aim to further define stress in Fijian, specifically in terms of its phonetic correlates.

With a working definition in place, it is also crucial to understand what the stress pattern is in order to look at the phonetic correlates of stress in Fijian. In his Fijian Grammar, Milner (1956) described the Fijian stress pattern in terms of the following principles:

1. All long syllables are stressed.
2. Words of two or three syllables are stressed on the last syllable but one
3. Words of four syllables have a main stress on the last syllable but one and a secondary stress on the first syllable.
4. Words of more than four syllables can be analyzed into component parts falling into the above categories

These previously mentioned stress principles have generally been ignored in the subsequent literature. The reasons are obscure according to Schütz (1999: 142). He explains that in the 1950s and 1960s linguists paid little attention to prosody, a long vowel interpreted as a geminate; making the rules regular was never adequately tested, and morphology was used to assume word boundaries of larger words in order to account for the stress of longer words (Schütz 1999: 142). Schütz provides English loan words as a counter to the last point.

Hayes (1995:142-147) also describes the stress pattern of Fijian in terms of rules. In *Metrical Stress Theory*, he discusses a series of case studies focusing on aspects of stress. According to Hayes, the stress pattern of Fijian follows three distinct rules:

1. If the final syllable is light, main stress falls on the penult.
2. If the final syllable is heavy, main stress falls on the final syllable.
3. Secondary stress falls on remaining heavy syllables, and on every other light syllable before another stress, counting from right to left.

Hayes explains that syllables in Fijian “take the form (C)V or (C)VV. C can be a prenasalized consonant: [mb], [nd], [ŋg], or [nr]... and VV may be a long vowel or diphthong. CVV syllables count as heavy, CV as light.” (1995: 141). His description of the Fijian stress system is generally agreed upon, though Schütz comments in his paper, “Fijian Accent,” that Hayes “set up the bimoraic foot as the primitive prosodic unit.” Schütz proposes instead a bimoraic and trimoraic foot as primitives. According to Schütz, the rules proposed by Hayes work only when roots are composed of a series of bimoraic feet (words such as *baka.baka*) and those beginning with a trimoraic foot followed by any number of bimoraic feet (words such as *ikawa.kawa*) (Schütz 1999: 143-144). A mora is a unit of timing in the sense that each mora is felt to have a beat that counts in rhythmic structure of a language (Ladefoged & Johnson 2015: pp). Secondary stress as proposed by Hayes marks Fijian as a language that has predictable primary stress but phonemic secondary stress (Hayes 1995: 144). The stress pattern Hayes proposed has been the generally accepted rule for the Fijian stress pattern.

There has been a significant amount of detailed documentation and analysis done by Schütz, Milner, and Hayes on Fijian and its stress patterns. However, there seems to be little information regarding the phonetic aspects of the language and, more specifically, the phonetic correlates of stress. Lastly, little research exists on the relation of primary stress to secondary stress and the differences or similarities between them. This study is an attempt to add new information regarding the phonetics and phonetic correlates of Fijian to the discussion about the language.

The phonetic correlates that this research project focuses on are: intensity, pitch, and duration. Intensity is described as perceived loudness of a sound, pitch as the quality of tone (high/low), and duration is simply the length of the utterance in seconds. Schütz explains that certain vowels will be louder in accented (stressed) position than those in unaccented (unstressed) position (Schütz 1985, 543). This provides a general theory that the intensity (loudness) will be higher among stressed syllables. However, there has not been a phonetic study to reinforce this or provide evidence for the other phonetic correlates such as pitch and duration. Schütz also states that in longer stretches of words there is a slightly higher pitch in accented syllables (Schütz 1985, 544). This statement is a generalization about pitch being higher in longer words; however, there are no phonetic values to reinforce the claim that pitch is in fact higher among accented (stressed) vowels. This project aims to provide information on the phonetic correlates of stress in Fijian. It marks the first time such a study has been done and will hopefully increase knowledge and understanding of Fijian.

Language Information

Fijian is an Austronesian language spoken on the island of Fiji in the South Pacific. There are roughly 650,000

speakers with about 330,000 of those speakers being L1 (native) speakers (Simons & Fenning 2018). It is also a Verb-Object-Subject (VOS) language and is written in the Latin script. Fijian is one of three national languages, along with English and Fijian Hindi.

The consonant inventory of Fijian as gathered from the speaker who was the source of my data is illustrated in **Table 1**. It is important to note that throughout the interviews the participant used the sounds /s/ and /ʃ/ interchangeably. This was seen in the word /satiko/ which on several occasions he also pronounced /ʃatiko/. The participant also possessed a trilled /R/ as well as the approximant /r/. While this consonant information does not directly correlate to the phonetic correlates of stress, it is important to take note of the consonant inventory of the language. Consonant inventory is necessary for accurate segmentation of words which will lead to more accurate values.

Table 1 Fijian consonants placed in a chart according to their place and manner of articulation

	Bilabial	Labio-Dental	Dental-Alveolar-Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t d			k g			
Nasal	m		n			ŋ			
Trill			r						
Trill or Flap			ɾ						
Fricative	β	v							
Approximant			ɹ						
Lateral Approximant			l						

*Note: When symbols appear in pairs the right one is considered voiced.

Data Collection/ Methods

The data was gathered from a fluent speaker of Fijian. The interview was conducted in a session lasting an hour during July of 2018. The participant chose to remain anonymous during the recording session. During the interview I posed questions in order to obtain background information about the speaker and his language history. The participant is multilingual with his known languages being Fijian, Punjabi, English, and Fijian Hindi.

The participant was asked object recognition, word elicitation, and sentence elicitation questions. Object recognition methods entailed asking him, in English, to name various objects and repeat them in Fijian. This method was used to ensure that he was familiar with the words being named. Only common objects such as fruits, table, chair, floor, and various objects on the table were used, in order to avoid confusion or misunderstanding. The speaker was also asked to identify basic body parts. He chose the body parts he wished to identify in order to confirm familiarity with the words. These words were pronounced in isolation in order to get a clear recording of individual words. Word elicitation methods were also used in order to gather more words based on those gathered previously through object recognition. Word elicitation methods were used with the expectation of obtaining a specific or one-word answer. After the word was said in Fijian the speaker provided a rough English translation.

Sentence elicitation was also used in order to gather more data. Sample questions such as: “What did you do today?”, “What are you going to do tomorrow?”, and “What do you like to do?” were used in order to gather more words in sentences as well as to obtain data to provide a phonological inventory. The speaker was also asked to formulate sentences of his own without being prompted by a

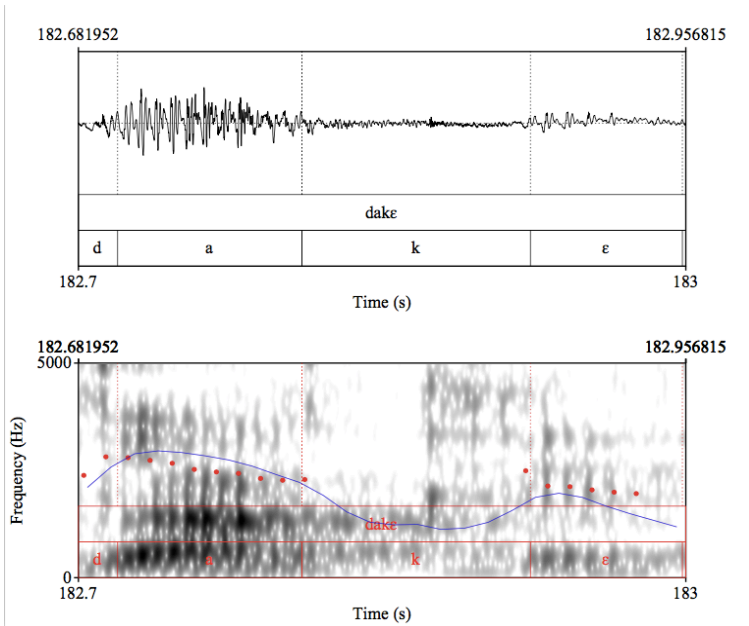
specific question. This method was used in order to allow the speaker to feel more comfortable and to avoid any misunderstanding of the questions or the desired responses between the speaker and interviewer. After the sentence was spoken in Fijian, the participant provided a free English translation. He was also asked to count from one to ten in Fijian. He complied, and then continued to count until he reached thirty. After thirty he provided increments of ten up to a hundred and then a thousand counting in Fijian and providing the English translation.

The data was recorded using a Blue “Snowball” USB microphone and Praat recording software. The data was then uploaded into the transcription software ELAN. In ELAN, the English portions of the recordings were entered in the standard orthography, and the Fijian portions were entered in the International Phonetic Alphabet (IPA). After the transcription of the Fijian data was completed, the recordings were then uploaded into the acoustic analysis software Praat. When uploading, the formant settings were set to a maximum formant value of 5500.0 Hz and a total of 5 formants, a window length of 0.025s and a dynamic range of 50.0 dB. This was to ensure clear visible formants for easier segmenting. The illustrations present in the paper are from Praat which show the waveform on the top (with a TextGrid) and the spectrogram on the bottom (shown with both a TextGrid and various lines).

The Praat program allowed for segmenting of the consonants and vowels using the waveforms as well as the spectrograms and vowel formants for the most accurate segmentation. Words with liquids or glides (sounds such as [l] or [y] in English) were not used for the purpose of this study due to the difficulty of obtaining accurate segmentation. Each word was segmented using the syllable structure rules of Fijian, which assumes (C)V syllables. The top of **Figure 1** shows the word *dakɛ* segmented into its

phonological components. Praat provided the waveforms and the spectrograms of the files while also generating a pitch tracker and intensity tracker. The pitch tracker was generated using a floor of 75 Hz and ceiling of 300 Hz due to the fact that the participant was a male with deeper voice. The intensity tracker was generated using a floor of 50 dB and a ceiling of 100 dB due to the participant's voice quality and also to avoid any confusion with background noises adulterating the average intensity of the segments. The pitch and intensity trackers can also be seen in the spectrogram (bottom) of **Figure 1**, in which the word *dake* is tracked for its intensity and pitch.

After generating waveforms, spectrograms, pitch tracker, and intensity tracker I analyzed the words. I first broke them down into their syllables, using Hayes' proposed syllable structure of Fijian. I then coded the syllables in a separate document listing the vowel present in the syllable, the syllable structure (CV, V, CV:, or V:), the syllable's position in the word, whether or not that syllable should be considered stressed (according to Schutz's rules of stress), and the numerical measurements for average pitch, intensity, and duration. I took these measurements using the values of the vowels in both stressed and unstressed positions.



*Figure 1: Showing both the waveforms and spectrograms of the word **dake** with the pitch tracker marked in red and the intensity tracker*

In order to obtain the pitch and intensity measurements I relied on the measurements that the Praat software provided. In order to get the pitch value for a specific vowel I selected the segmented vowel and used the Praat command “get pitch,” which would give the average pitch in hertz of the highlighted selection. In order to obtain an average intensity measurement, I selected “get intensity” and Praat would return the average intensity in decibels for the selected region. The measurements were then recorded in a separate document containing the numerical values, as previously described. Duration was measured using the time of the utterance given by Praat in seconds. Duration measurements were gathered from the same boundaries as the consonant and vowel segmentation. The boundaries included only the stable part of the vowel, which is, in the

waveform the portion of the vowel with the most regular wave and measured from peak to peak or trough to trough.

Findings

After I analyzed the data, all of the values of pitch, intensity, and duration of vowels in stressed position were compared to those in unstressed position. In the word *dake*, as illustrated in **Figure 1**, the visible pitch contour is shown as a red dotted line and the visible intensity curve as a blue solid line. We see the word segmented into its phonological units. The pitch curve is much higher in the stressed initial/penultimate syllable *da* than it is in the unstressed ultimate syllable *ke*. The average pitch of the vowel in stressed position is 132.3 Hz compared to the unstressed syllable at 100.5 Hz. This indicates that for the word *dake*, pitch is a strong phonetic correlate of stress. Similar to the pitch of the syllables, the intensity curve is much higher in the penult *da* than in the ultimate *ke*. The average intensity measurement of the stressed penult is 77.6 dB compared to that of the unstressed syllable which is 67.02 dB, indicating that intensity is a strong phonetic correlate for stress as well. The higher averages of these phonetic correlates correspond to the higher paths of both the pitch and intensity trackers. Lastly, duration was also measured in both stressed and unstressed environments. The duration of the penult *da* was measured at 0.083s while the duration of the unstressed syllable was measured at 0.068s.

In **Figure 2**, we see the waveform and spectrogram of the word *tʃɛma*, ‘banana,’ with the visible pitch tracker and intensity tracker as well. In Figure 4 the penult *tʃɛ* can be seen to have a higher pitch contour than that of the following unstressed syllable *na*. The average pitch of the penult *tʃɛ* was recorded as 157.7 Hz as compared to the unstressed ultimate syllable which had a pitch of 107.8 Hz. The intensity of the penult was recorded as 78.85 dB, while

that of the unstressed syllable was 72.03. These values indicate again that both intensity and pitch are strong phonetic correlates of primary stress in Fijian. The duration of the stressed penult was recorded at 0.112s, while the unstressed final syllable was recorded at 0.08s. The longer length of the stressed syllable in the word *tjema*, similar to the values of duration gathered from the word *dake*, indicates that duration may also be a possible phonetic correlate of stress.

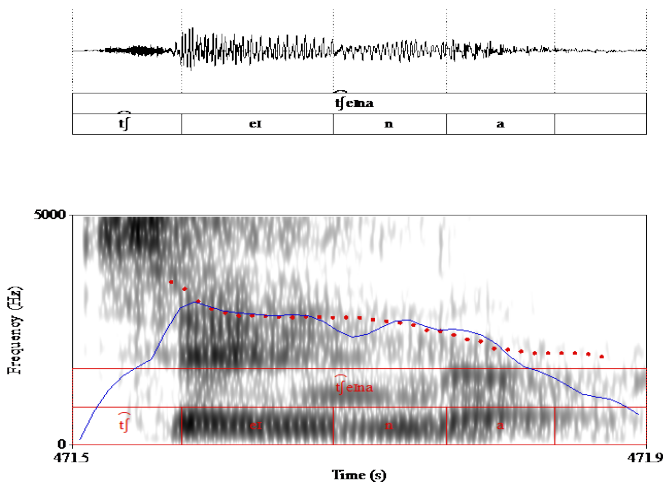


Figure 2 Waveforms and spectrograms of the word *tjema*, with the pitch in red and the intensity in blue

A third example of this pattern can be seen in **Figure 3** with the word *koδei*, with its visible pitch and intensity trackers. The average pitch in the stressed penult *ko* was recorded at 136.9 Hz, while the unstressed syllable *δei* was recorded as 103.9 Hz. This measurement follows the trend set so far by other forms in the data set. The average intensity of the stressed penult was measured at 75.06 dB while the average intensity of the unstressed ultimate syllable was measured at 69.64 dB. Similar to the average pitch, these measurements also follow the trend set by the data. The

duration was also measured in stressed position and unstressed position. The duration of the stressed penult was recorded as 0.076s while the unstressed final syllable was recorded as 0.1458s. This is a deviation from the trend set by the data which indicates duration being a strong phonetic correlate. Since this anomaly occurred in word final position and the words were all pronounced in isolation, this is most likely a case of word final lengthening.

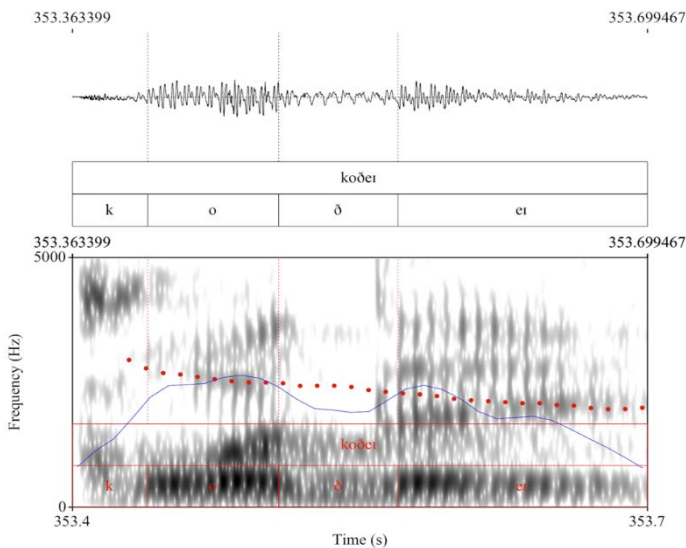


Figure 3 Waveforms and spectrograms of the word *koðei*, with the pitch in red and the intensity in blue.

Figure 4 presents an interesting case, because *iβei* is one of the few words in the word list containing a syllable structured with one vowel (V). The average pitch in penult position is 163.4 Hz, compared to 122.3 Hz in ultimate position. While the two syllables in *iβei* are close in intensity, with 76.64 dB in the penult and 77.69 dB in ultimate position, the difference is not significant enough to mark it as a clear indication for a correlate. Despite the fact that the ultimate syllable contains the intensity peak, both

averages are too close to draw a clear conclusion from this one utterance. Along with intensity, duration provides questionable measurements. The penultimate syllable has a duration of 0.088s compared to the final syllable at 0.144s, which is possibly another instance of word final lengthening.

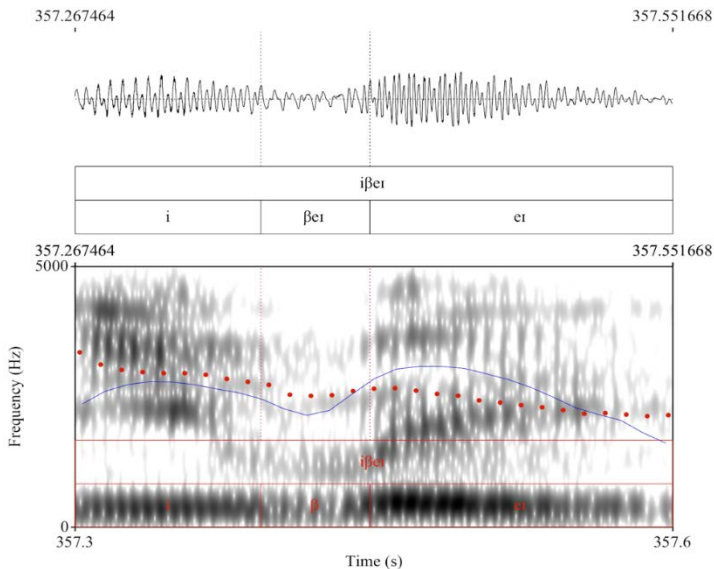


Figure 4 Waveforms and spectrograms of the word *iβei* with the pitch in red and the intensity in blue

Most of the data reinforce(s) pitch and intensity as strong phonetic correlates. The average value of all syllables in stressed position was derived and compared to the average values of all vowels in unstressed position. The average pitch of vowels in stressed position was 147.457 Hz, while the average pitch of a syllable in unstressed position was 127.811 Hz. That the average pitch was higher in stressed position indicates that pitch is a strong phonetic correlate for stress in Fijian. The average intensity of a syllable in stressed position was 74.503 dB while the average intensity of a syllable in unstressed position was 71.52 dB. Similar to the average pitch, the higher average intensity in stressed

syllables compared to unstressed indicates that intensity is also a strong phonetic correlate of stress.

While both pitch and intensity indicate phonetic correlates, duration acts as an anomaly. The average duration measurement of syllables in stressed position was 0.0855s while the average duration of a syllable in unstressed position was 0.0944s. The difference in duration from syllables in stressed position to those in unstressed position is 0.0089 seconds. This increase in length of unstressed syllables in final position could be due to several factors, one of which is word final lengthening, as mentioned above.

Through the data collection, almost all words pronounced in isolation followed the trend of having a stressed penult with higher average pitch and intensity vowels except for two words *keke* and *meke*. The word *keke* had a penult syllable pitch of 152.4 Hz compared to the ultimate syllable pitch of 157. Hz. Intensity in penult position was 70.66 dB while the intensity of the ultimate position was 70.1 dB. Duration was also longer in the ultimate position recorded at 0.1255s compared to a penult recording of 0.097s. Despite the average intensity being almost identical across syllables the duration is greater but most notably the pitch does not match the trend or correlate to stress. A similar situation is illustrated by the word *meke*. The only change in the word *meke* is that there is a greater difference in pitch values between ultimate and penult positions 155.6 Hz in ultimate and 144.6 in penult. More data will need to be collected on these and similar words in other contexts such as in sentences and repeated multiple times.

Conclusion and Discussion

This acoustic analysis shows that the strongest phonetic correlates of primary stress in Fijian are pitch and intensity. Throughout the data the pitch has a higher average

value in stressed penultimate position compared to those in unstressed positions. Along with pitch, intensity is also identified as having a higher average among stressed penults compared to syllables in unstressed positions. These higher values, accompanied by peaks of each in syllables of stressed position, are expressed as stress.

Duration, however, does not strongly correlate with primary stress in the data gathered. The average values which are greater in unstressed positions than those in stressed positions deviate from the general course of the data. Word-final lengthening made it difficult to obtain accurate measurements of the true vowel lengths of those vowels in unstressed final position. This could provide an explanation for why unstressed final vowels were much longer. Fijian exhibits a difference between long and short vowels which could be one of the reasons for unclear duration measurements. It is necessary to examine more data containing words pronounced in a list and pronounced more than once, as well as the word given in contexts. This additional data will make it possible to determine whether or not duration is a phonetic correlate of stress and if word final lengthening was the issue in gathering values. By obtaining the words in sentences the issue of word final lengthening will be eliminated and additional analysis can occur. Further research will also need to be done regarding the words *keke* and *meke* in order to determine if there is an exception to the trend observed in the data.

Additional research will require an expansion of the interview to more participants. It will also entail the creation of a more detailed word list in order to provide numerous words of multiple syllables with the aim of reinforcing the trends set for pitch and intensity. An expansion of the study will allow for multiple variations of the language. Increasing the number of participants will permit a greater diversity of speech variations in order to reinforce the data gathered in

this study. Words of additional syllable lengths will also be gathered in order to analyze the most diverse group of words. Additional words containing syllables without a consonant, similar to that present in the word *iβei*, will offer researchers more information about how syllables without a consonant function in Fijian.

Schütz's characterization of stress referenced above defines stress as the degree of amplitude in comparison with that of unstressed syllables and how one syllable sounds louder when compared to another. Along with amplitude (intensity), pitch should also be included in the description of stress. The data collected proves that pitch, along with intensity, is a phonetic correlate of stress and therefore should be included in the description. By including the phonetic correlates, the definition for stress becomes more detailed and includes not only the general stress patterns but also the acoustic foundations.

In addition to the stress patterns, Schütz states that it is difficult to determine which perceived phenomena apply to words or phrases, because words pronounced in isolation are, in fact, phonological phrases as well (Schütz 1999: 151). This issue will be resolved after gathering the additional data consisting of words pronounced in sentences. The words pronounced in sentences will be compared to the same words pronounced in isolation. This comparison will allow for parallels to be drawn in order to determine whether certain phenomena are specific to words or longer phonological phrases. Along with word final lengthening, Schütz also explains that there is obligatory vowel shortening in word penultimate positions that neutralizes any contrasts between long and short vowels (Schütz 1999: 149). Schütz also questions whether stress is phonemic the same way it is in Hawaiian, and how we can tell if there are in fact no minimal pairs to compare long and short vowels (Schütz 1999: 149). This is an important idea to remember while expanding the

study because it could lead to an explanation of vowel length measurements.

This project provides additional information on the linguistics of Fijian as well as the Austronesian language family as a whole. The study emphasizes the importance of researching the phonetics of a language in a detailed manner in order to expand the understanding of a language. By describing the phonetic factors of the language and in this case the phonetic correlates of stress Fijian, linguists will place emphasis on phonetic factors alongside general rules and theories. These methods for phonetic analysis can also be applied to other languages in the South Pacific, most notably endangered languages. The phonetic analysis of other languages will provide a detailed view into how they function in terms of the phonetics.

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African Dress as a Tool for Colonial Resistance and Assertion of African Identities

Zingha Foma

Mentor: Dr. Mhoze Chikowero
Department of History

Abstract

Colonialism was pivotal in Africa's history, especially as colonial domination was achieved through force and intimidation. European economic and political interests were not just anchored in the colonial endeavor, various forms of violence proliferated in ensuring these interests. As a British 'protectorate' from 1901 to 1960, Nigerians resisted colonialism in various ways. One important way was through dress. This study examines how dress in the 20th century provided Nigerians' unique frameworks of contestation and reclamations of African identities. This form of resistance was crucial because colonialism was a far-reaching ideological project premised on reforming the 'uncivilized native.' The methodology consists of reviewing key literature that covers dress in Nigeria and utilizing primary resources, such as original African textile creations as well as photographic imagery to examine three cases where Nigerians used dress practices in the twentieth century as a tool for power dressing and resistance to colonial rule. Findings provide insight into the dynamics of Nigerian dress, identity politics, and cultural transformations, especially as they evoke modes of resistance.

Introduction

The continued suffering of (formerly) colonized peoples around the world beckons scholars to engage with how oppressed groups have historically resisted such exploitation and domination. Africans have a deep history of resisting colonial domination and of reclaiming their stolen identities. Using the case of 20th century Nigeria as a specific example, this paper illustrates how Africans used their own dress cultures as weapons to resist European domination, and to reassert their own freedom.

Scholars like Walter Rodney have placed the reasons for Africa's underdevelopment at the doorstep of a slave trading and colonizing Europe since the fifteenth century. Colonial regimes' hyper-extraction of Africa's energy was not limited to human and natural resources; it also included (and continues to include) intellectual and cultural resources. This underdevelopment was deeply grounded in the alienation of Africans from their cultures, what can be termed cultural imperialism, which sought to separate them from their indigenous ways of life.¹ This is the point that writers like Mhoze Chikowero (2015), Malidoma Patrice Somé (1995) and Jean and John Comaroff (1988) have illustrated. They have variously shown that the violence was not just physical; it was also psychological and cultural. For instance, missionaries, the vanguards of the colonial state,² crusaded against African spiritualities and cultures, demonizing them as "barbaric," "backward," "primitive," and "savage."³ This is how the missionaries

¹ Walter Rodney, *How Europe Underdeveloped Africa* (African Tree Press, 2014) 33-35.

² Jean Comaroff and John Comaroff, "Through the Looking-Glass: Colonial Encounters of the First Kind," *Journal of Historical Sociology* 1, no. 1 (March 1, 1988): 6-32.

³ Chinua Achebe, "An Image of Africa," *The Massachusetts Review* 18, no. 4 (1977): 782-94.

helped to create the pervasive image of Africa as the “dark continent,” a crucial justification for its colonization at the end of the era of the trans-Atlantic slave trade.⁴ It was through physical and psychological violence that missionaries and settlers succeeded to some degree to impose both European Christianity and political systems on Africans. In the face of this degradation, Africans were not passive victims. They actively resisted the regimes of violence through war, protests, reclamation, and reassertion of their indigenous identities. This paper explores this resistance against cultural warfare and reclamation through adornment.

Colonial Attack on African Dress

To appreciate the significance of colonial attacks on African cultures and African resistance against the assault, it is important to describe the centrality of dress to Africans’ expressions of identities, cultures, and traditions. Joanne Entwistle has defined dress as something that “operates at the interface between the individual and the social world...the private and the public.”⁵ For many Africans, dress was used as a means through which to exhibit individual political, socio-economic, and cultural identities about themselves and their communities. Additionally, the materials they used to make their clothing conveyed information about the wearer and maker, typically from the same cultural group and geographical region. For example, young girls in Mali wrapped themselves in the *bogolanfini* cloth during their ritualistic transformation into adulthood. The designs on the cloth represent a language that not only

⁴ Patrick Brantlinger, “Victorians and Africans: The Genealogy of the Myth of the Dark Continent. *Critical Inquiry* 12, no. 1 (Autumn, 1985): 166-203.

⁵ Joanne Entwistle, *The Fashioned Body: Fashion, Dress and Modern Social Theory* (Wiley, 2000).

reveals histories about its makers, but is also a canvas that carries information about mythologies and cures to medical conditions such as lower back pains and sterility.⁶ These are the knowledge systems that Arab and European colonists attacked, denigrating the clothes and attempting to replace them with European style dress.

Europeans who sought to colonize Africa attacked African cultural emblems rooted in African knowledge systems. The act of colonization has been defined in various ways because of the complexity of colonization in Africa. S.E. Merry defines colonization as:

...the European political, economic, and cultural expansion into Latin America, Africa, Asia, and the Pacific during the last four hundred years. Although similar processes have been ongoing for thousands of years, it is the recent European expansion, intimately connected with the spread of capitalism and the search for land, labor, and markets, which has shaped the contemporary world.⁷

While this discussion of colonialism is not specific to Africa, it does point to how colonization robbed indigenous peoples of their lands and labor for capitalist gains. This process destroyed and replaced several African institutions and led to the underdevelopment of Africa.⁸ Furthermore,

⁶ Victoria Rovine, *Bogolan: Shaping Culture Through Cloth in Contemporary Mali* (Indiana University Press, 2008), 15-25.

⁷ S.E. Merry, "Law and Colonialism," *Law & Society Review* 25, no. 4 (1991), 889-922.

⁸ Walter Rodney, *How Europe Underdeveloped Africa* (Verso Books, 2018).

these expansions were violent, attacking African bodies and minds.

Missionaries were the vanguards of cultural colonialism in Africa. In a letter to the editor in the July 1, 1871 issue of the *Kaffir Express*, one “Colonist” reported on the early European encroachment in Southern Africa, suggesting ways to prepare the “natives” for colonization: “[How] are we to prepare the Kaffirs and make them fit to be governed by the laws of civilized and Christian communities?” The answer was spiritual and cultural disarmament.⁹ The “Colonist” implored the deployment of missionaries to attack and erase African cultures and belief systems, which he denigrated as “native customs and amusements.” These, he strongly urged, should be replaced with Christian cultures. Thus Christianity became a key tool for colonization. The Europeans convinced themselves that they had “found [the African] a savage and a heathen; and it is our duty to show our Christian spirits and feelings, by trying through kind and gentle, but sure means, to raise him from his barbarous state.”¹⁰ These vanguards of colonization would wage war on elements of African cultures such as dress, and in return, many Africans would reject these colonially imposed ideals in the struggles for self-liberation against physical and psychological colonialism.

In his book, *Clothing: A Global History*, Robert Ross provides a clear narrative about how missionaries used dress to “civilize” Africans. He quotes the chronicles of an English Christian minister, also in southern Africa, highlighting how the minister celebrated the change in attire among the Khoikhoi people:

⁹ Mhoze Chikowero, *African Music, Power, and Being in Colonial Zimbabwe* (Indiana University Press, 2015); **cite the article here also.**

¹⁰ A Colonist, *The Kaffir express*. (Lovedale, South Africa: Lovedale Missionary Institution Press, 1871).

All barbarous customs [had] been civilized away by the missionaries, and the Khoekhoe inhabitants were beginning to exchange their sheepskins for clothes. Fifteen years later, a visiting English minister wrote of how at a service all the communicants [were] in their Sunday's dress, neat and clean...most of the women are dressed in clean white gowns. Both men and women save their best apparel, that they may appear decent at church on Sundays, but there is no affectation of finery among them.¹¹

The visitor praised the missionaries for accomplishing their “civilizing” mission in Africa. This is the same mission that the Colonist in the *Kaffir Express* was calling upon the missionaries to advance: colonizing and Europeanizing the African cultures of dress. The visitor also repeats the Colonist's call for the replacement of “barbarous” African customs and amusements. Additionally, Ross's comment about the exchange of sheepskin for clothes reveals the underlying prejudices of the Missioners who deemed African dress cultures inferior to European clothes. The English minister's use of words like “neat,” “clean,” “best,” and “decent” reveal his chauvinism; these words are used to contrast European clothing with indigenous African dress styles deemed “barbaric” and “indecent.” According to the English minister, the civilizing mission had indeed been accomplished as the missionaries had civilized Africans by making them into good Christians who appeared in the church in their European-style Sunday best. When Africans would reject European dress and reclaim their condemned indigenous clothes, they were rejecting the colonial myths

¹¹ Robert Ross, *Clothing: A Global History* (Cambridge: Polity, 2008) 84-85.

that missionaries created about Africa and Africans. A cultural war was waged on Africans through dress; reclamation would also be a war for self-liberation.

Kenyan scholar Ngugi Wa Thiongo has urged Africans to reclaim their indigenous cultures. His *Decolonizing the Mind* (1986) explicitly unveils the intention of colonialism in Africa and its impact on the African psychology. He proposes the reclamation of indigenous languages as a means to retrieve colonized African identities. Ngugi declared that the mental universe of the colonized was controlled through culture, that “to control a people’s indigenous culture is to control the tools used for self-definition.”¹² An identical principle can be applied to other forms of African indigenous culture, such as art, music, and clothing.

Analogous to *Decolonizing the Mind*, Mhoze Chikowero addresses the same theme of cultural resistance through the re-appropriation of African identity in *African Music, Power, and Being in Colonial Zimbabwe*. Chikowero investigates the several ways in which colonizers legitimized their control of cultural expression, particularly music, as a weapon to weaken African power and how Africans in response used their musical cultures to tell their own stories, reclaim their freedom, and reconstruct their being. He stresses that Africans, specifically Zimbabweans, used music as a weapon against the Rhodesian colonial state “to strive for self-liberation from the confinement of both the administrative kraals of urban ‘native’ re-creation and national subjugation.”¹³ The ideology of reclamation for liberation used by Ngugi and Chikowero is a theme that can

¹² Ngugi wa Thiong’o, *Decolonising the Mind: The Politics of Language in African Literature* (East African Publishers, 1992), 16.

¹³ Mhoze Chikowero, *African Music*, 2-5.

be applied to other indigenous African cultural forms including clothing.

In *Neo-Colonialism: The Last Stage of Imperialism*, Kwame Nkrumah writes that Africans' struggle for independence from their colonizers did not result in true independence but was merely a shift from colonialism to neocolonialism. According to Nkrumah, "the essence of neo-colonialism is that the state which is subject to it is, in theory, independent and has all the outward trappings of international sovereignty."¹⁴ In reality, the economy and thus the country's political system are directed by the outside. Under neo-colonialism, some of the colonial legacies of demonizing and banning indigenous dress cultures remained. For example, Jean Allman notes how some Ghanaians were forced to assimilate to popular European dress cultures. Allman states that "it was a perceived expression of female devaluation and of northern regional backwardness that the problem of the "unclothed" entered into public debate in the wake of Ghana's independence in 1957."¹⁵ Allman explains that the national project to eradicate nudity was an effort to mold and "modernize" the people of Ghana through clothes. Although Ghana was one of the first African countries to liberate itself from colonial rule, the long-lasting effects of colonization were still evident in the government's demonization of its citizens who refused to assimilate to European dress conventions.

History of Cloth Making in Africa

Archeological research has proven that the earliest specimen of cotton fiber found in Africa comes from a site

¹⁴ Ngugi, *Decolonizing*, 15.

¹⁵ Jean Allman, *Fashioning Africa: Power and the Politics of Dress* (Indiana University Press, 2004).

in Nubia and dates back to the second century BCE. Colleen E. Kriger establishes a general chronological framework and maps out some broad geographical parameters for cotton and cotton textile production in West Africa. Kriger asserts that “evidence comes from a mummy dating to the second century BCE, which is thought to have been from Egyptian Nubia. Amongst the remains was cotton thread—some of it woven into linen fabric.”¹⁶ In northeast Africa, cotton was grown, spun, and woven between the third century BCE and the fourth century BCE. This type of cloth production still exists in textile producing areas of West Africa like the Upper Niger, Gambia, and Senegal.¹⁷

Elisa La Gamma corroborates Kriger’s claim about the origin of textile production in Africa by demonstrating that textiles have been the ultimate vehicle through which human creative ingenuity has traveled on the continent. She implies that this channel of art had the ability to adapt to change and newly emerging social realities in most African communities.¹⁸ A similar premise informs Ardis M. Rewerts’ and Alira Ashvo-Munoz’s examination of how clothing and cloth production are part of the African identity. While La Gamma’s and Kriger’s texts examine the creation of clothes interwoven into Africans’ identities, Rewerts and Ashvo-Munoz illuminate the Kongolese’s use of the detailed work, embroidery, and color in the textiles they produce. Rewerts and Ashvo-Munoz argue that the process of preparing and producing the raffia cloth, an indigenous Kongolese Kuba cultural textile, and the distinctive socio-cultural significance created by this process, help explain

¹⁶ Colleen E. Kriger, “Mapping the History of Cotton Textile Production in Precolonial West Africa,” *African Economic History*, no. 33 (2005): 91.

¹⁷ *Ibid.*, 51.

¹⁸ Alisa LaGamma, Christine Giuntini, and Metropolitan Museum of Art (New York N.Y.), *The Essential Art of African Textiles: Design Without End* (Metropolitan Museum of Art, 2008).

why the Kuba rejected European clothes during colonization.¹⁹ As with the previously mentioned scholarship, these two scholars demonstrate that there is a relationship between Africans' politics and their clothes.

As Chris Springs puts it, African textiles “whether handwoven, factory-printed, resist-dyed, stamped or embroidered—are arguably the most obvious visible signifier of culture throughout the African continent, or for that matter wherever in the world people of African descent have settled.”²⁰ Spring’s remark provides a broad overview of how African people on the continent and in the Diaspora used textiles and their meanings to self-identity and self-liberate. The history, beliefs, fashion, status, and aspirations of people are visible in the colors and patterns of the textiles in which they adorn themselves. This means that the materials from which the clothes are made, and the occasions on which they are worn or otherwise utilized go hand in hand. These factors and elements of identity that were designed into indigenous African textiles predict how the European domination of the textile market would destroy textile-producing practices in western Africa. This was a means to subvert or entirely banish African culture and an African tradition by which Africans asserted their identities as the history of African people can be read, told, and recorded in textiles and dress.²¹

John Gallow, similar to other African textile scholars, presents more evidence of the presence of African textile production dating back to the 11th century. He notes that “locally made strip woven cloth dating back to the 11th

¹⁹ Ardis M. Rewerts and Alira Ashvo-Munoz, “Off-Beat Rhythms: Patterns in Kuba’s Textiles,” *The Journal of Popular Culture* 32, no. 2 (September 1, 1998): 27–38.

²⁰ Christopher Spring, *African Textiles Today* (Smithsonian Institution, 2012), 6.

²¹ *Ibid.*, 23.

century [was] found in the burial caves of the Tellem people in the Dogon area of Mali.”²² Additionally, recent archaeological research suggests that woolen cloth was being used and traded in the region from at least the sixth century AD and possibly earlier.²³ Wool and cotton fragments dating to the eleventh century AD discovered in four burial caves on the Bandiagara escarpment in Mali include narrow-strip weave and resist-dye examples characteristic of Sub-Saharan West Africa, as well as patterned cloth of North African inspiration printed cloth.²⁴ This evidence of African textile production in Africa demonstrates that African people had been producing textiles well before their encounter with outsiders. Not only did African people produce textiles, they also traded these textiles and as Springs puts it, “making and trading numerous types of cloth have been vital elements in African life and culture for at least two millennia, linking different parts of the continent with another and with the rest of the world.”²⁵

Textile patterns, materials, and means of production may illustrate individual events in history, or the means of production may represent different events in history, or they may chart the movement and migrations of people over a much longer period. Understanding and comprehending this extensive history of African textiles and its evolution on the continent is crucial because “cloth may sometimes offer a means of understanding the religious, political, social or military history of African peoples in the absence of detailed written historical account.”²⁶ Not only does this textile history help understand the lives of African people, but it also helps trace the peoples’ encounters with outsiders and

²² John Gillow, *African Textiles* (Chronicle Books, 2003), 11.

²³ Spring, *African Textiles Today*, 33.

²⁴ Gillow, *African Textiles*, 76.

²⁵ Spring, *African Textiles Today*, 33.

²⁶ *Ibid.*, 33.

how the encounters impacted not only textiles production but also the identities of the people.

Additionally, African dress production and usage is also tied to power and prestige. In *Yoruba Cloths with Regal Names*, Ruth M. Boyer remarks that in Nigeria, the wearing of traditional robes lends social prestige to Yoruba men. The variant names of these robes befit the excellent artistry behind their production. Usually, these special clothes are only worn by the elite in the community.²⁷ David Heathcote supports Boyers' claim by demonstrating how the Hausas, a Nigerian ethnic group's love for travel is reflected on the embroidery used on their robes. The most spectacular single garment is the *babbar riga*, an outer garment, sometimes very large, up to twelve feet wide when spread out. These big gowns are typically worn only by important men. Alhaji Zanna Abubakar, the Minister of Mines and Commerce in the Nigerian Government at the time of independence in 1960 wore one. Since then, a shortened form of his name, Zanna Bukar, is now generally associated with embroidered caps.²⁸ When a new emir is elected in Abuja, his garments are changed as part of the installation ceremony. Boyer's and Heathcote's texts highlight the ways traditional clothing is a part of Nigeria's political culture and serves as a means to express socio-political power and status. This is part of the legacy of dress in Africa, and one of the ways in which Africans have used clothing in their history.

Dressing for War – Three Case Studies

Although Africans all over the continent have used body adornment as a tool to resist cultural imperialism and assert their Africanness, this research focuses on Nigeria as

²⁷ Ruth M. Boyer, "Yoruba Cloths with Regal Names," *African Arts* 16, no. 2 (1983): 42–98.

²⁸ David Heathcote, "Hausa Embroidered Dress," *African Arts* 5, no. 2: 12–84.

an example to showcase power dressing and resistance through dress. In this particular study, I identified three cases where Nigerians used dress practices in the twentieth century as a tool for power dressing and resistance to colonial rule, and colonially imposed policies. The first case was during the Aba Women's War in 1929, the next is shown in a photo of Oba Ademuwagan Adesuda II in 1959 taken by Eliot Elisofon, and the third showcases the 1999 "khaki to agbada" political movement. In all cases, Nigerians use dress as a symbol of resistance and assertion of African identities.

Aba Women's War

In 1929, women in Igbo land rose up in a popular resistance that was labeled the Aba Women's Riots in British colonial records. During this rebellion, Aba women used dress that represented war and spiritual power to fight against colonially imposed taxes. On November 1929, the Aba Women strategically executed an anti-colonial revolt to redress the social, political, and economic grievances they experienced under British colonial rule.²⁹ The decision to start the rebellion was made in the *mikiri*, a forum where women developed political skills and promoted and regulated trading, to respond to the abuse and forthcoming taxes to be collected by Warrant Chiefs who collected colonially imposed taxes for the British. During this war, spokeswomen were chosen in the *mikiri* to present the women's demands for the removal of the Warrant Chiefs. These Warrant Chiefs were British appointed agents required to carry the orders of British District Officers. During this rebellion, the women wore traditional dress as weapons to fight colonial taxes and policies. They wreathed their heads with young ferns that symbolized war. They also

²⁹Judith van Allen, "'Sitting on a Man': Colonialism and the Lost Political Institutions of Igbo Women," *Canadian Journal of African Studies / Revue Canadienne Des Études Africaines* 6, no. 2 (1972), 174.

used sticks bound with ferns and young palms to invoke the powers of the female ancestors.³⁰

British colonialism compromised women's position in Igbo society. These colonial officers and missionaries ignored the political roles and the political power of Igbo women. The officers' actions sought to weaken and destroy women's bases of power, that had been acquired through trade, because the "British tried to create specialized political institutions which commanded authority and monopolized force." In so doing, they did not take into account the role of women and thus political institutions became dominated by men and "women were excluded from political power."³¹ As a result, Igbo women used the *mikiri* as a space where women could exercise their political power. In these meetings, women discussed and addressed the abuses of the Warrant Chiefs who were reported to have taken women in marriage without conforming to the traditional rituals and helping themselves to women's agricultural produce. The worst offense that provoked the war was the rumor that the women were to be taxed by the chiefs who were the messengers of the British officers.³² Here is Judith Van Allen's description of how the war erupted:

In November of 1929 in Calabar and Owerri Province, thousands of women converged on the Native Administration Center. The women chanted, danced, sang songs of ridicule and demanded the caps of the office (the official insignia) of the Warrant Chief--the Igbo chosen from each

³⁰ Ibid., 166.

³¹ Ibid., 167.

³² Judith Van Allen, "Aba Riots or the Igbo Women's War?-Ideology, Stratification and the Invisibility of Women," *Ufahamu: A Journal of African Studies* 6, no. 1 (1975), 22.

village by the British to sit as members of the Native Court. Prisons were broken into and the prisoners released at a few locations. Attacks were made on sixteen Native Courts, and most of them were broken up or burned...On two occasions, when British District Officers had called in police and troops, the women were fired upon, leaving more than 50 women dead and another 50 wounded. No one was seriously injured on the other side.³³

During this one-month war, British officials murdered the protesting women. Although the women were not carrying conventional weapons, their dress was a weapon that signified war and evoked the spirits of their ancestors. As evident in **Figure 1**³⁴, the Nigerian women had on a similar type of cloth wrapped around their bodies. In addition to this cloth, they also appear to have head wraps and jewelry and ferns. Since this was a war, the women came prepared, wearing the head accessory that symbolized war. Additionally, these body adornments also carried spiritual powers and were used to summon female their ancestors. This is an instance of how Africans, specifically African women, waged war against colonial policies. This example demonstrates that in Africa's history, dress has been used as a tool during resistance movements. The Aba women's dress choice was not only meant to frame the event, but the components that made up their dress were cultural and spiritual weapons for the women who waged war on the British. In addition to the chants, songs used to ridicule, and dance used during this event, the Aba women also used undressing as a weapon. Knowing that the Warrant Chiefs'

³³Ibid., 62.

³⁴"Funmilayo Ransome-Kuti Pedagogical Unit 2 | Women," accessed December 9, 2018, <https://en.unesco.org/womeninafrica/funmilayo-ransome-kuti/pedagogical-unit/2>.

caps were the official insignia for their power, the Aba women demanded the removal of these caps, stripping the Warrant Chiefs of their power. The Aba women used their indigenous dress practices such as head adornment that symbolized war and sticks bound with fern used to summon their ancestors, and their knowledge of the power of dressing to fight the Warrant Chiefs.



Figure 1 Aba women of Nigeria in the first half of the 20th century. Unknown author. Published in Margery Paerham, native Administration in Nigeria, Longon. 1937

Oba Ademuwagon Adesuda II

In addition to the Aba women's power dressing during rebellions, Africans have also used traditional dress to demonstrate power and pride. For example, in Nigeria on November 19, 1959, Oba Ademuwagon Adesuda II posed in the courtyard of his palace for *Life Magazine* photographer Eliot Elisofon (**Figure 2**). During this time Nigeria was heading for independence after almost seven decades of British colonial rule. Under the British, Nigeria, like other African colonies, experienced military defeat, the imposition of taxes, forced labor and the presence of foreign missionaries. However, in the image below, the Oba displays power through dress, attire that represents his connection to

his indigenous culture used to symbolize the strength of Nigeria even after decades of colonization.



Figure 2 Eliot Elisofon Photographic Archives: King Oba posed in front of his palace

At the time the photo was taken, Oba Adesida II was a 34-year-old regional leader, or Deji, of the Yoruba, one of the largest ethnic groups in Nigeria. He ruled more than 100,000 Akure people as the 42nd Deji. Although he was the Deji of Yoruba, Oba Adesida II was also an attorney who had studied law in Europe and passed the bar examination in London. Elisofon's photo was meant to be a reflection of the ruler's position within Nigeria's changing socio-political landscape.³⁵ Elisofon describes the Deji as a "young European-educated leader who holds a traditional-encrusted throne, and is attempting to reconcile the two cross-currents."³⁶ Ironically, the Deji's choice of dress in the image above does not convey the idea

³⁵ Clarke Christa, *Power Dressing: Men's Fashion and Prestige in Africa*: (The Newmark Museum, 2005), 5.

³⁶ *Ibid*, 5.

that he was attempting to reconcile two cross currents. If anything, his selection of clothing and the positioning of the photo communicate this connection to his African culture.

According to Clarke, the Deji's choice of dress is significant, for it was "intended to emphasize the power and authority of traditional systems of leadership in a rapidly changing Nigeria."³⁷ On his head, he wears a tall beaded crown with a veil that obscures his face and underscores the sacred nature of his position. On his feet, elaborate bead slippers are supported by beaded foot cushions placed on a lion skin rug. In his hands he holds a beaded whisk. A particularly important element in the Deji's public presentation is his beaded robe. The robe is a Yoruba version of the Hausa "robe of honor" worn by the political elite to the north. However, the robe in the photo is made of velvet, a luxury import that emphasizes that rulers had privileged access to foreign goods. The extensive beadwork that covers the garment represents his wealth and status. According to Yoruba beliefs, embellishment with beads, symbolic of royalty, increased the ritual potency of the regalia. The beadwork designs reflect both tradition and change. Small beadwork faces representing the original Yoruba king situate the Deji within the royal lineage as a sacred descendant of Oduduwa, a Yoruba god, and their first ruler. At the same time, Hausa designs have been adapted or replaced with Yoruba icons of power. On the Deji's left, elongated triangles are Hausa motifs referred to as "knives," symbolizing wealth. On the right, a large circle with four faces evokes a Yoruba divination board, replacing the spiral design typically embroidered on Hausa robes while retaining its protective symbolism.³⁸ The Deji's attire carries symbols that are representative of power. Although he was a London-

³⁷ Ibid, 5.

³⁸ Ibid, 6.

educated attorney, he understood the significance of this cultural attire and chose to represent himself in his traditional regalia for a Western magazine.

1999 Khaki-to-Agbada Movement

In 1999 Nigerians also used dress to symbolize a political shift from military rule (associated with British colonialism) to Nigerian civilian rule. During this shift, dress that was connected to British colonization in Nigeria was rejected for dress Nigerians considered indigenous. The shift to civilian rule is often portrayed in the press in terms of a change in dress, from military uniforms introduced by the British, referred to as “khaki,” to civilian dress, often referred to as “agbada” (robe; **Figure 3**).³⁹ The Yoruba term agbada refers to the large gowns made of locally hand-woven cloth worn by traditional chiefs in Nigeria. The term khaki derives from British colonial rule in India, originated in 1845 in India where British soldiers soaked white uniforms in mud, coffee, and curry powder to blend in with the landscape. This transition represented national independence. The advent of colonialism represented the first transition from Agbada to khaki. During this time, British imperialists used small locally recruited military units along with British and West Indian troops, who wore khaki uniforms, to subjugate the ethnic groups that existed in Nigeria.⁴⁰ In contrast, Agabadas were seen as civilian dress. During this movement, the khaki that denoted government by decrees was replaced with the “Agbada that

³⁹ Elisha P Renne, “From Khaki to Agbada: Dress and Political Transition in Nigeria.,” *Fashioning Africa: Power and the Politics of Dress.*, 2004, 125–43. Cite the specific page.

⁴⁰ Bukola Adeyemi Oyeniyi, *Dress in the Making of African Identity: A Social and Cultural History of the Yoruba People* (Cambria Press, 2015), 107.

denoted government by popular consent, dialogue, and deliberation.”⁴¹



Figure 3 20th Century Agbada from the San Francisco Fine Art Museum

The khaki-to-Agbada movement represents a moment in Africa’s history where dress was used to symbolize political change from military rule associated with British colonization to civilian rule that sought to give African civilians political power to run their affairs.

Conclusion

In this paper, I attempted to present a political history of dress in Africa starting with how African clothes were used by Africans in contrast to how European colonizers used these clothes and dress practices to demonize Africans as uncivilized peoples who required civilizing through European dress. Next, drawing on the conceptual approaches of scholars such as Ngugi and Chikowero, I illustrated how Nigerians utilized their dress practices to reclaim and

⁴¹ Ibid., 108.

reassert their cultural and political autonomy. Historically, African dress has meant different things for its makers and wearers. Part of this history includes the stories of how African people have used clothing as a weapon to fight against colonization and as a tool to assert themselves in the global sphere. Although people all over Africa have historically used dress as a tool for resistance and cultural assertion, this study demonstrated Nigerians' unique history with dress.

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Decolonizing Our Schools to Dignify Our Youth: Neocolonial Punitive Methods and The Global Community of Children of Color

Zenzile Riddick

Mentor: Dr. Victor Rios
Department of Sociology

Abstract

Educational and punitive methods in modern schooling have longstanding roots in imperialism and colonialism. This project is a comparative analysis of the educational methods, punitive practices, and cultural implications of colonial missionary education in Southern and West Africa and modern U.S. public education. To compare these two types of colonial education, I first undertook an in depth study on missionary education as an epistemicidal process of cultural genocide, I traced the same methods of curriculum, punishment, criminalization, and power in the punitive and educational processes of modern American schools. Through the use of pattern-matching analysis, I chart the shared methods, practices, and implications of colonial and “post-colonial” educational systems and substantiate my analysis through the theoretical frameworks of Critical Race Theory, Black Feminist Thought, Critical Criminology, and Identity Formation Theory. I ultimately argue that U.S. public schools participate in a neocolonial system of cultural criminalization and identity disempowerment that is similar to the historical missionary educational system in Africa. By first identifying the basic shared processes of oppressive educational structures, I hope to develop a counter structure centered on cultural empowerment and the decriminalization of ethnic identities.

Introduction/Background

Colonialism and Missionary Education in Africa

The European colonization of Africa in the 19th and 20th centuries was called, by the colonists and their supporters, a civilizing mission. The idea, as the colonizers themselves stated, was to bring humanity to the savage and barbaric peoples of the Dark Continent. Colonization was supposed to help Africans, modernize them, educate them, and instill in them Victorian values. However, in the words of author Jack Schwartz, “genocide is an attempt to exterminate a people, not alter their behavior.”¹ Though he was referencing the war crimes of WWII, Schwartz’ poignant statement rings true in light of the colonization of Africa; though colonists claimed to be attempting to alter African behaviors, lands were raped and people were massacred, with *millions* of deaths in the Congo *alone*.² Genocide of the African being is not only the murder of the people, but also, the murder of their cultures as well. The missionary schools placed in Africa by the European colonial state were primary sites of such genocidal colonialism.

Dominant narratives have depicted missionaries as innocent civilizers, independent of the colonial mission.³ However, imbedded in missionary writings are the

¹ Schwarts, Jack. "An Old Story: Anti-Semitism, Past and Present." *Aish*. Aish, 29 Dec. 2001. Web. 1 Nov. 2015.

² Rummel, R.J. "Exemplifying the Horror of European Colonization: Leopald's Congo." University of Hawaii, 27 Apr. 2003. Web. 5 Nov. 2015.

³ Mackenzie, Clayton. "Demythologising the Missionaries: A Reassessment of the Functions and Relationships of Christian Missionary Education Under Colonialism." *Comparative Education*. Vol. 29, No.1. Taylor & Francis, Ltd. 1993. Web. Accessed 5 October 2016.

underlying ideologies brought to light in works such as *Through the Looking Glass* and *African Music, Power, and Being in Colonial Zimbabwe*; colonialism was as cultural as it was economic and political, and the mission systems were central to carrying out the cultural genocide that the colonial administrations outlined. Missionaries were funded by the colonial administration; as “employees” of the colonial administration, missionaries actively pursued the annihilation of African culture as a whole, clearing the path for European domination.⁴ Missionary education became a source of forced labor. Much of the funding for these “schools” and “churches” was based on production quotas; they weren’t missions, they were plantations.⁵ In addition to instituting forced labor, mission schools reshaped the valuing of the Africans, measuring their intellect by their ability to conform to European culture.⁶ Missionaries forced African children to speak in European languages, they redrew their maps to reflect colonial borders, and in general, they condemned all things African.⁷

21st Century U.S. Public Education

The state of modern U.S. public education is characterized by punitive policies. Recent developments in school punitive control (zero-tolerance policies, SROs) have no positive impact on student behavior and perhaps even a

⁴ Chikowero, Mhoze. *African Music, Power, and Being in Colonial Zimbabwe*. Bloomington: Indiana UP, 2015. Print.

⁵ Somé, Malidoma. *Of Water and the Spirit: Ritual, Magic, and Initiation in the Life of an African Shaman*. Penguin Books, 1994. Print.

⁶ Chikowero, Mhoze. *African Music, Power, and Being in Colonial Zimbabwe*. Bloomington: Indiana UP, 2015. Print.

⁷ Gaspar, Anedito. “African Responses to Missionary Education.” *Assimilation and Discrimination: Catholic Education in Angola and the Congo*. Teacher’s Press, New York: 1975. Print.

negative one.⁸ Black and Latinx youth are not only more likely to face punishment in school, but also lead the nation in both high school drop-out and juvenile incarceration rates.⁹ Often, the punishment that leads to such criminalization is in response to cultural expression: in many examples, Black/Latinx cultural expressions such as having braids/dreadlocks, or speaking Spanish, can lead to exclusionary punishment such as detention, suspension, and expulsion.¹⁰ Not only do current punitive policies criminalize students' cultures, they also destroy students' dignity. Studies have shown that students are humiliated and unsupported in schools, causing them to feel disempowered. As a result, students seek validation outside of school, and often see active resistance to education and educators as self-validating.¹¹

Because the criminalization of culture through educational and punitive processes is central to both colonial missionary schools in Africa and modern U.S. public schools, this study examines the similarities between the schooling methods present in each case.

Methodology

To locate and analyze the educational methods, punitive practices, and cultural implications shared by colonial African missionary schools and modern U.S. public schools, I use the Qualitative Multiple Case Study

⁸ Heitzeg, Nancy. *The School-to-Prison Pipeline: Education, Discipline, and Racialized Double Standards*. Santa Barbara: Praeger, 2016.

⁹ Rios, Victor M. *Punished: Policing the Lives of Black and Latino Boys*. New York and London: New York University Press, 2011.

¹⁰ Morris, Monique W. *Pushout: The Criminalization of Black Girls in Schools*. United States of America: The New Press, 2016.

¹¹ Rios, Victor M. *Punished: Policing the Lives of Black and Latino Boys*. New York and London: New York University Press, 2011.

Methodology as defined by Pamela Baxter and Susan Jack in *The Qualitative Report*.¹² Defined as “an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources,” qualitative case studies provide for interdisciplinary research, and “multiple case studies” are specifically focused on comparative analysis, with the goal of replicating findings across cases.¹³ In qualitative case studies, boundaries between phenomena and contexts are not always clearly defined. In my research, though, I hypothesize that the context of colonial epistemology creates the phenomenon of criminalization among youth of color. Criminalization could also contextualize a phenomenon of post-colonialism. My findings assist in clearly identifying the relationship between colonialism and criminalization, providing the foundation for theorizing comprehensive intervention in public education.

The first step in Qualitative Multiple Case Study analysis is to define my cases, or units of analysis. Though my two overarching cases are educational experiences in colonial African countries and the 21st century United States, my three major units of analysis are: educational methods, punitive practices, and cultural implications. In reading foundational literature on colonial missionary education and the school-to-prison pipeline, I separately chart examples of each case, and then cross-compare the examples through a pattern-matching method of analysis.¹⁴

An important component of qualitative case studies is the application of conceptual frameworks. Qualitative case studies are heavily based on a constructivist paradigm,

¹² Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13(4), 544-559.

¹³ Ibid.

¹⁴ Ibid.

assuming a socially constructed reality. Though inherently interdisciplinary, including history, education, and sociology fields, my research operates through similar constructivist frameworks. The three central conceptual frameworks I apply throughout the analysis are Critical Race Theory (CRT), Critical Criminology, and Identity Formation Theory (IDFT). Critical Race Theory “centers academic and legal discourse on understandings of race, racism, colonialism, and capitalism.”¹⁵ Critical Criminology is “the study of crime in relation to power, which explicitly examines crime as a socially constructed phenomenon.”¹⁶ My use of Identity Formation Theory focuses on the assertion that “people have many role identities, each one corresponding to a social position they hold, each having a particular value...[determined by] social support, prestige and rewards, commitment, role performance, the presence of identity-enhancing or identity-threatening events, and possible selves.”¹⁷ In addition to the application of existing frameworks, a qualitative case study should work towards the development of its own framework or structure.¹⁸ The findings of my comparative analysis are used to construct a culturally empowering model of education.

Literature Review

This study focuses on the similarities between educational methods, punitive practices, and cultural

¹⁵ Taylor, Edward. “The Foundations of Critical Race Theory in Education: An Introduction” *Foundations of Critical Race Theory in Education*. United States of America: Routledge, 2016. 2nd Ed.

¹⁶ Rios, Victor M. *Punished: Policing the Lives of Black and Latino Boys*. New York and London: New York University Press, 2011.

¹⁷ Flores-Gonzalez, Nilda. “Patterns of Identity Differentiation.” *School Kids/Street Kids: Identity Development in Latino Students*. New York: Teachers College Press, 2002.

¹⁸ Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13(4), 544-559.

implications in missionary schools in 19th and 20th century colonial south/west African countries and modern, 21st century U.S. public school classrooms. In conducting my multiple qualitative case study, I collected African-produced scholarship on missionary education, specifically highlighting elements of each case that align with one or more of my units of analysis. I then assembled foundational and recent literature on the school-to-prison pipeline to identify the current methods, practices, and implications of U.S. education that mirror colonial missionary models.

In his chapter “Missionary Witchcrafting African Being,” Mhoze Chikowero defines the task of Christian missionaries as an effort to first destroy the collective African culture and consciousness and then replace the extinct culture with a culture of colonization.¹⁹ Chikowero assesses such attempts at cultural attack and reshaping through the lens of auditory expression in the context of music as a political and social construct. He provides examples of the systematic destruction of traditional African culture, and the pervasive implementation of colonial culture, standards, and influence. In addition to “spiritually disarming” African peoples by strategically placing mission stations atop destroyed spiritual shrines and burial sites, missionaries also demonized all aspects of African culture, including “marriage practices... spirituality... healing... [and] leisure practices.”²⁰ Furthermore, missionaries were as committed to implementing colonial culture as they were to destroying the African cultures that preceded it. The missionaries – in examples such as the Chishawasha boys, a traveling youth band that wore European clothes, played European instruments, and sang European song while African musical expressions were being outlawed –

¹⁹ Chikowero, Mhoze. *African Music, Power, and Being in Colonial Zimbabwe*. Indiana University Press: 2015. Print.

²⁰ Ibid.

reshaped the valuing of the Africans by measuring their intellect by their ability to conform to European outlets of expression and existence.

Closely connected to Chikowero's analysis and the experience of mission students like the Chishawasha Boys, Anedeto Gaspar's story is one of personal experience as a child of the missions. In *Assimilation and Discrimination: Catholic Education in Angola and the Congo*, his personal account of the missions system, Gaspar recalls the two categories of citizenship at the time of his childhood, separated by one's education.²¹ His educational status was determined by his existence as a confessing, tax paying Catholic and his ability to speak fluent Portuguese. This type of communal division and exclusion worked towards the same ultimate goal as institutions like the Chishawasha boys in colonial Zimbabwe; each exemplify the ways in which missionaries reshaped what it meant to be a valued member of society based on one's level of conformity to colonial culture. Importantly, both Chikowero and Gaspar discuss the thematic resistance to European hegemony in African missionary schools. As Gaspar explains, there existed a general disdain among young African students for the way they were taught in missionary schools, stating that "too much emphasis has been placed on religious teachings at a time when we needed other skills."²² Chikowero, too, writes, "despite the certain physical and epistemological violence, many Africans approached the inevitable school with their own agenda, seeing it as a technology they could harness to survive and to challenge the same white overlordship that imposed it."²³

²¹ Gaspar, Anedeto. "African Responses to Missionary Education." *Assimilation and Discrimination: Catholic Education in Angola and the Congo*. Teacher's Press, New York: 1975. Print.

²² Ibid.

²³ Chikowero, Mhoze. *African Music, Power, and Being in Colonial Zimbabwe*. Bloomington: Indiana UP, 2015. Print.

In *Of Water and the Spirit: Ritual, Magic, and Initiation in the Life of an African Shaman*, Malidoma Somé uses his own autobiography to illustrate many of the educational methods, punitive practices, and cultural implications central to missionary education in Africa as a whole. Kidnapped by missionaries at the age of four from his Dagara home in colonial Burkina Faso, Somé vividly recalls his experiences in missionary education and training. He recalls that for fifteen years he was “forced to learn about the white man’s reality...[in which] the African continent was mentioned only in the context of the white man’s involvement with it.”²⁴ When he once challenged the curriculum, a clergyman responded, “do you think the Christian mission would invest so much money in you just to train you to become an ideological delinquent? This institution does not tolerate this kind of free thinking.”²⁵ He also details the punitive practice of “The Symbol,” in which any student who spoke in an African language was forced to wear the skull of a dead goat hanging from a coarse rope necklace. In discussing the structure of the colonial missionary education, Somé analyzes the purpose of discipline and asserts the importance of community in culture in the educational process.

Chikowero, Gaspar, and Somé all identify Eurocentric curriculums, behavioral standards, and punishment as ways in which the colonial missionary education system in south and West African countries dismantled African culture. Scholarship on the impact of Eurocentric education is not limited to the colonial era in Africa; modern scholarship on U.S. public education analyzes many of the same methods. Scholars such as Pedro

²⁴ Somé, Malidoma. *Of Water and the Spirit: Ritual, Magic, and Initiation in the Life of an African Shaman*. Penguin Books, 1994. Print.

²⁵ Ibid

Noguera, Monique Morris, John Raible and Jason Irizarry, all work towards an understanding of criminalization in school that centers the historical/socio-political context of white supremacy/hegemony, as well as what such an understanding means for education policy.

In the oft-cited *The Trouble with Black Boys and Other Reflections on Race, Equity, and the Future of Public Education*, Pedro Noguera explains that Black boys' academic failure cannot be solely attributed to institutional discrimination or poor individual choices, but that there is a relationship between the two factors.²⁶ He defines Black boys as the "miner's canary" of public education who alert us to the failings of public education. Noguera cites a lack of basic needs being met, stereotype threat, and tracking as negatively impacting students in public schools. In discussion of the combination of risk factors that impact the lives of Black male youth, Noguera explains that "one out of every three Black children is raised in a poor household...and poor children often have unmet basic needs." He goes on to explain that poverty increases so many risk factors for a child, that it is almost impossible to establish "cause-and-effect" relationships between many of the experiences that disproportionately affect poor children; it is clear, however, that poverty impacts a child's presence and performance in school.

Poverty and the lack of basic needs negatively impact a child's education in various ways. For example, Noguera explains how lack of access to health care leaves the vision problems of young impoverished children untreated. If a child cannot afford to see a doctor, let alone afford prescription glasses, their vision problems can easily be

²⁶ Noguera, Pedro. (2008). *The Trouble with Black Boys and Other Reflections on Race, Equity, and the Future of Public Education*. United States of America: Jossey-Bass, Print.

mistaken for reading problems, which might contribute to the overrepresentation of poor children in remedial classes. Noguera also discusses the significance of stereotype threat, in which “deeply embedded stereotypes that connect racial identity to academic ability, affect both teachers’ expectations of students and students’ expectations of themselves.” Direct consequences of stereotype threat can be seen in the institutional process of tracking students. Noguera contends that “the organization of academic opportunity in schools can serve as a means to reveal the practices through which racial inequality is produced and maintained” in schools. Students at Berkeley High, for example, when placed in lowest level math classes, “were not on track to complete [UC] science and math requirements.” Over 80% of these students were Black and Latinx. Even more troubling, Noguera explains that “course assignments in math were made by a counselor who based their decision on a review of student transcripts without a formal assessment of student ability,” clearly illustrating the abysmal lack of equity in tracking practices.

While Noguera provides much needed socio-political context for the experiences of students of color in public education, in *Pushout: The Criminalization of Black Girls in School*, Monique Morris provides the historical context for Black girls’ in-class treatment and resistance, while also performing comprehensive analysis of failing educational and punitive methods.²⁷ Morris details the criminalization of Black girls in school through an analysis of current educational methods and punitive practices, through a specifically Black Feminist lens. She discusses the role of zero tolerance policies, exclusionary discipline, Security Resource Officers, and labeling as primary promoters of such criminalization, while also historicizing

²⁷ Morris, Monique (2016). *Pushout: The Criminalization of Black Girls in School*. New York: The New Press. Print.

the importance of educating Black girls. Through an analysis of U.S. racial history, she asserts that education was systematically denied to slaves because it is a known tool of liberation. In this context, learning to read was a means of dignity reclamation and self-legitimization for Black women and Black people as a whole. Morris also details educational methods such as irrelevant curriculum, de-legitimation of emotions, and the granting of “permission to fail,” that act in “pushing girls out” of the educational environment.

With foundational literature such as Noguera’s and Morris’ highlighting the failing educational methods and punitive practices in U.S. schools, educational reform scholarship has developed a focus on teacher education and preparation for classrooms in the current historical, social, and political context. In their article “Re-directing the Teacher’s Gaze,” Raible and Irizarry perform an interesting analysis of teacher education, and the reforms that need to be made to the preparation of teachers before they enter the classroom as agents of social control.²⁸ Immediately and explicitly connecting the current experiences of underrepresented students to a global history of colonization, the authors argue that the surveillance role played by teachers results in the global disempowerment and disproportionate incarceration of youth of color. In deconstructing this surveillance role of teachers, the authors argue that teacher-education should contextualize teachers’ role based on the current socio-political context of racialized criminalization in schools. A specific educational method referenced throughout the article is the fixation with behavior management. The authors argue that, in addition to diversifying the educator workforce, white teachers must

²⁸ Raible, John and Irizarry, Jason G., “Redirecting the teacher’s gaze: Teacher education, youth surveillance, and the school-to-prison pipeline” (2010). *Faculty Publications: Department of Teaching, Learning, and Teacher Education*. 188.

become critical consumers of educational policies and need to actively resist their hegemony. Raible and Irizarry define this process as “transracialization,” a term for which they cite themselves but do not explicitly define, by which allies can, hopefully, engineer schools as sites of anti-racist resistance.

Transracialization, they posit, can produce “critical consciousness about our personal roles in larger institutional structures.” Though well meaning, this concept, newly introduced in the conclusion, confuses the authors’ exact argument and centers agency among white teachers only. In this way, it falls short of producing strong recommendations and interventions. A final piece of literature that contradicts the oversimplified and white-centered conclusions of Raible & Irizarry is Winn and Behizadeh’s “The Right to Be Literate: Literacy, Education, and the School-to-Prison Pipeline.”²⁹ Winn and Behizadeh reconstruct the definition of “literacy” not just as the ability to read and write, but the ability to apply critical consciousness to what is read and what is written. They argue that youth-centered critically conscious scholarship can disrupt and dismantle the school-to-prison pipeline: if a central focus is placed on students having a *critical* understanding of the information they receive, in the classroom and in the outside world, students are more likely to exert agency against the systems that socialize them as deviants. Through analysis of educational methods such as language requirements, “No Child Left Behind”-style testing, colorblindness, discourses of deficiency, culturally irrelevant curriculums, and abstinence only until marriage (AOUM) curriculums, Winn and Behizadeh illustrate both the discrimination and the disconnect from students’ lived experiences that

²⁹ Winn, M. T., & Behizadeh, N., (2011). “The Right to Be Literate: Literacy, Education, and the School-to-Prison Pipeline.” *Review of Research in Education*. 35, 147-173.

characterize the US public school system. The authors also interrogate punitive practices, such as exclusion for subjective behaviors, contempt citations, and double standards in the punishment of girls, to further illustrate how students are criminalized in their educational experiences.

Ultimately, a vast majority of educational and punitive practices fail students of color. These failings produce Gloria Ladson Billings' concept of "educational debt," which Winn and Behizadeh analyze in the context of racialized public education funding discrepancies, as well as the safety-net that students of color lose when they are taught by primarily white instructors. Additionally, the authors analyze the specific impact of the aforementioned methods and policies on Black/Brown girls. Finally, the authors argue for the reinstatement of the safety net, production of critical consciousness, Youth Participatory Action Research (YPAR) and the incorporation of student agency, as a means of restoring the right to literacy and paying off the educational debt.

Whether by implicit bias, exclusionary discipline, discourses of deficiency, or otherwise, students of color are victims of Eurocentric hegemony in education, resulting in the criminalization of their cultures and identities. Though occurring in different eras and on different continents, many of the educational methods that afflict U.S. students of color – such as Eurocentric teaching methods, Eurocentric behavior standards, and language requirements – are neocolonial products of a system that predates mass incarceration and the school-to-prison pipeline. Many authors historicize the school-to-prison pipeline in the context of colonialism and capitalism; however, little if any scholarship has analyzed the presence of explicitly colonial educational methods in the "post-colonial" setting. This study builds upon current knowledge, moving away from policy recommendations that seek to reverse a Eurocentric

criminalization phenomenon that began in the 1970s, arguing instead that public education is inherently colonial in its performance and function. As such, the current trend of social scientists advocating for “cultural competency” must be replaced with intentional and critical conscious advocacy for cultural empowerment.

Findings/Conclusion

Educational Methods

In analyzing the educational methods of colonial mission schools and modern U.S. public schools, I have identified three patterns: (1) Eurocentric curriculums, (2) Eurocentric behavioral standards, and (3) the maintenance of bare literacy. Eurocentric curriculums include language requirements, histories taught from the Eurocentric perspective, as well as the overall absence of Black/Latinx perspectives in the preparation of teaching plans. Eurocentric behavioral standards have similar roots; schools across cases punished cultural behaviors/symbols that did not align with the hegemonic standard and rewarded students for the abandonment of behaviors that explicated their ethnic cultural identities. Finally, bare literacy is a shared pattern, purposely maintained throughout colonial education, as well as through specific modern U.S. practices such as tracking.

Punitive Practices

Three of the most prevalent punitive practice patterns are: (1) the criminalization of cultural expression, (2) exclusionary discipline, and (3) panoptic surveillance. As highlighted throughout the literature review, the criminalization of cultural expression is promoted by educational methods (such as Eurocentric behavioral standards) but is maintained by systems of punitive control such as panoptic surveillance, often manifesting as

exclusionary discipline. While systems of panoptic surveillance model themselves after prison institutions, exclusionary discipline such as detention, suspension, and expulsion – experienced by African scholars like Anedeto Gaspar and Malidoma Somé, and analyzed by public education scholars such as Pedro Noguera and Monique Morris – often funnel students into juvenile incarceration and criminal identities.

Cultural Implications

The cultural implications are vast, including three central experiences: (1) the loss of cultural capital, (2) the loss of social capital, and (3) a cycle of criminality and resistance. Across cases, students report a loss of connections to cultural forms of knowledge and cultural histories/identities. Similarly, hegemonic educational methods and punitive practices deprive Black/Latinx students of basic social capital, such as a network of trusted teachers, or worse, an education altogether. Finally, the criminalization at the center of educational and punitive methods results in students' resistance to school policies. Instead of recognizing students' resistance as a self-validation mechanism, educational institutions re-criminalize them in a vicious cycle that solidifies their criminalized identities.

Discussion & Further Research: Towards a New Model

Based on my above findings, I argue that there are six practices that should be central in the development of a new dominant educational model: (1) informed and relatable instructors, (2) communal and cultural connections, (3) the de-criminalization of resistance, (4) relevant curriculum, (5) critical literacy, and finally, (6) student participatory engagement and agency. The first two elements, (1) informed instructors and (2) communal connections, require

critical changes to teacher education. Teachers must act as a safety net for their students, and should operate from a Critical Race Theory (CRT) framework; in other words, instructors must have a social, political, and historical understanding of their students' communities and identities. When instructors operate with a CRT framework, they can combat the presence of Eurocentric behavioral standards and restore students with social and cultural capital.

The following three practices, (3) de-criminalizing resistance, (4) teaching relevant curriculums, and (5) teaching critical literacy, stem from the same social, political, and historical understandings. Informed and relatable instructors must be able to historicize student experiences, as well as contextualize students' perspectives through practice and curriculum, actively resist the criminalization of students, and teach students to constantly operate with their own critical social, political, and historical understandings. Combined, these practices assume the socially constructed nature of crime and actively contribute to the development of positive student identities. When practices 3-5 are used in conjunction, instructors and institutions can combat the cycle of criminalization and resistance, Eurocentric curricula, and bare literacy. Combatting the criminalization of students inherently combats exclusionary discipline, and demands the abandonment of hyper-surveillance altogether. Finally, (6) encouraging student participatory engagement and agency, awards self-validation and re-centers student needs in the classroom. Student participatory engagement encourages critical literacy, and encourages students to produce the very knowledge that will shift dominant practices and understandings. Adherence to these six practices contests each of the negative similarities I found in educational methods, punitive practices and cultural implications.

My future research will have three central focuses. First, I plan to diversify my data set by continuing case study comparisons of educational methods, punitive practices, and criminalization across colonial and neocolonial educational systems that serve marginalized communities. African countries were not the only site of anti-ethnic missionary education, and the U.S., while unique in its rates of juvenile incarceration, is far from alone in its white supremacist educational methods. In diversifying my cases, I will argue that anti-ethnic educational methods and punitive practices are the hegemonic global standard, and have intentional roots in colonialism and imperialism. Second, I will focus primarily on comparative analysis of culturally responsive educational models, so I can survey best-practices and solutions. Finally, I will begin to apply Marxist theory to my findings in an attempt to analyze educational structures in relationship to global capitalism. My study illustrates the ways in which schools are culturally oppressive structures, but future research will ask how oppression and exploitation are related, and how cultural implications have tangible economic outcomes at macro and micro levels. I believe I will find that modern U.S. public schools are *functionaries* of white supremacy – the ideology of colonialism – that use the same methods of epistemicide and cultural genocide as mission schools to exploit minority populations. In attempting to prove this hypothesis, I want to not only call attention to the globalized issue of cultural disarmament through education, but also develop entirely new educational systems that reverse its harmful impact.

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Restringido al Progreso (Restricted Progress): Systemic Literature Review of Latina/o Students Persistence and Retention within STEM Majors

Jasmin Morales

Mentor: Dr. Denise Segura
Department of Sociology

Abstract

The Latina/o¹ population is the fastest growing minority in the United States; however, the number of these college students who complete a Science, Technology, Engineering and Mathematics (STEM) major at four-year institutions is not increasing commensurate with their representation in higher education. Why Latina/o students are not well-represented in the STEM majors is a critical question given the current and projected need for professionals trained in these areas. In this study, I review relevant literature to explore the question: what factors influence retention and persistence of Latina/o students in STEM majors in four-year institutions? I analyze three different approaches that identify key barriers that explain why Latina/o students leave these majors. I also analyze the factors that help Latina/o students persist in these majors. My analysis of the literature organized around the themes of institutional conditions, familial and social support, and individual experiences points to ways that can help Latina/o students maintain attachment to these fields. In addition, I identify gaps within the research that need to be explored further to strengthen the STEM pipeline for Latina/o students.

¹ The term Latina/o to refer to persons of both genders consistent with much of the currently available scholarly literature.

Introduction

As a first-generation Latina student in the United States educational system, I encountered several barriers in my educational path. The rigorous courses required of STEM (Science, Technology, Engineering, and Math) majors during my first year of college demonstrated how ill prepared my Latina/o friends and I were compared to many other students. Although I worked hard, I still received low grades. I constantly communicated with my lab instructor and consistently went to office hours, but my grades did not improve. I felt defeated and I decided to change my major to Sociology to pursue another passion.

My experience led to my interest in researching Latina/o student's retention and persistence within STEM majors in four year institutions. Latina/os are the fastest growing minority in the United States, but the number of students pursuing higher education is not equal to the rapid increase in population. In terms of STEM, the number of Latina/o students going into these majors is stagnant. This is known as the "leaky educational pipeline," a metaphor often used to describe how students, specifically minorities, do not move through the primary, secondary, and postsecondary levels of education at a pace equal to other students.²

This study will focus on the factors that influence Latina/o student's retention and persistence in STEM majors in four-year institutions. In addition to the growth of the Latina/o community in the United States, opportunities are increasing for those within STEM fields. I conducted a systematic literature review to identify the research that has been done in this area. Through this method, I seek to

² Solorzano, D. G., & Yosso, T. J. (2006) *Latino Policy & Issues Brief*, 13, 3.

understand the previous studies, get a handle on relevant background information, and discover gaps in the research.

Many studies focus on the barriers that Latina/o students encounter in the educational system; however, I focus specifically on the barriers encountered in STEM majors in four-year institutions because Latina/os are underrepresented in the sciences. I found a number of studies that explored the challenges that Latina/o students encounter in STEM majors and how they overcome these barriers. Latina/o students face a wide range of barriers in comparison to other ethnicities due to their culture, socioeconomic status, traditions, and cultural capital.

Theoretical Framework

In much the same way that my personal experience initially sparked my curiosity, certain crucial theories furthered my interest in investigating inequalities in accessibility and success in STEM. One central theory, Critical Race Theory (CRT), moves the research lens away from a deficit view of communities of color as places marked by cultural poverty and focuses on and learns from the often unrecognized rich array of cultural knowledge, skills, and abilities possessed by socially marginalized groups.³ CRT sets the foundation for questions about the persistence of Latina/o students in STEM since CRT changes the negative lens through which students of color are often viewed. Instead, it highlights the positive factors, particularly how students navigate the unjust system of higher education.⁴ Utilizing CRT, I can observe both the negative and positive factors that impact Latina/o students in order to gain a clearer

³ Solorzano, D., Ceja, M., & Yosso, T. (2000). *Critical Race Theory, Racial Microaggressions, and Campus Racial Climate: The Experiences of African American College Students*.

⁴ *Ibid.*, 63

grasp of why they are underrepresented in STEM and get a better handle on strategies useful for enhancing the positive factors to increase their participation in STEM.

As CRT is crucial in questioning the inequalities in education, Oppositional Culture Theory also raises questions about the impact of culture on the outcomes of students of color in comparison to their counterparts. Oppositional Culture Theory examines how social and economic inequality yields disparate outcomes for students of subordinate class or racial and ethnic backgrounds because such inequalities undermine some groups' beliefs and expectations about their chances for academic success.⁵ Oppositional Culture Theory demonstrates the two different worlds, the world of academia and the world of their home and culture, students of color must navigate. These experiences are important to Latina/o students' education because they may help to explain their persistence and retention in STEM, as well as their persistence and retention in the education system. Both Critical Race Theory and Oppositional Culture Theory highlight the importance of looking at institutional inequalities, and at the social and individual perspective of Latina/o students because cultural factors and experiences of discrimination can play a large role in determining why students decide to change their major from STEM to a non-STEM discipline. These theories provide a foundation for my research question and also offer the ability to build themes that I will use throughout my project to group the different positive or negative impacts these experiences can have on Latina/o students in STEM.

⁵ Carter, P. (2003). "Black" Cultural Capital, Status Positioning, and Schooling Conflicts for Low-Income African American Youth

Methodology

To understand what factors influence Latina/o students' persistence and retention in STEM majors in four-year institutions, I constructed a broad systematic literature review that helped me to identify a wide range of studies on Latina/o students in these fields. I accessed the following electronic databases: JSTOR, ERIC, Harvard Educational Review, Sage Journals, Education Source, Google Scholar, and PsycInfo.

I also found several relevant articles on organizational websites, including the Pew Research Center, U.S Census Bureau, American Sociology Association, and American Education Research Association. The inclusion of different perspectives drawn from a range of articles should help to reduce publication bias in the project.

The search focused on various topics and perspectives. Terms I used included the following:

- At-risk Latina/o youth
- Critical Race Theory
- Discrimination towards students of color in STEM
- Educational pipeline
- Faculty expectations in STEM
- Faculty guidance in STEM
- First-generation Latina/o students in STEM
- Latina/o student and family expectations
- Latina/o students' expectations
- Latina/o students' resilience
- Latina/o success rate in STEM
- Micro-aggressions towards minorities in STEM
- STEM gender gap within Latina/o students

Data Collection

I began with an exploratory literature search because I wanted to identify a broad range of articles that related to my research topic. I chose articles based on the following criteria: (1) relevance to the research questions; (2) theory based research; (3) valid limitations within the articles; and (4) relevance to project of diversifying the STEM field. I excluded articles that included the following: (1) conclusions did not support their hypothesis; (2) invalid limitations; (3) over generalization.

Data Analysis

Currently, Latina/os hold only 8% of positions in STEM that require certifications and degrees, and they are often in lower-paying services positions.⁶ This is due, in large measure, to an educational system that has failed Latina/o students interested in STEM. I organized the data based on three themes that were present throughout the research that I analyzed: institutional experience, social and familial support, and individual experience. These three themes appear often throughout different works. Within each theme, I paid particular attention to differences related to: Gender, socioeconomic status, cultural background and cultural capital as well as factors closely related to education and schooling, such as building communities, consejos (advice), counter stories, discrimination, expectations, faculty interaction, guidance, Hispanic-Serving Institutions, micro-aggressions, and stereotypes. All the data addresses these sub-themes, and through them I explain how each can influence the persistence and retention of Latina/o students in STEM major.

⁶ Malavé, I., & Giordani, E. (2015). *Latino stats: American Hispanics by the numbers*. New York:New Press.

Results

Demographic trends indicate that an increasing number of STEM professionals will soon be retiring.⁷ Currently, the Latina/o population is the fastest growing minority in the nation. Research indicates the importance of the Latina/o community considering their academic experience and pathways towards the STEM majors. Guiding Latina/o students towards STEM majors will prepare many of them for careers that will become open and help diversify the STEM field.

Institutional Experience

A significant number of Latina/o students attend public schools located in segregated neighborhoods with above average poverty and crime rates, and where instructors have low expectations and enforce “zero tolerance” disciplinary practices.⁸ These institutions tend to be overcrowded, poorly maintained facilities, with minimal resources, and few faculty of color.⁹ Additionally, many Latina/o students are “tracked” into remedial or vocational pathways.¹⁰ The Educational Pipeline shows that out of every 100 Latina/o elementary school students in the United States, 54 will graduate from high school, 11 will graduate from college, 4 will graduate from graduate or professional school, and less than 1 will receive a doctorate degree.¹¹ In 2010, research on Latina/o students in STEM found that only 16 percent of Latina/o adults aged 25 to 64 held an

⁷ U.S. Congress (2006). *Departments of Labor, Health and Human Services, Education, and related agencies*. Appropriations for 2007.

⁸ *Ibid.*, 68

⁹ Solorzano, D. G., & Yosso, T. J. (2006) *Latino Policy & Issues Brief*, 13, 3.

¹⁰ *Ibid.*, 3

¹¹ Huber, L. P., Huidor, O., Malagon, M. C., Sanchez, G., & Solorzano D, UCLA Chicano Studies Research Center., issue 7 (2006)

associate's degree or higher in a STEM field.¹² However, this research does not indicate whether their STEM degrees resulted in careers in STEM fields. Overall, Latina/os have the lowest rate of degree attainment within post-secondary education when compared with four other major racial/ethnic groups: whites (51 percent), blacks (32 percent), Asians (59 percent), and Native Americans (27 percent).¹³

In four year institutions, Latina/o students are currently underrepresented in terms of the percentage of students pursuing and obtaining STEM degrees.¹⁴ In addition, research indicates that nearly half of all Latina/o students who declare majors in engineering or sciences change majors during college and do not earn a degree in either area.¹⁵ The data tell us that Latina/o students who are able to build community in four-year institutions through clubs, organizations, and programs can attain the social and cultural capital necessary to help them succeed in difficult majors.¹⁶ Latina/o students who build or find community are able to access resources and assistance to increase persistence and retention in STEM majors in comparison to other Latina/o students who do not find a community or counter-space.¹⁷ As Daniel Solórzano states, "A counter space is when a student has the ability to build their own community within their environment and counter spaces

¹² Solorzano, D. G., & Yosso, T. J. (2006) *Latino Policy & Issues Brief*, 13, 3.

¹³ *Ibid.*, 1

¹⁴ *Ibid.*, 1

¹⁵ Crisp, G., Nora, A., & Taggart, A. (2009). *Student Characteristics, Pre-College, College, and Environmental Factors as Predictors of Majoring in and Earning a STEM Degree: An Analysis of Students Attending a Hispanic Serving Institution.*

¹⁶ Solorzano, D. G., & Yosso, T. J. (2006) *Latino Policy & Issues Brief*, 13, 3.

¹⁷ *Ibid.*, 3

have a role as a place of comfort, nurturance and a place of building communities of resistance” (Solorzano, 2001).

Not only do Latina/o students need to build community with other students, but with faculty as well. Increasing the number of diverse faculty in four-year institutions to whom these students can look as role models enhances the persistence of Latina/o students in STEM.¹⁸ The role model effect translates into minority students, particularly those living and attending elementary and high schools in disadvantaged settings, benefitting from seeing adults in positions of authority.¹⁹ Some scholars have suggested that having an adult role model could alleviate the “burden of acting white” among underrepresented minority students by influencing the cultural value placed on academic success.²⁰ Other researchers argue that minority teachers are more likely to have high expectations for minority students.²¹ As Solórzano states, “Opportunities for involvement with role models increase motivation especially when peers are from similar cultural and socioeconomic backgrounds” (Solórzano, D. G., & Yosso, T. J. 2006). Overall, these observations were the most common throughout articles and books, which explain that better preparation, building community, and hiring more faculty of color in STEM can also help increase the retention of Latina/o students in STEM majors.

Familial Guidance/Support

Familial guidance can have a large impact on whether Latina/o students decide to pursue STEM majors. It

¹⁸ Goldhaber, D., Theobald, R., & Tien, C. (2015). *The Theoretical and Empirical Arguments for Diversifying the Teacher Workforce: A Review of the Evidence*. Seattle. Retrieved from <http://2fwww.cedr.us/papers/working/CEDR WP 2015-9.pdf>

¹⁹ *Ibid.*, 2

²⁰ *Ibid.*, 2

²¹ *Ibid.*, 3

can be the key difference between high school students who maintain their interest in pursuing a STEM career throughout high school and those who lose interest.²² However, Latina/o students tend to be at a disadvantage in terms of parental guidance since their parents are often traditional, first generation, monolingual in Spanish, and working class.²³ Due to traditional views Latina/o families can hold, the Latina/o culture often transmits a particular version of gender-related roles and behaviors. These beliefs can potentially contribute to the gender gap between Latina/o students within the STEM field. Although there are Latina/o families that give emotional support to their children to help them pursue the career of their choice, some traditional beliefs can contribute to why certain Latina/o students choose specific careers.

Additionally, research has found that Latina/o parents struggle with attending to their children's educational needs because of financial constraints such as holding more than one job, language barriers, and being unsure how to help their children when it comes to their education. Family structure is important to the success of the student.²⁴ The make-up of the family (two parents or single parent/guardian, number of siblings) can affect the financial stability of the family.²⁵ Research indicates that parental involvement and academic motivation often differ for youth in varying family structures.²⁶ For instance, a single mother

²² Simpkins, S. D., Price, C. D., & Garcia, K. (2015). *Parental support and high school students' motivation in biology, chemistry, and physics: Understanding differences among Latino and Caucasian boys and girls*

²³ Fernandez, L. (2002). *Telling Stories About School: Using Critical Race and Latino Critical Theories to Document Latina/Latino Education and Resistance*. Qu

²⁴ Henry C, Plunkett S, Sands T, *Journal of Divorce & Remarriage*, vol. 52, issue 6 (2011) pp. 370-390

²⁵ *Ibid.*, 372

²⁶ *Ibid.*, 372

with five children will have a harder time attending to every child's educational needs when she also needs to provide for them than a family of two parents and two children. Family structure can impact the amount of time a parent has to invest in their children's education.

Although much of the data conclude that traditional views among Latina/o families can affect Latina/o students' pursuit of educational goals, Latina/o families can also provide emotional support, which is a positive factor in increasing persistence and retention.²⁷ In addition to emotional support, Latina/o families expect their children to succeed in their education. However, Latina/o students in college may find it difficult to be away from their families, which can affect their academic persistence as STEM majors. The difficulty Latina/o students have with being away from their family is an indicator of the importance of familial support and building community in one's educational institution. Latina/o students who find a community or a critical mass of students are more likely to remain in school because a sense of community helps them be better able to cope with the college environment and the emotional toll of missing home. Building these social communities will not only increase Latina/o students' motivation but will also allow the students to create a home away from home. Familial and social guidance can be a determining factor, which can help Latina/o students pursuing science degrees because they understand they are not alone when encountering challenges within these difficult majors.

²⁷ Taningco, M., Mathew, A., and Pachon, H. (2008). *STEM Professions: Opportunities and Challenges for Latinos in Science, Technology, Engineering, and Mathematics. Challenges.*

Individual Experience

The individual experiences Latina/o students encounter can change their persistence and retention as STEM majors. A Latina/o student may encounter discrimination, stereotyping, and microaggressions, which can result in feelings of isolation and disconnection from other students and faculty in the sciences.²⁸ The marginalizing experiences that students of color encounter are subtle yet persistent forms of racism that have pronounced adverse effects on their experiences in STEM. These negative factors can impact their academic self-concepts and may lead them to believe that they cannot overcome the challenges inherent in STEM majors.²⁹

A positive academic self-concept is the single most important factor influencing retention in college because students that have a positive self-concept tend to be confident about themselves and their abilities.³⁰ A portion of Latina/o students are able to transform negative experiences into motivations to persist as STEM majors and better their self-concept because they want to prove people who doubted their abilities wrong. Alongside Latina/o student's self-concept, there is a gender divide. Latinas tend to encounter racism, discrimination and sexism from students and faculty more often than Latino males. This is due to the fact that the STEM field is male dominated; women will often find themselves at the intersection of racism and sexism.³¹ Although Latinas now outnumber Latinos in college and the number of bachelor's degrees earned by Latinas is growing

²⁸ Yosso, T. J., Smith, W. a, Ceja, M., & Solórzano, D. G. (2009). Undergraduates. *Harvard Educational Review*, 79(4), 659–691.

²⁹ McGee E, *American Educational Research Journal*, vol. 53, issue 6 (2016) pp. 1626-1662

³⁰ *Ibid.*, 1636

³¹ Rodriguez, S., Cunningham. K., Jordan. A., (2017) *STEM Identity Development for Latinas: The Role of Self- and Outside Recognition* pp. 3

faster than the number awarded to Latinos, Latinas have the lowest persistence and retention in STEM majors.³² Increasing the availability of resources, organizations, and programs is crucial to assist Latinas in increasing and retaining their presence in STEM majors and giving them the resources to make their own counter space. Research indicates that individual experiences can either be a positive or negative factor in persistence and retention for Latina/o students because they either transform these experiences into motivation, or allow these experiences to defeat them, which leads them towards changing their career path.

Discussion/Conclusions

Throughout this systematic literature review, several factors are apparent that affect the retention and persistence of Latina/o students in STEM majors. The negative factors include: discrimination, stereotyping, microaggressions, lack of preparation, lack of diversity in faculty, lack of positive faculty interaction, segregated and under-resourced institutions, and lack of resources for Latina/o students. On the other hand, positive factors that influence persistence and retention are building communities, positive faculty interactions, family support, availability of resources, college organizations and programs specifically geared to Latina/o students, and positive academic self-concept.

Some Latina/o students are able to convert negative factors into motivation to overcome the difficulties as STEM majors while others are overwhelmed by negative factors and change their academic ambitions. Finding solutions to these challenges is critical because currently only 8% of STEM career positions are held by Latina/os.³³ Additionally, within that 8%, the majority have only attained an associate

³² Ibid., 52

³³ Malavé, I., & Giordani, E. (2015). *Latino stats: American Hispanics by the numbers*. New York:New Press.

degree or certification.³⁴ Research indicates that by 2020 there will be a 62% increase in STEM opportunities, and with the Latina/o population being the fastest growing minority in the United States, more resources and aid are needed to help Latina/o STEM students succeed in four year institutions.³⁵ Helping Latina/o students succeed in STEM will bring different visions to these fields that are rapidly developing and expanding. Making the STEM field as diverse as the population in the United States can help improve the connection between advances in STEM and all communities these advances need to serve.

Studies show that the issues that Latina/o students encounter in academia can be addressed by increasing strategies that have already helped Latina/o students achieve higher education and succeed in STEM majors in four-year institutions.³⁶ Programs and organizations that help Latina/o students should be available throughout all secondary institutions and not just a select few. Not only does there need to be changes in secondary education, but there must be a change in all education, Current curriculum in secondary education often fails to prepare Latina/o students for the many challenges encountered in STEM in college. Although Latina/os still have higher dropout rates than any other race and are still currently the lowest represented minority in STEM majors, change is possible.³⁷

Limitations and Future Research

Despite the effort to do an extensive review of the research conducted in this area, I was only able to examine a limited amount of the available material due to time

³⁴ Ibid., 96

³⁵ The White House. (2014). Hispanics and STEM education, (July), 1–2.

³⁶ Ibid., 1

³⁷ Malavé, I., & Giordani, E. (2015). *Latino stats: American Hispanics by the numbers*. New York:New Press.

constraints. However, I will continue to conduct research in this area because the STEM field is in significant need of diversification. Additionally, due to the range of research reflected in the articles I reviewed, I was not able to explore specific generational differences in the population of the Latina/o students because the articles tended to conflate first, second, and third generation students. However, in future research I will narrow down the specific Latina/o generations that are targeted in the research and potentially focus on first generation students.

Several other avenues for research were identified through this review of the research materials. I identified very little research on Hispanic Serving Institutions (HSIs). Overall, HSIs have been able to increase the amount of Latina/o students in STEM fields by twenty percent, and their retention rate is consistent throughout the years.³⁸ HSIs have more resources, programs, and organizations available for Latina/o students. One possible question for future research is: how have Hispanic Serving Institutions increased their percentage of Latina/o students in STEM majors, and would applying their strategies to all institutions increase the general number of Latina/o students in STEM? Additionally, although I found an abundance of research on gender and race, there is a gap in the literature on how social class can impact students of color in STEM. In the future, I hope to look at questions of social class and the relationship of class to the persistence of Latina/o students in STEM. Lastly, I would like to expand my research to locate and analyze counter-stories from Latina/o student experiences in STEM fields. A counter-story consists of relating stories of people whose experiences are not often told.³⁹ Counter-stories are also tools for exposing, analyzing, and

³⁸ Crisp G, Nora A, Taggart A, *American Educational Research Journal*, vol. 46, issue 4 (2009) pp. 924-942

³⁹ Solorzano, D. G., & Yosso, T. J. (2006) *Latino Policy & Issues Brief*, 13, 3.

challenging the majoritarian stories of racial privilege.⁴⁰ They destroy complacency, challenge the dominant discourse on race, and further the struggle for racial equality.⁴¹ By hearing the voices of the students themselves, we will be able to help improve their academic cultural capital in the STEM field to change the repetitive narrative that constantly puts Latina/o students in a negative spotlight within education.

⁴⁰ Ibid., 3

⁴¹ Ibid., 3

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Chronological Analysis at Mulch'en Witz: Ceramic and Carbon Dating of Plazuela Group B at La Milpa, Belize

Johanna Najera

Mentor: Dr. Gerardo Aldana, Department of Chicana/o
Studies

Toni Gonzalez, Department of Anthropology

Abstract

Within the periphery of the ancient Maya civic-ceremonial center of La Milpa, Belize, the Contested Caves Archaeological Research Project, directed by UCSB graduate student Toni Gonzalez, investigates the archaeological site Mulch'en Witz. Excavations on the Plaza Plan 2 (PP2) architectural group Plazuela Group B and three associated chultuns yielded ceramic, architectural, and carbon data that can assist in determining the functionality of the space. Using this data, I conducted a chronological analysis of the site. For the ceramic analysis, I used Dr. Jeremy Sabloff's Seibal classification system of ceramic sherds to determine a relative date. Diagnostic ceramic sherds were analyzed by their curvature, slip, wall thickness, and surface decorations and categorized to a specific ceramic complex. After analysis, ceramic assemblages predominately date to the Late Classic to Terminal Classic Period (680 CE – 900 CE), while a small assemblage of sherds in the early construction phase date to the Preclassic period (300 BCE – CE 280). To support the ceramic analysis results and to obtain an absolute date for Mulch'en Witz, carbonized charcoal remains will be sampled for radiocarbon analysis to corroborate the ceramic results.

Introduction

With this project I aim to propose the period of utilization of Plazuela Group B and associated *chultuns* at Mulch'en Witz. I was fortunate to be selected as one of the few undergraduates to join the Contested Caves Archaeological Research Project (CCARP) during the 2018 field season. In this research project, the data includes ceramics, architectural components, and radio carbon samples. Given Mulch'en Witz's proximity to La Milpa's large civic-ceremonial center, I hypothesize that the two areas' period of utilization may have overlapped and formed a meaningful connection.

Literature Review

The Three Rivers Region is a study area spanning present-day northwestern Belize, northeastern Guatemala, and some of Quintana Roo, Mexico (Dunning et al 2003:14; **Figure 1**). The Rio Azul, Rio Bravo, and Booth's River are the principal tributaries that flow through the region, eventually merging to form the Rio Hondo. Other ecological features of the Three Rivers Region include limestone uplands and karst hills at the eastern edge of the Peten Karst Plateau, which loosely defines the Central Lowlands region of the Maya (Dunning et al 2003:14; Trein 2016:9). Many of the largest Maya sites are found in the Central Lowlands, including La Milpa in Belize, El Mirador and Tikal in Guatemala, and Calakmul in Campeche, Mexico (Dunning et al 2003; Zaro and Houk 2012).

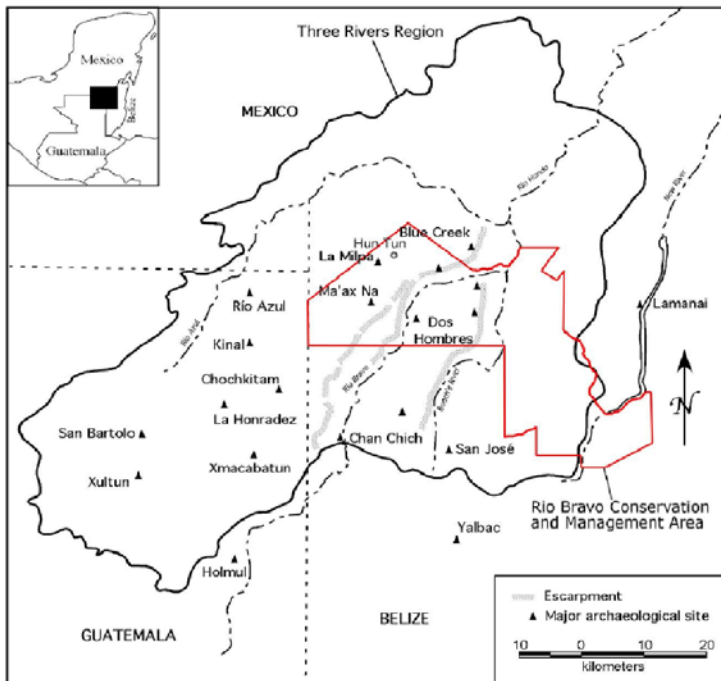


Figure 1 Map of the Three Rivers Region and the Rio Bravo Conservation and Management Area. Modified from Houk 2010

Within the Three Rivers Region and protected within the Rio Bravo Conservation and Management Area (RBCMA) in northwestern Belize lies the ancient Maya site of La Milpa (Trein 2016:9; **Figure 1**). The total core area of La Milpa measures approximately 92,000 square meters, making it the third largest site in Belize after Caracol and Lamanai, respectively (Trein 2016:11; **Figure 2**). Its architectural features include three formal plazas, four temple pyramids, two ballcourts, and twenty stelae within its civic-ceremonial center (Trein 2016; Tourtellot et al 1994). The Great Plaza, or Plaza A, contains the four largest pyramidal structures, two ballcourts, and seventeen of the twenty stelae, thus being the largest at the site. Plaza B and Plaza C are smaller spaces with surrounding courtyards and includes a Southern Acropolis (Zaro and Houk 2012:146).

Several archaeological projects at La Milpa have focused on the architectural construction projects of the monumental buildings (Trein 2016; Houk and Zaro 2011; Zaro and Houk 2012; Tourtellot et al 1994). Scholars have speculated about a subordinate relationship between La Milpa and a larger polity, likely the city-state of Tikal since both sites show a correlation in political trends (Trein 2016; Sullivan and Valdez 2006:75).

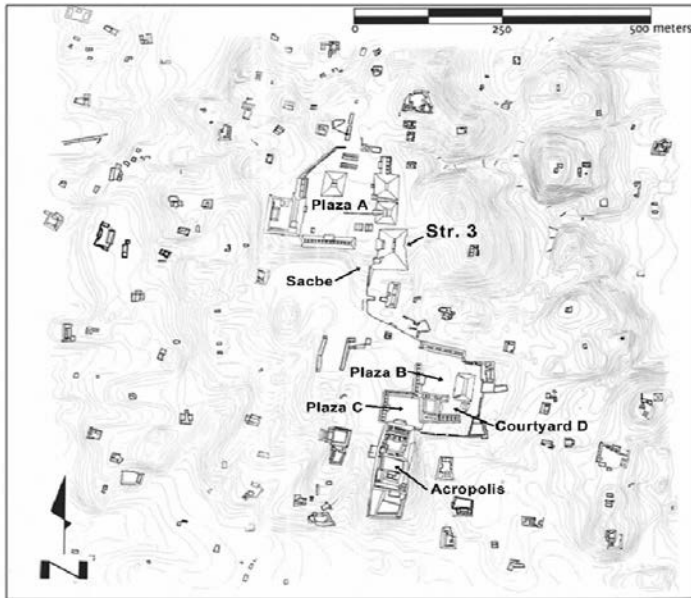


Figure 2 Map of the site core of La Milpa. Adapted from Hammon and Tourtellot 1993, 72

Archaeologists use material culture in the form of ceramic sherds, architectural remains, and hieroglyphs to track changes or developments reflecting social and political trends. Sir John Eric Sidney Thompson, English Mesoamerican archaeologist and epigrapher, was the first modern scholar to survey and excavate at the site of La Milpa, Belize, publishing his findings in 1938 (Hammond 1991:46). In his notes, Thompson observed Stela 7's Initial Series 12 Ahau 8 Pax as the only hieroglyphic date

retrievable from the eroded stelae at the site. Then, in 1991, using the GMT Calendar Correlation method, Norman Hammond converted Stela 7's Initial Series 12 Ahau 8 Pax to date it to November 30 of the year 780 CE. Given the erection of Stela 7 during 780 CE, Stela 7 was associated with the ruler of a figure named Ukay (1991:46). However, since then, the GMT Calendar Correlation has been found to be too early by a few decades (Aldana and V. 2016).

After Thompson's brief visit, La Milpa was thoroughly mapped by Anabel Ford and Scott Fedick in 1988. In their report, Ford and Fedick noted that the ceramics from a looters' backdirt pile spanned from the Late Preclassic (250 BCE – CE 250) to the Late/Terminal Classic (600 CE – 900 CE). Their assessment of the ceramic material is similar to Tourtellot et al's (1993: 120) preliminary analysis of ceramics recovered from surface surveys and excavations indicating occupation from the Late Preclassic (250 BCE – CE 250) to the Terminal Classic period (600 CE – 900 CE). Excavations in La Milpa's site core have recovered Mamom ceramics that date to the Middle Preclassic period (600 BCE – 300 BCE), but little else is known about this early occupation besides the establishment of initial structures (Trein 2016:46).

Based on extensive research in the Three Rivers Region, archaeologists have developed an overarching timeline which tracks the social and political history of the Maya. During the Late Preclassic period (400 BCE – CE 250), a trend of increasing population, sociopolitical complexity, and intensification of construction projects spread across the Maya Lowlands (Trein 2016:46). Subsequently, this expansion trend abruptly shifts, and a political hiatus and/or population decline appears to have occurred, given that few construction projects are represented during the Early Classic period (250 CE – 600 CE) at La Milpa (Houk 2015:177). Interestingly, the highest

number of elite non-utilitarian ceramics are found during this period, suggesting political and economic relationships with large centers like Tikal and Uaxactun in Guatemala (Sullivan and Valdez 2006:76).

The trends of political instability continue through the first half of Late Classic period (600 CE – 780/850 CE) (Trein 2016:50). During the second half of the Late Classic period, there is an acute increase in activity represented in the archaeological record by the appearance of rural communities and monumental construction projects (Trein 2016:50; Sullivan and Sagebiel 2003:33). The Late Classic II, also called the Terminal Classic period (780/850 CE – 900 CE), is characterized by social and political upheaval, which led to large-scale abandonment at La Milpa (Zaro and Houk 2012:156). The ceramic trends show a decrease in production and vessel quality using poor paste, large course inclusions, and little to no slip (Sullivan et al 2007). Finally, during the Postclassic period (900 CE – 1500 CE) the trend of abandonment and overall decline continues as the archaeological material is associated with either visitation or small-scale habitation (Trein 2016:56).

To understand the complexity of the archaeological record at La Milpa, archaeologists used ceramic analysis to interpret the span of these trends. By creating ceramic sequences, archaeologists can also understand ceramic styles as meaningful units of cultural change (Zaro and Houk 2012: 144; Gifford 1976:2). Each distinct unit of the sequence is a ceramic complex, referring to the ceramic styles of a culture relevant to time and space (**see Table 1**). Therefore, complexes identify a culture to which the ceramic is attributed to and track the historical relevance stratigraphically (Gifford 1976:34). Ceramic sequences have been established with different ceramic complexes at Tikal, Barton Ramie, Seibal, and Uaxactun, but the shift in cultural

complexes occurs at about the same time in all the sequences (see Gifford 1976:46: Figure 8).

Dr. Jeremy A. Sabloff established a ceramic sequence for the site Seibal in the Peten, Guatemala after comparing over fourteen thousand selected sherds with their associated proveniences (Willey et al 1975:7). In large part, the ceramic sequence of Seibal was “pieced together from several stratigraphic excavations and general intersite comparisons” (Willey et al 1975:8). The ceramic complexes at Seibal include Real Xe, Escoba Mamon, Cantutse Chicanel, Junco Tzakol, Tepejilote Tepeu, and Bayal Boca. Sullivan et al. (2007:138) note the issue of finding a “break” between Tepeu 2 and Tepeu 3 in the Three Rivers Region due to the absence of Terminal Classic “finewares.” Within the Rio Bravo Conservation and Management Area, 50% to 80% of the ceramics recovered date to Tepeu 2-3 (Sullivan and Valdez 2006:76). This issue clumps together the Late Classic and the Terminal Classic producing a relative date spanning a period of 220 years. Hence, chronological analyses have fewer constraints when paired with analysis of absolute dates, such as radiocarbon analysis.

Table 1 Partial Ceramic Sequence of Seibal Contested Caves Archaeological Research Project (CCARP)

Time Period	Ceramic Complex
Middle Preclassic 600 BCE – 300 BCE	Mamom
Late Preclassic and Proto-Classic 300 BCE – CE 280	Chicanel
Early Classic 280 CE – 600 CE	Tzakol 1-3
Late Classic I 600 CE – 680 CE	Tepeu 1
Late Classic II 680 CE – 820 CE	Tepeu 2
Terminal Classic 820 CE – 900 CE	Tepeu 3

At the periphery of La Milpa, in the area referred to as Mulch'en Witz, UCSB Ph.D. student Toni Gonzalez conducts archaeological research focused on ritual landscapes and sacred geography. The goals of the CCARP are to understand the relationship between the *chultuns* and the architectural groups and tie their use to broader patterns of the cultural landscape (Gonzalez 2018, personal communication).

Under the direction of Toni Gonzalez, the Contested Caves Archaeological Research Project (CCARP) has mapped four architectural groups (Groups A, B, C, and D) and eight *chultuns* (Gonzalez and Lorenz 2017). Mulch'en Witz (Yucatec Mayan for Hill of Many Caves), suitably named for the area, consists of a high concentration of *chultuns*, man-made subterranean chambers, excavated into the karst landscape (Gonzalez and Lorenzo, 2017). *Chultuns* are relatively common in Belize and ubiquitous throughout the Maya region, having a morphology of large multi-chambered spaces resembling natural cave environments. Gonzalez's research contributes to the methodologies and analysis of the typically weathered and damaged material culture commonly encountered in tropical and semi-tropical regions, which are consistently understudied (Scarborough et al 2003).

The area of Mul'chen Witz lies within the periphery of the La Milpa proper, approximately 622 meters northeast of the civic-ceremonial center. Two natural knolls, one in the north and one in the south, make up Mulch'en Witz's topography. Before CCARP began its preliminary research in 2017, the area had only been mapped and studied by Dr. Nick Brokaw, Programme for Belize Archaeological Program ecologist from the University of Puerto Rico-Río Piedras. The 2017 field season was the first extensive archaeological investigation of the area.

In order to accomplish the overall goals of the CCARP, the first step is to figure out the chronological period of utilization. My contribution to the CCARP includes the analysis of ceramic assemblages, architectural construction phases, and carbon samples found at Mulch'en Witz during the 2017 and 2018 field seasons to interpret the chronology of use for this space. To provide context, overviews of both seasons are presented below.

2017 Field Season

In the 2017 field season, Toni Gonzalez and Samantha Lorenz, Project Osteologist/Bioarchaeologist, directed excavations in three out of the initial six mapped chultuns (CH1, CH2, CH3) in addition to three associated surface units for contextual data in Group A (Gonzalez and Lorenz, 2017). The main goal of this season was to gather preliminary data through test pits that would essentially map out the multi-year project at PfBAP. Chultun 1 (CH1), Chultun 2 (CH2), and Chultun 3 (CH3) are located west of Group B. CH1, a collapsed chultun, was excavated near the center of the collapse. Excavations turned up many ceramic sherds and lithics, which were most likely debris fill due to the collapsed opening exposing the inner chamber(s). CH2, a tri-chambered chultun, was excavated by placing a unit in each of its three chambers. Very little material culture was encountered. This is most likely due to the inferences of the chultun being cleaned out at the termination of its use. Excavations at CH3 recovered an *incensario*, or ceramic drum, and a water jar that contained charcoal and botanical residues. Fragmented human remains were also encountered at the same depth as the vessels. Due to time constraints, excavations were put on hold once human remains were encountered in CH3 until the 2018 field season (Gonzalez and Lorenz 2017).

During a systematic survey at the end of the field season, three Plazuela Groups (Group B, Group C, and Group D), along with a seventh *chultun* (CH7) in Group D were discovered. Group datums were situated on the surface of each Group, and GPS points were shot to determine the spatial layout of the Mulch'en Witz area and within the context of La Milpa (Gonzalez and Lorenz 2017). These data laid the foundation for the 2018 field season.

2018 Field Season

Toni Gonzalez's decision to focus the 2018 field season within the confines of Group B is based on its close proximity to the burial in CH3 and the other two excavated chultuns in Group A. The architectural frame of Plazuela Group B (**Figure 3**) resembles that of a Plazuela Plan 2 (PP2) type formal courtyard group, consisting of a central plazuela bordered on three sides by residential structures with a larger shrine structure always positioned to the east (Becker 2014; Sharer 2006:682). Plazuela Group B is constructed on an elevated mound within the landscape. In contrast, CH1, CH2, and CH3 are located at the base of Group B on a natural knoll that runs north to south along the natural escarpment (Gonzalez and Lorez 2018). However, it is still to be determined whether Plazuela Group B at Mulch'en Witz functioned as a residential area. To determine the function of Plazuela Group B, more archaeological research must be conducted.

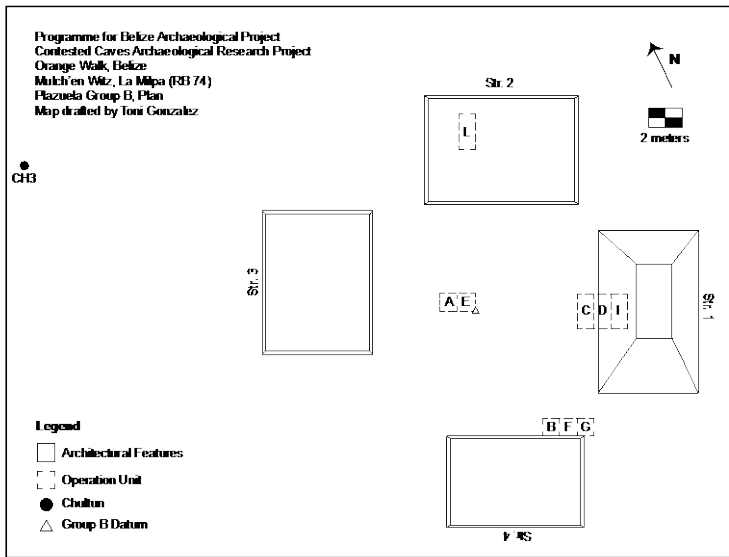


Figure 3 Map of excavation units at Plazuela Group B and CH3. Map drafted by Gonzalez, 2019

Eleven units were opened and excavated. Ten were located within the periphery of Group B and the eleventh, CH3, was reopened from the previous season. To determine the chronology of the space, a 2 m x 1 m operation unit (units A and E) was placed at the center of the *plazuela* and excavated to bedrock to determine the construction phase for Group B. Along Structure 1 (Str. 1) a 2 m x 3 m operation (units C, D, and I) was placed on the southeastern side to reveal the architectural feature at the southern corner. Another 3 m x 1 m operation (units B, F, and G) was placed along the platform of Structure 4 (Str. 4) to find the eastern corner to infer function. Along the top of Structure 2 (Str. 2) a 2 m x 1 m operation (unit L) was opened on top of the platform because Ground Penetrating Radar (GPR) data collected at the beginning of the season by Rutgers graduate students James Stanley, suggested an anomaly was evident beneath the northwestern area of the platform. Lastly, a 2 m x 1 m operation (unit K) was excavated behind Str. 4 at the

base of the constructed mound where Group B was positioned to distinguish whether a trash midden was present, which could potentially provide valuable information on function and other social processes.

Methods

The Programme for Belize Archaeological Project (PFBAP), directed by Dr. Fred Valdez, Jr., University of Texas, Austin, provides living accommodations, a laboratory, and other resources to Maya archaeologists interested in conducting research in the Maya lowlands around the La Milpa area. Under PFBAP, Maya archaeologists are able to investigate in this difficult and hard to penetrate tropical region.

During the 2017 and 2018 field seasons excavations at Mulch'en Witz, ceramic sherds, lithics, and special finds were separated by material type, given a provenience, counted, bagged, and tagged once encountered in the field. Among the special finds were charcoal remains. After their respective lot was closed, the artifacts from the lot were transported to the PFBAP laboratory located on the camp premises, run under the supervision of Ms. Sharon Hankins of the University of Texas, Austin. At the PFBAP laboratory, artifacts were processed for cleaning – unless otherwise specified – and catalogued.

Under the tutelage of PFBAP ceramicist, Dr. Lauren Sullivan from the University of Massachusetts, Boston, I produced a relative date for the utilization of Plazuela Group B. We employed Seibal's ceramic typology established by Sabloff in 1975 as a comparative guide to analyze the Mulch'en Witz ceramic assemblage (Willey et al 1975). I analyzed the ceramic assemblage collected from the systematic excavations from both the 2017 and 2018 field seasons. Only diagnostic sherds, mostly rim sherds or sherds with well-preserved slip, could be confidently attributed to a

ceramic complex. Rims are defined as the “area between the change of direction of the side or neck and lip, or the margin of vessel orifice” (Dutton qtd in Willey et al 1975:24). The features of a diagnostic sherd that were used to attribute the piece to a ceramic complex include wall thickness, rim curvature, and surface decorations (Willey et al 1975).

At the University of California, Santa Barbara, the charcoal samples were reviewed and selected to be radiocarbon dated. Toni Gonzalez, Dr. Gerardo Aldana, and I selected eleven samples from CH3, Unit A, and Unit C. One of these samples consists of carbon recovered at Mulch'en Witz from CH3 near the *incensario* and ceramic vessels (Gonzalez and Lorenz 2017) that are associated with the burial of a person(s). Charcoal samples provide the best characterization of the site's period of construction and occupation because they provide absolute dates whereas the ceramic assemblage can only provide relative dates. The samples were sent to the W.M Keck Carbon Cycle Accelerator Mass Spectrometer Laboratory at the University of California, Irvine and processed by Dr. John Southon.

Preliminary Findings/Results

After reviewing the architectural elements of the 2018 field season's excavations, I hypothesize that Group B was constructed in one single construction phase. Unit A and Unit E, located in the center of the *plazuela*, provided the most information about the construction of this architectural group. Approximately two meters of construction fill was revealed during excavation until reaching bedrock, making the mound upon which Group B is built partially man-made. The profile of the south wall of Units A and E (**Figure 4 & 5**) reflects a single compacted dirt floor with no visible plaster floor lining. However, plaster floors were uncovered in other units at the same horizontal depth as the dirt floor present before the start of the construction fill in the center

units. A plaster floor was uncovered in the 3 m x 1 m horizontal trench (Units B, F, and G) associated with Str. 4. Below the plaster floor, approximately 1 meter of construction fill was revealed, but bedrock was not reached. In the operation associated to Str. 1 (Units C, D, and I), a substantial amount of plaster floor was unearthed with traces of red paint indicating that it may have been painted at one time. The excavations conducted at Str. 1 revealed a platform with stairs going up the façade to another platform step. Since earlier plaster floors were not encountered after the latest floor in any unit, I can infer that the construction of Group B was a single massive project.

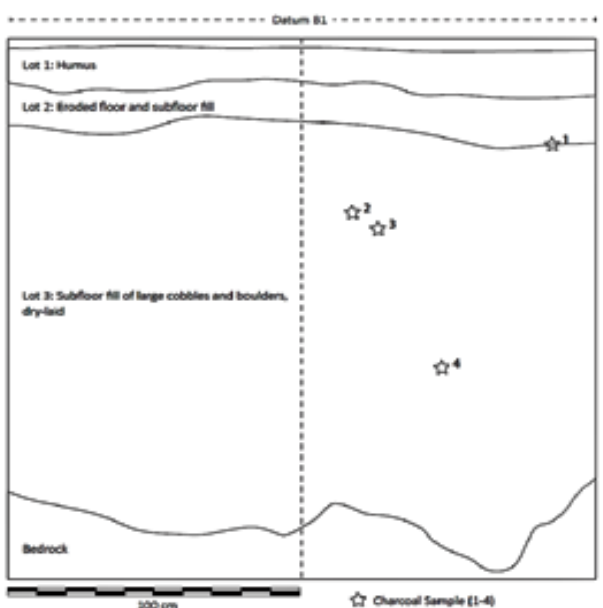


Figure 4 Southern profile of Unit A (right) and Unit E (left). Map by Gonzalez, 2019.



Figure 5 Profile of Unit A and Unit E adjacent to each other.

The results of the ceramic analysis of all assemblages from the 2017 and 2018 seasons indicate that people utilized Group B and the associated *chultuns* during the second half of the Late/Terminal Classic Period. As noted on **Table 1**, the ceramic data predominantly comprised Late Classic style types in the Mulch'en Witz assemblage, including Achote Black, Subin Red, and Tinaja Red (Sullivan et al 2007:138). These styles flourished during the Tepeu 2 and Tepeu 3 ceramic complex, a pairing common in northwestern Belize (Zaro and Houk 2012:145; Sullivan et al 2007:138). As expected, the attribution of Tepeu 2 or 3 can be more confidently dated to Tepeu 2 in the later lots than lots closer to the surface. The complete data set of the ceramic analysis is found in **Appendix 1** along with provenience associated to a ceramic complex, labelled "Time period". Clear and concise, **Appendix 1** highlights the correlation between ceramic complex and period (for the complete sequence see Willey et al 1975:9).

While most of the ceramics were Tepeu 2-3, an outlier was encountered that dates to an earlier period. Near bedrock, in Lot 4 of Unit A in the center of the *plazuela*, the field crew recovered Chicanel ceramic sherds dating to the Late Preclassic and Proto-Classic period (300 BCE – CE 280). Lot 4 may indicate the beginning of the construction phase before reaching bedrock. The acquisition of Chicanel

near bedrock can mark an earlier utilization of the area than the Late/Terminal Classic period. Further research is needed to confidently identify with confidence a potentially earlier occupation.

Along with employing ceramic analysis to determine relative date, researchers continue to use radiocarbon dating as a scientific method of obtaining age from carbonaceous, or carbon-containing/organic, material (Taylor and Bar-Yosef 2014:19). Archaeological remains that can be radio carbon dated include wood, charcoal, marine shell, and bone (Taylor and Bar-Yosef 2014:19). The carbon age is estimated by measuring the amount of the isotope C-14 present. Given the humid environment of the Three Rivers Region, organic material from the Maya civilization is rarely preserved, but other carbonaceous remains like charcoal do survive (Thomas Hart, personal communication, 2018).

The results of the C-14 analysis date into the Postclassic period, about one hundred years later than expected. Although the results do not precisely support the ceramic dating, the absolute dates are consistent regardless of their provenience of *CH3* and units. Given the consistency, Group B was likely constructed during a single phase as hypothesized.

Discussion

Given Group B's close proximity to La Milpa's site core, the two areas were likely utilized by the same group of people. During the Late/Terminal Class, inhabitants of La Milpa were increasing their construction projects, which suggests Group B was constructed during this trend (Trein 2016:50; Sullivan and Sagebiel 2003:33). Plazuela Group B was constructed as a large-scale, single-phase project undertaken by people with access to labor and building material. The PP2 organization of the four structures is common for residential spaces; however, no further evidence

currently supports this function for Group B. PP2 courtyard groups are also common at the site of Tikal and have been interpreted to have had a residential function. It is not uncommon to find *chultuns* near household groups, although their function has been interpreted to vary from alcohol fermentation (Dahlin and Litzinger 1986), food storage (Puleston 1971), and ritual (Gonzalez and Lorenz 2017). CH3 was constructed and utilized at the same time as Group B, therefore we can begin to predict their function based on the relationship to their proximity.

I have various hypothesizes for the dissimilarity in dating results from the ceramic and charcoal data. One hypothesis is that the utilization of Group B extends longer than expected past the Terminal Classic period. Given that the ceramics were recovered from construction fill and burial in CH 3, they may have been produced earlier than the construction of Group B or burial in CH3. Another hypothesis is that the people utilizing Group B were using ceramic styles common from Late Classic Maya elite after La Milpa collapsed. The Maya group utilizing Group B likely belonged to the middle class as evidenced by the discovery of valuable material culture such as jade beads and obsidian blades.

Conclusion

This project is an initial step in the ongoing research to determine the functions of this site. The construction chronology of Group B is beginning to be uncovered; however further study is needed to understand the deviation of the ceramic and C-14 results. In the 2019 field season, Toni Gonzalez plans to finish excavations in Group B and begin excavations in Groups C and D (Gonzalez, personal communication, 2019). Group C consists of 2 mounds and sits at the case of both knolls between Group B and Group D. At the top of the southern knoll, Group D consists of four

mounds resembling a PP2-type organization with a culturally constructed feature that held water. After the 2019 season, the chronological results of Group B will be compared to Groups C and D for a more holistic understanding of Mulch'en Witz's construction.

Appendix 1: Ceramic Analysis

Provenience				
Operation Performed	Unit	Lot	Time Period	Types Included in Lot*
1	1A	1	Tepeu 2-3	Eroded tinaja red
2	A	1	Tepeu 2-3	Cayo Unslipped, Palmar Orange-polychrome, Tinaja Red, Achote Black, Belize River Valley paste
2	A	1	Tepeu 2-3	Five eroded body sherds with no slip remaining
2	A	2	Tepeu 2	Striated, achote black,
2	A	3	Tepeu 2	Cayo Unslipped, one small Tinaja Red sherd
2	A	4	Chicanel	This lot is better preserved than most of the other lots. Sierra Red, Polvero Black, Laguna Verde Incised, Striated, the diagnostic sherds are all Late Preclassic
2	A	4	Tepeu 2	Tinaja red? Eroded
2	B	1	Tepeu 2-3	Cayo Unslipped, Striated, Tinaja Red, pitted surfaces
2	B	2	Tepeu 2	Belize Red, Cayo Unslipped, Garbutt Creek Red, one sherd with small dot applique and possible stucco
2	C	1	Tepeu 2	Subin Red, Cayo Unslipped, Striated, Achote Black, Tinaja Red, Kaway Impressed, Belize River Valley paste
2	C	1	Tepeu 2-3?	Two small eroded sherds

2	E	1	Tepeu 2	Striated, Torro Gouged-incised, Subin Red, Achote Black
2	E	2	Tepeu 2	Garbutt Creek Red, two rims from the same Achote Black bowl, Tinaja Red, Cayo Unslipped
2	E	3	Chicanel	Striated, Polvero Black, Belize River Valley paste, the diagnostic sherds are all Late Preclassic but there may be some later sherds mixed in that are eroded
2	F	1	Tepeu 2	Striated, eroded Tinaja Red
2	F	2	Tepeu 2	Tinaja red
2	F	3	Tepeu 2	Subin Red, Striated jar rim, Tinaja Red
2	G	1		Some gunshot, striated, Tinaja Red
2	G	1		Striated, achote black, tinaja red
2	H	1		Garbutt creek red, cayo unslipped, subin red, striated, achote black, tinaja red, chilar fluted
2	O	1		Cayo unslipped, subin red, striated, cubeta incised, achote black
CH1	1a	surface	Tepeu 2-3	Garbutt Creek Red, Subin Red, Tinaja Red, Cayo Unslipped, eroded Belize Red
CH1	1a	surface	Tepeu 2-3	Tinaja red
CH1	NE Quad		Tepeu 2-3	Tinaja red, achote black

CH1	SE Quad		Tepeu 2-3	Tinaja Red, Striated, eroded pitted body sherds
CH1	surface		Tepeu 2-3	Tinaja red
CH1	surface		Tepeu 2-3	Striated
CH1	surface		Tepeu 2-3	Tinaja red
CH1	surface		Tepeu 2-3	Cayo unslipped, tinaja red, belize red
CH1	surface NW Quad		Tepeu 2-3	Striated
CH1	surface NW Quad		Tepeu 2-3	Cayo unslipped, tinaja red
CH1			Tepeu 2-3	Tecomate rim <i>Notes: The only slipped that is preserved for the CH1 surface finds is on the Tinaja Red sherds, the assemblage is typical for mixed Late to Terminal Classic for the pfb area.</i>
CH2	2a	surface	Tepeu 2-3	Striated
CH2	2a	surface	Tepeu 2-3	Tinaja red
CH2	2a	surface	Tepeu 2-3	Striated - three sherds from same vessel, Tinaja Red
CH2	2c	1		Tinaja red
CH2	2c	2		Unslipped body sherds
CH2	surface		Tepeu 2-3	Striated, tinaja red, cayo unslipped
CH2	surface		Tepeu 2-3	Tinaja red
CH2	surface		Tepeu 2-3	Unslipped body sherds
CH2	surface 2		Tepeu 2-3	Tinaja red
CH2	surface 2		Tepeu 2-3	Striated

CH2	surface 3		Tepeu 2-3	Eroded body sherds
CH2	surface 3		Tepeu 2-3	Tinaja red
CH2	surface lots			Tinaja red, striated, cayo unslipped
CH2		1		Reconstructable Censer Vessel with possible burning on the interior
CH3	surface		Tepeu 2-3	Small Subin Red bowl, sherds have very pitted surfaced with no slip left, typical for eroded Late Classic in the area
CH3		1	Tepeu 2-3	Chaquiste Impressed, Cayo Unslipped, Subin Red, lots of eroded water jar sherds, some striated sherds with possible burning, rim from a pottery drum
CH3		1	Tepeu 2-3	Whole Vessel - crudely made unslipped vessel - perhaps made for some activity/function that is specific to this site. There is also a large unslipped rim from another vessel but constructed in a similar way.
CH3		2		Striated, Tinaja Red, one sherd with mend hole, eroded unslipped body sherds with possible burning

** Types listed are included in lot but do not represent all of the ceramic types present.*

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The Impact of Parental Documentation Status on Latino Voter Turnout

Claudia Alegre

Mentor: Dr. William Nomikos
Department of Political Science

Abstract

There are approximately 11 million undocumented immigrants residing in the United States today, of which approximately 75% are Latino/a. Around 62% percent of undocumented individuals have citizen children, leading to the growth of a generation of offspring born to undocumented parents. In this paper, I use data from the Latino Second Generation Study to analyze the relationship between parental documentation status and second-generation Latino voter turnout. Using parental socialization frameworks and Latino participation literature, I hypothesize that Latino young adults raised by undocumented parents are less likely to vote compared to those with documented parents. Preliminary findings indicate there was a negative correlation between parental documentation status and voter turnout.

Introduction

During the 2016 presidential election, political scientists and media outlets predicted that due to the anti-Latino immigrant rhetoric presented by Republican candidates and their campaigns, Latino voters would mobilize and vote. Some candidates such as Donald J. Trump, based their campaign rhetoric on issues such as immigration control and “building a wall” on the United States-Mexico border. Other candidates, such as Chris Christie, said if elected, immigrants will be tracked like “FedEx packages” (Spodak and Scott 2015). The reality, however, was that the Republican campaigns and the dehumanization of immigrants did not cause the Latino community to mobilize. Rather, Latino support for Democrats decreased from 2016 by 5% and voter turnout remained stagnant (Pew Research Center 2017). While the Latino community constitutes about 18% of the total population (Pew Research Center 2018), there are few studies focusing on their voter turnout, and far fewer studying the impacts of documentation status on political and civic engagement.

In order to understand the implications of Latino voter turnout in the U.S., scholars need to address the political effects of undocumented immigrants. This is because the U.S. is home to about eleven million undocumented immigrants, of which half are immigrants from Mexico, and another 25% are immigrants from other Latin American countries (Gonzales 2015). When attempting to understand Latino politics, researchers must consider mixed status families, those where some of the family members are documented and others are not. They must also tackle the issues of large numbers of undocumented immigrants and the political implications of mixed status families and political participation of documented Latinos.

Studies on this topic create other ways to test and build upon theories of political socialization and voting rates. For example, in what ways does having (an) undocumented parent(s) impact young citizen offspring politically? In this paper, I provide evidence of the impact of having undocumented parents on the voting rates of young U.S-born Latinos. Because disclosing documentation status is a sensitive topic in the current political climate in the U.S, it is difficult to obtain representative data on this population. To get around this problem, I use data from the Latino Second Generation Study in which parental documentation status is inferred by a series of questions, in order to examine and analyze Latino political participation.

To frame the political effects of undocumented immigrants as guardians, parents, and/or role models on second-generation Latino offspring, I draw upon work done utilizing political socialization and immigrant incorporations frameworks, I can predict that having undocumented parents will actually have a negative effect on the political participation of Latino young adults. In particular, some research has demonstrated how undocumented immigrants rarely participate in politics for a variety of reasons. One can then build upon parental socialization theories and predict that lack of active political role models produces a lack of political engagement in Latino young adults. The data presented actually found large disparities between the voting rates of Latino citizens with undocumented parents compared to those with documented parents. These results further suggest that undocumented parents serve as a “chilling political agent” (Street et.al., 2017) for their offspring. The findings also demonstrate the political and social barriers for undocumented individuals, and the political exclusion of Latinos in the U.S.

An Era of Unauthorized Migration

The implementation of the Immigration Reform and Control Act (IRCA) of 1986 enforced border control and created a “new era of deportation” in the U.S. as well as a new political culture for Latino-Americans. This legislation, signed by President Reagan, promised to halt unauthorized migration by increasing border enforcement and creating harsher penalties for employers who hired undocumented workers. The reality was that IRCA was ineffective in controlling undocumented migration. In fact, by 2008, the undocumented immigrant population actually quadrupled since the implementation of IRCA two decades earlier (Nguyen 2009). Up until 2008, the undocumented immigrant population was exponentially rising. Today, the undocumented population in the U.S remains steady at eleven million individuals.

This young population of immigrants has integrated into American society (Donato and Armenta 2011). As undocumented immigrants settle and integrate into society, they begin to create families. According to U.S Census data, about four million documented immigrant youth have at least one undocumented parent, and about six million have at least one undocumented family member (American Immigration Council 2018). As these U.S-born children grow up, they become part of the U.S electorate.

Impacts of Documentation on the Latino Electorate

How does having undocumented parents impact the political socialization of youth born in the U.S. Specifically, how does what political scientists call “mass illegality” affect Latino voter turnout? Researchers in psychology, education, and sociology have studied the social incorporation of native born youth born to foreign parents. A review by Diaz and Fenning (2017) concluded that undocumented immigrants in the U.S experience high levels

of distress and mental health issues caused by institutional disenfranchisement, discrimination, and fear. In addition, Latino noncitizens experience lack of opportunities, less access to health care, increased fear of reporting crimes, and an increase in mental health issues (Torres and Waldinger 2015; Diaz and Fenning 2017; Menjivar and Bejarano 2004). Because of this, undocumented individuals tend to avoid political organizations and public activities, such as congressional campaigns and visits to city halls, in order to decrease their risk of deportation; their family members carry the same fears. Their U.S-born children are less likely to apply for federal programs such as welfare in attempts to stay away from state agencies and government employees (Yoshikawa 2012).

Undocumented Immigrants and Political Engagement

While undocumented immigrants cannot vote, they are allowed other forms of political participation such as protesting, campaigning, or participating in local community organizations. Although this is a large population which serves as political agents, there is limited research on the political involvement of undocumented individuals. The few studies that exist found that undocumented Latinos are participating in political and civic activities at markedly lower rates in comparison to their documented counterparts (see McCann and Jones-Correa 2016 and Leal 2002).

To address the gaps in the literature, we can apply the existing political science theories to the issue of immigrant political incorporation. We can begin by drawing from political socialization frameworks in order to study how these second-generation immigrants are molded into political agents. Political socialization theories are based on Bandura's (1969) social learning theory. Social learning theory explains that individuals learn from modeling the behavior of those around them, especially their parents.

Recent studies have found that parents strongly influence the partisanship of their offspring as well as their political engagement (Jennings, Stoker and Bower, 2009). For immigrant youth, traditional political socialization theories are inadequate to explain their political identity formation. Second and 1.5 generation immigrant youth, particularly Latinos, are relying on other sources for political socialization. Unlike other youth in the U.S who have traditionally relied on parents for political socialization, immigrants rely on other institutions such as school for political socialization (Stoker and Bower 2009).

Accounting for the previous research conducted on Latino voter turnout, plus aggregating the theories on parental socialization and immigrant political incorporation, we can assume that having undocumented parents will cause their children to be politically disengaged, especially electorally. In order to test this assumption, I question how the lack of electoral participation by undocumented parents impacts the political socialization of their documented offspring.

Hypothesis (H1): Second-generation Latinos with undocumented parents show lower voting rates than second-generation Latinos with documented parents. In addition, there are external factors which also affect levels of political involvement, not simply parental socialization. In order to address racial and ethnic minority political participation, scholars have created different theories and frameworks, mainly focusing on socioeconomic factors. Verba, Schlozman, Brady, and Nie (1993) created the resource model of participation, a framework explaining how education, money, and time factor in the participation rates of individual. The research on ethnic and racial minority political participation identified a disproportionate gap in Latino participation in particular. Scholars of Latino politics have examined issues such as socioeconomic factors,

religious affiliation, and voter mobilization by representative racial and ethnic candidates (e.g. Hero et al. 1996; Jones-Correa and Leal 2002; Barreto 2007) but always control for socioeconomic factors, in addition to other variables.

Data

Obtaining data, primarily about political identity, on undocumented individuals and communities is both sensitive and difficult. This is a primary reason why there are few studies in political science addressing the political effects of documentation on immigrant incorporation. Due to exclusionary immigration policies and migration trauma, undocumented immigrants are typically unwilling to answer political questions. For the same reasons, family members of undocumented individuals can also be hesitant to respond to survey items, particularly those regarding documentation status and politics.

For this project, I use the data collected by the Latino Second Generation Study (LSG), 2012-2013 provided by the Resource Center for Minority Data and accessed online from the Inter-university Consortium for Political and Social Research. The LSG study is a national survey of the political experiences and attitudes of 1,050 U.S born second-generation Latinos of foreign-born parents, both documented and undocumented. Respondents were asked a variety of questions ranging from parental documentation status and political experiences, as well as demographic questions such as education, age, and gender. All respondents are classified as second generation young adult Latinos, aged 18-31. Due to the fact that eighty percent of the undocumented community identifies as Latino, this study focuses solely on the experiences of the Latinos.

Data Structure

Dependent Variable: Measuring Voter Turnout

In order to test whether having undocumented parents creates negative voter turnout for their citizen offspring (H2), I use questions which asked respondents about whether they voted in the 2012 presidential election. The response choices for this question are yes and no, with the option of not answering (N/A). The variable was given a value of zero for not voting, and a value of one for voting. In an attempt to eliminate any omitted variable bias, I excluded responses of N/A and “Don’t Know.”

Independent Variable: Measuring Parental Documentation Status

To measure documentation status, I used four different questions from the survey to create a single indicator. I aggregated the responses from two different questions on the survey to measure documentation status: what documentation (if any) parents had when entering the country and if they changed legal status once in the U.S.

The question asking respondents about their mother and father’s legal status when entering the U.S offers several response options, ranging from whether the parent was a US citizen, permanent resident, asylum or refugee seeker, had a temporary visa, or was without legal documents. The other question used to measure documentation asked respondents if their parents changed their legal status. On this question, individuals had the option of responding yes, they became a permanent resident, became a US citizen, received Temporary Protected Status (TPS), or no, they did not.

To create an indicator for parental documentation, I combined the two different variables to organize the responses into four different categories: both parents

undocumented, only an undocumented mother, only an undocumented father, or neither parents undocumented. The categories were given values from zero to three, having both undocumented parents with the values of zero and having neither undocumented a value of three. The rest of the responses were given a value of zero. In an attempt to exclude any type of bias, I excluded the N/A and don't know responses from the analysis.

Results

In doing this analysis, I began by obtaining the distribution of both my dependent and independent variables. The following section includes graphs showing the quantity of respondents included in the variables measuring parental documentation and voted in the previous presidential election.

Variable Distribution

For the findings on voting in the 2012 presidential election, the distribution is shown in **Figure 1**. The responses indicate that more individuals in the data voted in 2012 than did not vote but the responses do not show too much difference. The “0” on the graph indicates the respondents who did not vote in 2012 while the “1” represents those who did. In 2012, about 126 million citizens voted in the U.S, a drop from the 2008 election, at about 57.5% of eligible voters voting. Out of the 1,050 respondents who participated in the LSG study, only about 400 voted, while 380 did not. Approximately another quarter of respondents did not answer the question about voting. Although not included in this paper, the responses for protesting and activism included more responses in comparison to voting (Street et al. 2017). Since this study focuses on electoral participation, I only observed whether respondents voted. Having a seemingly even number of both those who voted and did not vote, we should expect that the

effects of parental documentation status on responses to be significant.

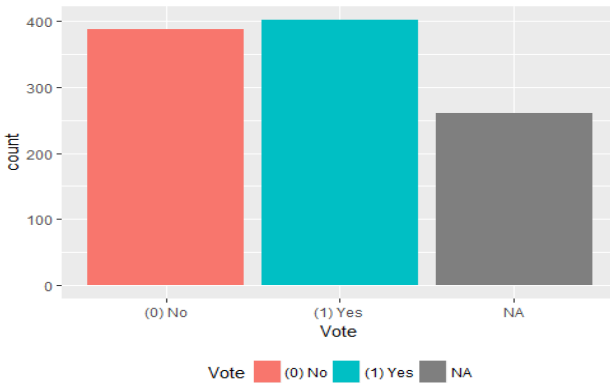


Figure 1 Voting in 2012 Presidential Election

For the indicator variable created to measure parental documentation status, the responses are shown in the graph above (**Figure 2**). Here we see that the majority of respondents stated that they have neither an undocumented father nor an undocumented mother. Over 300 respondents indicated not having an undocumented parent. Fewer than 50 respondents have both parents undocumented. The national data on this is difficult to gather considering how sensitive the topic of is. That said, it is also possible that many respondents may not know the documentation status of their parents or do not feel comfortable responding if they do.

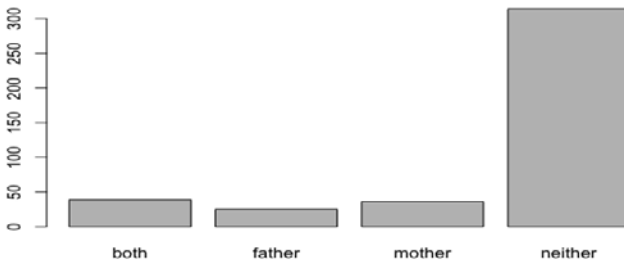


Figure 2 Parental Documentation Status

In preparation for a multivariate regression analysis, I obtained the descriptive statistics of my data in order to summarize it and view the relationship parental documentation and voter turnout. Finding the descriptive statistics of my data will allow me to understand the variation in responses and the validity in the sample used.

Table 1 indicates that the mean for the relationship between parental documentation status and voter turnout is 0.29, which is closer to zero than one. This indicates that the responses lean more towards not voting when parents are undocumented. The standard deviation for this relationship is also significant. It indicates that the data is highly spread, meaning there is variation in the responses. Although we can interpret that the mean of the variable relationship concludes that only 29% of the sample with undocumented parents voted in 2012, the other information presented in **Table 1** shows that our data is not clustered. Having the data not be clustered shows that there might be some close relation between the two variables that needs further analysis. Because of this, it is necessary to follow up and conduct a linear regression in order to understand and provide further proof of the relationship between parental documentation status and electoral participation.

Table 1 Undocumented Parents and Voting: Descriptive Statistics

nbr.val	nbr.null	nbr.na	min	max	range	sum
34	24.	641	0	1	1	10
median	Mean	SE	95% CI	var	SD	coef.var
0.00	0.29	0.08	0.16	0.21	0.46	1.57

Discussion

The preliminary results answer several questions with respect to second-generation Latinos. First, the results show that further analysis could prove the validity of the hypothesis that undocumented parents do have an adverse effect on offspring's voting patterns. Among the most significant results is the percentage of individuals with undocumented parents that did not vote in 2012. The majority (~ seventy percent) of the sample indicated that they did not vote. Although there are limitations to this analysis, there is still value to the findings. This tells us something about the chilling effects of documentation status, or the lack of it, on the political development and actions of Latinos. These results, in fact, correlate with earlier research done on immigrant political incorporation. Previous studies also found that undocumented parents are less likely to participate in politics and therefore are less likely to teach their children about political processes.

Nevertheless, there are concerns and limitations in this paper. First, the sample of respondents who answered questions on their parents' documentation status was only a quarter of the entire survey sample. The majority of those who did answer questions about their parents' documentation status indicated their parents were documented. One explanation for this is the fact that documentation status is a sensitive topic and many individuals opted not to respond to questions regarding this matter. Another explanation is that respondents might have been completely unaware about their parents' documentation status and were therefore unable to answer this question.

Finally, although these results demonstrate a need for further analysis to provide a valid answer to the hypothesis, they also indicate there are questions to be raised about the

voting patterns of Latinos. Less than a third of the entire survey sample indicated they voted in 2012. If this number is representative of Latinos in the U.S., the data suggest that only a third of voting eligible Latinos actually vote. In addition, the impact of documentation status of parents had on Latino voter turnout is significant.

Future Research and Conclusion

Preliminary results indicate that there is a need for further analysis in order to determine accurately the effects of parental documentation status on Latino voter turnout. The next steps to further the project include conducting a multivariate linear analysis in which multiple control variables such as education, gender, Spanish fluency, and income would be included. Furthermore, in order to be able to address more adequately the question of contemporary Latino political participation, it is important to conduct a more recent survey on the political experiences and attitudes of second-generation Latinos.

A growing number of second-generation Latinos are being raised by and/or with undocumented parents or other family members. Studying the political impacts of these relationships is important for the future of Latinos as an electoral force in the U.S. While previous studies have found that having an undocumented parent/family member creates a sense of activism for individuals (Street et. al 2017), it has chilling effects in voting. Protesting and participating in grassroots activism plays an important role in the political process but it is through voting that liberal democracies select elected officials. Latinos have the lowest voting rates of any racial/ethnic group in the US. While voting rates are low overall amongst the voting eligible population in the U.S, Latino voter turnout is disproportionately low. Researching why Latino voter turnout is low is important in order to create solutions, insure equal representation, and

result in comprehensive legislation and immigration reform. Increasing Latino voter turnout would be not only groundbreaking but revolutionary.

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Why Diversity is Important in Bibliometric Research

Eduardo Cardenas-Torres

Mentor: Dr. Michael Nava
Department of Statistics and Applied Probability

Abstract

Journals contain articles whose citation rates vary. The academy uses the article's citation rates to help determine the academic productivity of those authors. There are many variables that contribute to how often a paper will be cited, including the content and the quality. In this project, we are interested in how citation rates are affected by the diversity of the authors themselves. This study focuses on University of California faculty systemwide in Engineering and another STEM field. During the period covered by the study (1965-2017), more than 30,000 different papers were published by UC faculty in these fields. The vast majority of papers had 1 to 10 authors per paper. Using this data, we explore how the relative diversity of the authors, measured with a homophily index, is correlated with the number of citations. This analysis focuses on 4 major data groups and categorizes them by the number of authors. The groups are 2 authors, 3 authors, 4 authors and 5 authors. Linear regression analysis and K-means cluster analysis were run on the data. These groups shared significant factors of having the ethnicity, gender and department homophily index as the main factors for the rates of citations. The analyses show that having a diverse set of authors can improve the citation rates of an article, thus providing evidence for the importance of diversity within academia and throughout publication processing.

Introduction

What are the factors that contribute to a research paper having a high rate of citations? The impact factor of a research paper published in an academic journal is judged on the number of citations it receives. One might assume that the reason certain publications contain highly cited papers is due to the content of the papers, the journal's standing in the field, or prestige of the authors. These may be factors in an article's rate of citations but there may be other underlying reasons why articles differ in the number of times cited. Author diversity can easily be overlooked, and may be a significant factor that can lead to differences in the number of citations. In this project, we ask how author diversity affects the rates of citations of an article in UC faculty publications in two STEM fields.

The data I examined involved articles that had two authors, three authors, four authors and five authors. I selected these specific groups due to the large amount of data within each group. Outliners were not included initially in the data examined. The sample size was 41,042 authors. There were 27 different variables for each author that had been identified by the California State University, San Luis Obispo Computer Science Department. We selected 5 main variables as the primary focus of our analysis: paper citations; publication years ranging from 1965 to 2017; ethnicity and gender, and department affiliation of each author. I used linear regression and cluster analysis to address this research question and utilized these five variables to compare the rates of citation. Before presenting the analyses, I briefly address why certain articles accumulate more citations than others, and thus contribute to a journal's impact factor.

We can find journal rankings with the help of a range of different journal publication indexes. An example is

Google Scholar's h5-index that contains articles published in the last 5 completed years. Understanding how research articles are being ranked is a vital aspect of bibliometric research as it can help understand data outliers or an uneven distribution of ratings across varying disciplines. Considering the importance of different content can help create an even field upon which to measure publications. Addressing articles with different content can help with understanding the possible reasons for the differing rates of citations within articles, and why there is variation in the extent to which papers contribute to a journal's impact factor.

Distinguishing the content differences within bibliometric research can help connect the metrics of academic productivity. Today, faculty rank is assumed to have an impact of the quality of a paper though often this is not the case. The quality of a paper is usually assumed to correlate with the average yearly citations for each publication within a journal. This possible correlation does not take into account other underlying factors that can cause variations in the number of citations. These contributing factors might include ethnicity, gender, department and even institution.

An understanding of citation analyses appears to lack a broader social sciences approach. In this paper, I relied on Jappe's interpretation of Andrew Abbott's theory of professions and Richard Whitley's theory of scientific work. Abbott's and Whitley's theories explain how evaluative citation analysis has failed to provide a scientific basis for professional research. This consideration of how journals are ranked may be significant in an overall understanding of the impact factor's sole reliance on the average amount of citations appearing in a journal in any given year.

A journal's impact factor does not consider the actual importance of the particular subject. Andrew Abbott's theory stresses the importance of having professionals within a field assigned to ranking journals in their subject areas. A common trend in the Science, Technology, Engineering and Mathematics fields is to have a number of follow-up papers written on articles that contain significant breakthroughs (Jappe). This causes significantly more papers to have high numbers of citations due to the importance of the breakthrough reported in the original paper. Seeing this as a cause for a potential outlier and trend within STEM subjects explains why I chose data limited to groups of 2 -5 authors.

Methodology

Homophily Index

Skewed data does not mean that we cannot figure out a trend within the UC faculty publications. With the help of linear regression, we can show a linear relationship between diversity and the rates of citations. A big question, however, is how to measure diversity? For this project, I measure diversity using the sociological term "homophily." Homophily means the degree of similarity between one person and another. (Freeman) This term is important in measuring each of the different variables possible within my data. Using homophily, we were able to make an index for three different author variables: ethnicity, gender and academic department. Each variable had a homophily index ranging from 0 to 1. The closer a homophily rank was to 0, the more diverse that rank was; the closer a homophily rank was to 1, the less diversity that rank had. A quick example would be comparing a gender homophily index of two different groups of two authors. One group of authors had two males working on a publication and the other group had one male and female working on a different publication. The

group with two males would have a gender homophily rank of 1 and the group with one male and one female would have a gender homophily rank of 0.50. These numbers come from an algorithm used for all different variables possible within the data.

$$H = \sum_{i=1}^{...A} G/A^2$$

(Summation [(Number of Authors in Group/Total Authors) ^2])

The Number of Authors in Group represents the total number of authors within a specified category for that variable. Using the previous example of one group containing two males and another group containing one male and one female, we have different gender homophily indexes based on this algorithm. The group containing two males would have two males divided by the total number of authors; squaring it then equals 1. The other group had one female divided by the total number of authors; squaring it would equal 0.25. We then have one male divided by the total number of authors, and when squaring it, it equals 0.25 as well.

The formula takes the sum of all homophily ranks within each group and shows the second group with a gender homophily index of 0.50 by adding the ranks of one male and one female. These two numbers represent the amount of diversity each group has; the second group has a gender homophily rank that is more diverse. This information on how the data is ranked is vital in performing linear regression on the data.

Linear Regression Analysis

The algorithm that was ran to use the simple linear regression was:

$$\hat{y} = \beta_0 + \beta_1 x.$$

Where β_0 represented the intercept of the regression line, and β_1 represented the slope of the regression line and \hat{y} represents the estimated simple regression equation. We ran linear regressions using the three variables of ethnicity, gender, and department. I hypothesize that there would be higher citation rates for papers with a greater the diversity of authors. My linear regression models (See **Figure 1**, **Figure 2**, and **Figure 3**) show that the rates of citation seem to increase the more diverse a category is. These results support the hypothesis that higher rates of citations correlate to papers with greater diversity among authors.

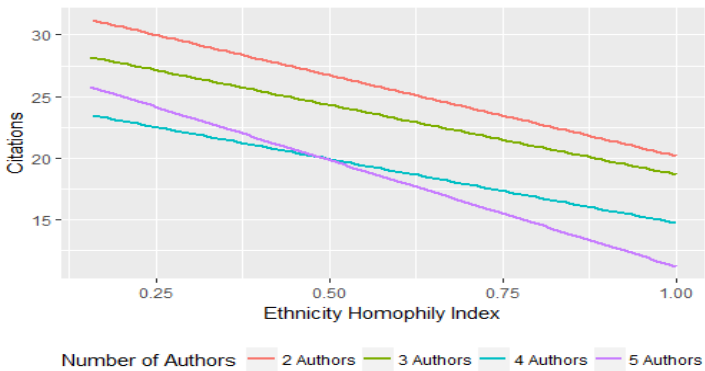


Figure 1 Regression Model for Ethnicity

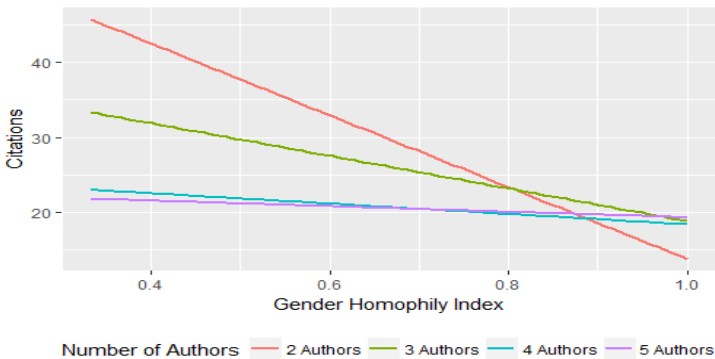


Figure 2 Regression Model for Gender

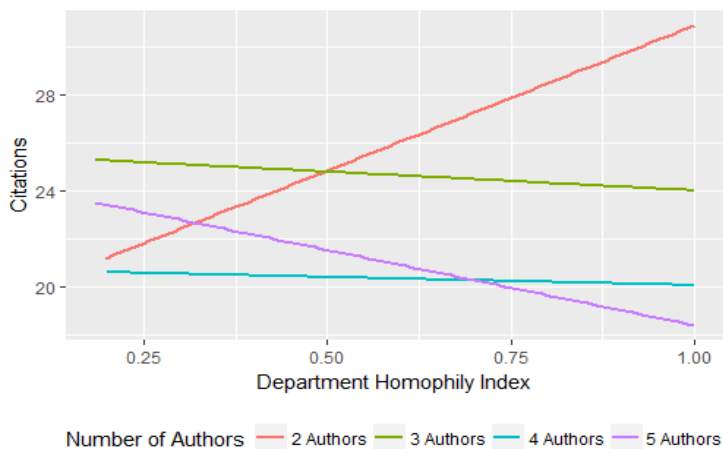


Figure 3 Regression Model for Department

Homophily Index vs. Citations model shows that for each group of authors (2, 3, 4, and 5), the more diverse the group, the higher the rates of citations. This phenomenon did not just occur for that model. As shown in **Figure 2**, it also appeared for the Gender Homophily Index vs. Citations. The same held true in measuring Department Homophily Index vs. Citations, though this example contains one significant outlier.

One outlier (see **Figure 3**) was within the Department Homophily Index, the group containing two authors. This group did not follow the pattern that more diverse groups of authors within a group under the Department Homophily Index tended to have more citations than those groups that were not as diverse. There can be a significant number of factors at play, one of which is the content of the paper with two authors. I hypothesized that the more diverse the authors of a publication were, the higher

the rates of citations would be. With two authors in one department, diversity of perspective may be limited.

The four different groups of data I have been working with indicated that publications with 2 authors would have the highest rate of citations, followed by the group of three authors, then the group of four authors and finally, the group of five authors. This particular trend does not go against my hypothesis. Having fewer authors will result in higher rates of citations, though, in general, more authors tends to diversify a group. Having more diversity within each group of authors does result in higher rates of citations, although having a larger number of authors in a group which is not diverse does not necessarily result in having higher rates of citations.

How do my results from the linear regression compare to other similar bibliometric research? My results indicate that the greater the diversity, the higher the rates of citation, if you disregard the size of the group. A similar study called “Level of Evidence and Conflict of Interest Disclosure Associated with Higher Citation Rates in Orthopedics,” by Okiki and Kanu, indicates that diversifying institutions or departments tends to lead towards higher rates of citations for the paper. They were able to find these results through linear regression for the various sample sizes that have a significant factor in rates of citations. The study determined that sample sizes of 100 or larger had a greater impact on their data. Sample size was significant in determining similarities or differences among the data. My sample size consisted of 41,021 entries. Okiki and Kanu had the same results using sample sizes greater than 100, although their study focused on orthopedics, whereas I examined a field in Engineering and another STEM field.

In “Using Bibliometrics to Analyze the State of Academic Productivity in US Pediatric Surgery Training

Programs,” Desai and Nidhi analyzed the academic productivity among US pediatric surgeons. They utilized Scopus IDs to identify the surgeons. This provided information about the authors such as their gender and their academic affiliations. Desai and Nidhi found that gender, rank, and institutions were the significant factors that determined rates of citations for published papers in pediatrics. Gender seems to be a significant variable in this study and has similarities to the departments of authors as well. To better understand gender as a significant factor in citation rates, I used another data analysis method called k-means clustering.

Cluster Analysis

Cluster analysis is the second type of analysis I chose for this data set. I used k-means clustering to help find the average of all the data points and make centroids out of them. The algorithm that was used by the k-means clustering was:

$$W(C_k) = \sum_{x_i \in C_k} (x_i - \mu_k)^2$$

x_i is a data point belonging to the cluster C_k and μ_k is the mean value of the points assigned to the cluster.

K-means cluster analysis is a type of unsupervised learning. Unsupervised learning is a form of machine learning algorithm used to draw inferences when you have unlabeled responses and the goal is to find labeled responses from input data. Cluster analysis helped highlight the trend that seems to occur over the years. I chose to cluster the data into different periods, using twelve different groups of years in order to indicate specific years of online sources that can possibly affect the number of publications that get cited. Traditional assumptions are that the older a paper, the more citations it will receive. This may not however be true in

STEM fields. The cluster analysis I ran showed something a bit different than the traditional assumption.

Figure 4 shows the Years vs. Citations and the trend that occurs over time. It seems that there was a low amount of citations for the years 1967 to 1996. With the advent of the internet in the early 1990s, students and researchers had an easier way to find articles and other publications; this significantly changed the rates of citations for individual articles. At the beginning of 1990s we see a rapid increase in citations, then a decrease over the next 5 years. Starting in 2000, citations increased dramatically, with the internet playing an important role in providing access to articles. This ease of identification and access caused an increase in rates of citations. With this in mind, I ran three more cluster analysis graphs to see if data mining might help explain why specified years tended to have higher rates of citations than others.

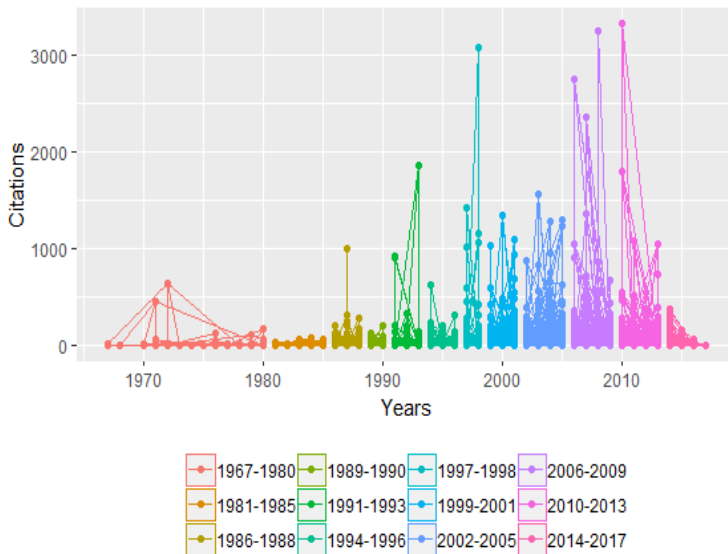


Figure 4 The year the publication was published and the number of citations

The following three cluster analysis graphs included the three variables I used for the linear regression, this time specifying the years of groups. **Figure 5** shows the Ethnicity Homophily Index vs. Years and indicates an increasing pattern of diversity over the years. It starts in 1967 with a fair distribution of data points across the Ethnicity Homophily Index, although as it gets closer to present time, there are more centroids lying closer to 0, meaning more diversity within the ethnicity homophily index. This trend could be a factor in causing more citations as new papers with a greater diversity among authors are published. The other two graphs, **Figure 6** and **Figure 7**, had the same trend using the Gender Homophily Index and the Department Homophily Index vs. Years.

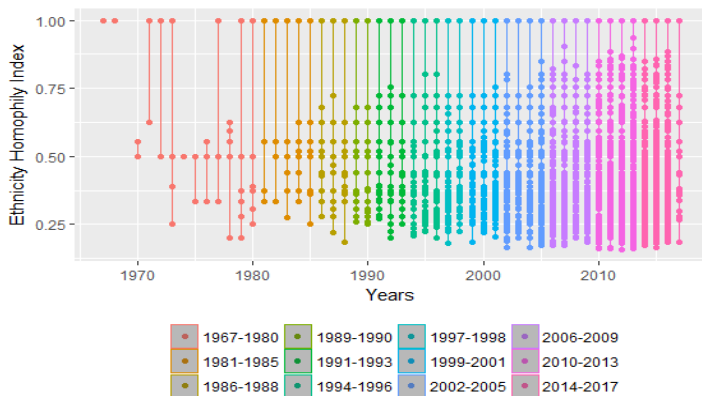


Figure 5 The year the publication was published and the ethnicity homophily index

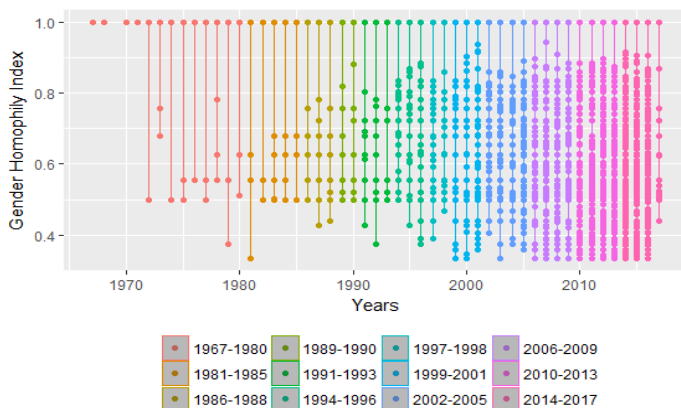


Figure 6 The year the publication was published and the gender homophily index

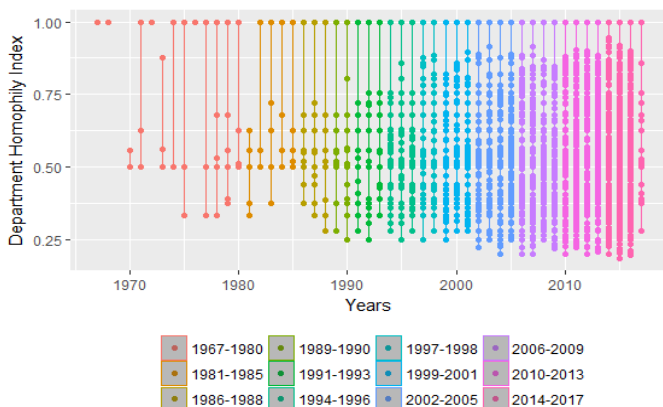


Figure 7 The year the publication was published and the department homophily index

As we get closer to present time, greater diversity appears in the cluster graphs. A large increase in the homophily indexes occurs around the year 1994. This was the beginning of a rapid increase in more diverse papers across the three chosen variables of ethnicity, gender and department. My results indicate that the more diversity

there is among authors, the higher the rates of citations. This is not to say that having more authors automatically results in a more diverse group, although this, too, indicates a positive relationship with diversity and citations. Cluster Analysis showed that over time diversity in terms of ethnicity, gender and department increased. These data clusters within each different variable may be contributing to why rates of citations seem to increase over time. My hypothesis was neither fully proven nor fully disproven. These analyses, however, provide insight into different kinds of analysis I might undertake in future research such as hierarchical clustering and time-series.

Conclusion

My data tends to show a correlation between diversity of authors ethnicity, gender, and department with the rates of citations. My results also indicate that over time, articles with higher rates of diversity of authors are cited more frequently. However, this does not directly indicate that diversity is the reason for the increased rates of citations. In addition, it does not fully explain the increase in the rates of citations of a paper over time. University of California faculty in Engineering and the STEM field considered in my research, show patterns of diversity growth and correspondingly increased rates of citations.

The linear regression analysis helped show that there is a correlation amongst ethnicity, gender, and department and the rates of citations. There are higher rates of citations for the papers that have greater diversity. Some other contrary results of the linear regression analysis indicate that the greater the number of authors does not immediately reflect increasing rates of citations. **Figure 1** showed two authors having a higher rate of citations than groups of three, four and five authors. This is also reflected in the results in gender and department homophily indexes vs rates of

citations shown in **Figure 2** and **Figure 3**. One might assume that an article with more authors in general would be more diverse. The general diversity of the authors does not always correlate to the rates of citations. With these additional results, I will continue my research with different types of analyses.

While results from the linear regression analysis does help show that the more diverse the authors' ethnicity, gender and department, the higher the rates of citations, there is one specific outlier that does stand out. **Figure 3** shows Department Homophily Index vs Citations. In this example, groups of two authors appear to have lower rates of citations than more diverse group of authors. There are many possible factors contributing to this, such as two-authored research articles not having enough interdisciplinary research within departments .at institutions. The Department Homophily Index vs Citations, with groups of two authors is the only outlier compared to all the other results that support my hypothesis.

The Cluster Analysis showed an increase in citations over time from 1967 to 2017. **Figure 4** shows that as time progressed, higher rates of citations occur. This finding contradicts the idea that an older paper would have more citations than a recently published one, though this may not always hold true in STEM fields. This requires further clustering analysis to help indicate what may have caused this. **Figures 5, 6 and 7** indicate that over time, rates of citations increase as there is an increase of diversity in ethnicity, gender and departments of authors. These figures also show that in years closest to 2017 articles have more citations and diversity. However, I am hesitant to directly state that this analysis proves that diversity has led to an increase in citations. The results still indicate, however, that the articles have higher citation rates when there is more

diversity in ethnicity, gender and departments within the University of California faculty.

In conclusion, some of my hypotheses were confirmed. Preliminary findings indicate a correlation between higher rates of citation and author diversity. This study points to a need for additional research and further analysis. In the future, I plan to continue my research to gain a clearer understanding of how diversity can impact an article's citation rates and a journal's impact factors.

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Insecurities Inside Black Love: The Complexities of Telling How Blacks Live & Love

Lexus Edison

Mentor: Dr. Felice Blake
Department of English

Abstract

Although literary scholars have examined African-American Literature as a representation of Black love and intimacy, stereotypes about blackness often inform the analyses. As a consequence, these scholarly texts do not engage black intimacy as part of the empowerment and liberation of Black people. This study focuses on the complexity of Black love in contemporary African American novels through a creative scholarship approach. Drawing upon autobiography, Black feminist approaches, and psychoanalytic theories, I offer a close reading of creative autobiographies as a way to examine how black intimacy is represented and the relationship between scholar, author, and text.

Introduction

While researching the topic of black love and intimacy for my senior thesis on black autobiography and healing, I found myself glued to the HBO television series *Insecure* by Issa Rae. The program features the show's creator Issa Rae in the role of "Issa," the eponymous protagonist who seemingly captures part of my own life story when it comes to making sense of love and intimacy in the black community. For example, the series' main character, Issa, is and is not the living person (Issa Rae) behind the program's creation. In other words, Issa Rae performs a fictional character named Issa while also incorporating her personal narrative of being an awkward black woman in intimate relationships with other black people in contemporary Los Angeles, California. Issa's intertwining of her personal story as a black single woman with the fictional character led me to critically examine the unique function of black autobiography in the meaning of black love and intimacy for black people.

Insecure and Black Love

Insecure centers on Issa's struggle to maintain and sustain an intraracial, heterosexual relationship. During season three, episode four, Issa reveals aspects of her childhood disappointments to her new love interest Nathan. Taking him on a tour of her childhood neighborhood, Issa stops at a house in Inglewood: the home where she grew up with her parents, and brother. She stops at a beautiful, two-story, white house and says, "This is it!" Nathan gapes and tells her, "Oh I see you livin' all bougie." The scene depicts Issa revealing to Nathan parts of her childhood that the audience has rarely heard about before this episode. She continues the conversation, stating, "Whatever! We were not bougie. My parents scraped up everything to afford this house. My mom always wanted to live in this

neighborhood.” These exchanges of personal testaments attest to the impact structural racism has on black intimacy and social relationships. With this statement, viewers gain an understanding of how her family longed to attain the finer things in life yet had to make sacrifices that also created a strain on the presumed meaning of intimacy and love. Nathan tells Issa that he understands her mom when he responds, “I’m not mad at her, this is nice.” Nathan then asks, “When’d y’all move out?” Issa replies hesitantly, “Uhh, my parents got a divorce when I was, what, sixteen? Right after we got the pool. . . . I was like, ‘Can’t y’all stay together for the kids... to swim!?’”

Issa’s admission about the pain of losing the house is connected to her question about the family struggle to stay together even for the sake of the kids. Her intimate expression to Nathan about this familial loss represents a key source of her insecurity. She feels as though the life she didn’t get to have is a consequence of her parents’ intimate severance. She shares the intimate story of her childhood disappointment. Issa performs the revelation of her whole self by literally getting naked (she used to sneak into her childhood home to skinny dip in the pool), and emotionally (by showing her vulnerability through rap and stories of her life aspirations). In this episode, Issa is longing to tell her story, share her experience, and be understood by her love interest when sharing her story of why love didn’t work for her family. Issa is revealing her dreams, dreams of being in a family that embraces social and economic mobility while maintaining the love—dreams that are deferred, denied and rejected. When dreams are deferred, denied and rejected, the impact is felt most intensely in our most intimate relationships—the places where dreams are made real and uttered quietly and hopefully. With those closest to us, in interpersonal spaces, our most fragile dreams are given fleeting voice, solidified, challenged, supported, and

affirmed. It is also where they can be crushed to dust.¹ Nevertheless, this scene represents the first time Issa explicitly shares such familial experiences and the audience and Nathan learn about her past. Through a fictionalized form of autobiographical storytelling, Issa offers Nathan an intimate position from which to share her history. Why risk being crushed by someone without the guarantee of those dreams being solidified, supported, reconciled, and conceptualized? Well, because as Issa experiences the getting naked in front of another person that may reveal that the person is willing to be understanding, compassionate and sympathetic as Nathan is when receiving her. This may have the effect of making one feel there is always something left to love.

Issa's revelation about her childhood disappointment uncovers a complex issue about black intimacy and black autobiography: the struggle to challenge normative ideas about family relations and the importance of storytelling to create new frameworks to analyze black experience. Issa shares with Nathan how her pain over her parents' divorce prevented her from enjoying the home they worked to provide. The fracture of love within her family occurs despite their claim to hetero-normative structures: her parents' attempts at gaining mobility, mirroring that of a white nuclear family with the two kids, son and daughter failed to keep them together. How Issa and Nathan perform during their romantic date reveals how African Americans' conceptions and critiques of interpersonal and domestic life can be, as Tricia Rose argues, a place to examine our understanding of love and intimacy for the community.

¹ Tricia Rose "Hansberry's *A Raisin in the Sun* and the "Ineligible" Politics of (Inter)personal Justice" (Temple University Press: Regents of the University of California, 2014) 31.

Discourse on Interpersonal Intraracial Black Love

My analysis of black autobiography and intimacy challenges the concept of home life constructed out of the desire to achieve the “American Dream.” *Insecure’s* narrative provides a communal space for the audience to confront issues people face daily. These issues of poverty, finance, gender and romance reflect the ongoing discourse about interpersonal/intraracial black love as seen in the work of scholars like bell hooks, Cornel West, Barbara Smith, Hortense Spillers, and Kimberly Springer. These scholars connect the injustices Black people endure to experiences in their intimate lives. Black scholars emphasize the complexity of black love and intimacy. For example, in *Breaking Bread*, bell hooks and Cornel West discuss the act of intraracial love as a revolutionary part of struggles against oppression. Barbara Smith traces the formation of black women’s studies through discussion of organizations such as the Combahee River Collective and politics of Black Feminism as it first emerged in *But Some of Us Are Brave: Black Women’s Studies*. “Mama’s Baby, Papa’s Maybe: An American Grammar Book” by Hortense Spiller analyzes how the gender construction of black women was created under slavery. These scholars revisit narratives in order to articulate issues of gender, poverty, financial and romance struggles prevalent in the black community. Intimate narratives are a means to understanding. As Tricia Rose states, “Intimate issues are never privately negotiated—at least not for Black people; they are defined significantly by complex public discourses, policies, and institutions.” Given this fact, these scholars stress the essential need for Black intimacy to be radicalized/transformational.

Although scholars and artists examine and create African-American culture and politics in relation to black love and intimacy, stereotypes about blackness can inform how these analyses are perceived. For example, as Angela

Davis and Tricia Rose discuss, the Moynihan Report² from 1965 emphasizes and distorts stereotypical aspects of the single Black mother.³ Daniel Moynihan wrote, “In essence, the Negro community has been forced into a matriarchal structure which, because it is out of line with the rest of the group as a whole and imposes a crushing burden on the Negro male and, in consequence, on a great many Negro women as well.”⁴ Moynihan’s report was used to implement public policies which were thought to help the “Negro Family” while also sustaining the conservative belief that single motherhood is especially immoral and harmful and the cause of poverty.⁵ It was based upon racist stereotypes. Racist stereotypes about black women harm black men and women through gender-specific mechanisms by describing the black male as emasculated due to the black woman’s alleged liberated status.⁶ In other words, Moynihan’s report

² Angela Davis “The Legacy of Slavery: Standards for a New Womanhood” in *Women Race & Class* (New York: Vintage Books: A Division of Random House, 1981), 13.

The notorious 1965 government study on the “Negro Family” — popularly known as the “Moynihan Report”

³ Tricia Rose, *Longing to Tell* (New York: Picador, 2003), 390. Racial stereotypes about blackness is shaped deeply by our histories in this world; histories that have seeped into places many find it difficult and painful to explore. Entrenched images of Black pathology and key sexual myths established during and immediately after slavery have given rise to widely deep-rooted images of black women.

⁴ Angela Davis “The Legacy of Slavery: Standards for a New Womanhood” in *Women Race & Class* (New York: Vintage Books: A Division of Random House, 1981), 13.

⁵ Dorothy Roberts “The Welfare Debate: Who Pays for Procreation” in *Killing the Black Body: Race, Reproduction and the Meaning of Liberty* (New York: Vintage Books: A Division of Random House) 222.

⁶ Kimberly Springer, *Living for the Revolution: Black Feminist Organizations, 1968-1980* (Durham and London: Duke University Press, 2005) 38. Springer is also referencing the infamous Moynihan Report rooted in patriarchal and racist ideologies of the black family and womanhood.

underscored the notion that black women perpetuate black emasculation.

Many of these stereotypes and images reproduced in the Moynihan Report emerged during the system of chattel slavery. For instance, during slavery, issues of black life, including love and intimacy, were understood from the perspective of white hegemonic patriarchal values.⁷ Therefore, the manner in which black love began was distorted, not because of matriarchal family structures, but from the debasement by white male dominant culture.⁸ The objectification of black life justified the dominant, white, male ruling class in their representation of how black lives were portrayed and perceived. Angela Davis dismantles white hegemonic patriarchal values in “The Legacy of Slavery: Standards for a New Womanhood,” by rejecting the idea that black women could be Elizas; Eliza’s did not represent the experience of (black) women who toiled under the lash of their masters, worked for and protected their families, fought against slavery, who were beaten and raped, but never subdued.⁹ Eliza is a character in Harriet Beecher Stowe’s popular abolitionist novel *Uncle Tom’s Cabin*.

⁷ Three writers (Angela Davis in “The Legacy of Slavery: Standards for a New Womanhood” in *Women Race & Class*; Hortense Spillers in “Mama’s Papa’s Maybe: An American Grammar Book” and Kimberly Springer in *Living for the Revolution: Black Feminist Organizations*) reiterate this very notion: black lives, love being limited within the confines of white patriarchal values.

⁸ Tricia Rose, *Longing to Tell* (New York: Picador, 2003), 390. Sexual ideology, domination, and violence were central components of slavery. Plantation owners widely used black women as breeders—by forcing them to have sex with enslaved African men and by raping them. These and other forms of violence were justified by reasoning black people were only three fifths human and were sexually debased creatures. This is how the construction of black love and intimacy began for enslaved African Americans.

⁹ Angela Davis “The Legacy of Slavery: Standards for a New Womanhood” in *Women Race & Class* (New York: Vintage Books: A Division of Random House, 1981), 29.

Davis posits that white women readers were to see themselves within this character. Eliza “accepted the wholesale nineteenth-century mother worship,” and by doing so Davis states that Stowe, “miserably fails to capture the reality and truth of Black women’s resistance to slavery.”¹⁰ Davis’ critique underscores how Stowe’s writing cannot align with black autobiographical narratives or reflect black life accurately. Given the history of enslaved black lives, Davis demonstrates that black women, as intersectional, cannot adhere to white traditional womanhood roles. Davis’s critical intervention challenges the stereotypes of enslaved African women as ‘Jezebel’ or the ‘Black Mammy’ and reinforces the understanding that black women were equal to black men and essential to survival. Davis’s renunciations of gendered and racial stereotypes about the black family structure and enslaved African women’s roles allow new narratives to emerge that validate the complexities black people face intimately as Issa Rae does in her series *Insecure*. Davis’s and Issa Rae’s analyses may be from different eras, yet each explores how multilayered and complex black lives are. They both seek to answer a key question for the black community: how do black people become intimate through sharing their stories? Is it through mediums such as an HBO thirty-minute comedy show, or by analyzing the literature black writers produce? Moving from their work, I believe that black autobiographies (creative and critical first-person narratives) serve as a method to understanding how black communities define their intimate lives.

A critical examination of black autobiography can provide insight into the intimate narratives of black life. To write a black autobiography is to “search for the power within one’s self and be willing to move through being afraid to whatever lies beyond. It makes one look at the most

¹⁰ See above.

vulnerable places and acknowledge the pain felt.”¹¹ Audre Lorde published her “biomythography” in 1982. Through sharing how she, as a black lesbian Caribbean woman, uncovered her past and present self, she poetically writes the way in which she became Audre Lorde, the poet, the activist, and the feminist we know. By revealing how she has “always wanted to be both man and woman, to incorporate the strongest and richest parts of her mother and father within her—to share valleys and mountains upon her body the way the earth does in hills and peaks,”¹² Lorde lays herself bare. She provides the readers her own self-construction of gender and sexuality through her terms as a black woman in her biomythography. In this way, she is also able to construct a powerful voice: “I am who I am, doing what I came to do, acting upon you like a drug or a chisel to remind you of your me-ness, as I discover you in myself.”¹³ Finding each other in one another is to discover self, and Lorde’s recollection of herself beckons black people to accept themselves as they are and the messiness of their lives. As Lorde might argue, we compare our lives to the stories we know.¹⁴ Knowing this, how have black people redefined, and reimagined the terms of love, and family? How have they created new frameworks?

¹¹ Audre Lorde, “Eye to Eye” in *Sister Outsider* (Berkeley: Crossing Press, 2007) 146-147. She discusses how she began to write about Black women’s anger and the thing that fuels the anger/frustration. To find the power to combat the issues one must look at the vulnerable places to remove the source of that pain from the enemies’ arsenals. And if one accepts themselves then nothing can diminish them. Therefore, if one looks at the autobiography as the most intimate site then the enemy’s weapons can be discovered and removed.

¹² Audre Lorde, “Prologue” in *Zami: A New Spelling of My Name* (Freedom: Crossing Press, 1982) 7.

¹³ See note 8 above.

¹⁴ Tricia Rose, “Introduction” in *Longing to Tell* (New York: Picador, 2003) 3. This line is quoted from Toni Morrison as Bell Hooks and Cornel West also does in *Breaking Bread: Insurgent Black Intellectual Life*.

Tricia Rose in *Longing to Tell* produces a compilation of black autobiographies that engages black intimate life. Analyzing how race, gender and class shape the roles black people occupy in society, she identifies how these factors contribute to racial stereotypes and influence intraracial, intimate stories. She conceptualizes black autobiography to dispel racial stereotypes, and to demonstrate how black lives matter because black people, too, have important stories to tell. I envision black communities where the complexities of love and intimacy are understood and accepted without a homogenized identity being the determining factor for whether black love prospers. I am talking about a development of black communities where people can come together and break bread, a place where they can share their stories, and be accepted for who they are. Thus, if any truly radical potential is to be found in the idea of black love and intimacy, it would be located in the most intimate space—the black autobiography, a place where black men and women can also learn to understand themselves and allow others into their lives as the women in *Longing to Tell*.

Longing to Tell: Black Women Speak

Tricia Rose's *Longing to Tell* is a compilation of oral histories that Rose conducted with black women about intimacy and sexuality. I call them black autobiographical narratives. This compilation of stories is organized into three different sections: I. Through the Fire; II. Guarded Heart; and III. Always Something Left to Love. Each section attempts to reveal the complex ways that black women define sexuality. The section titles are derived from Lorraine Hansberry's play *Raisin in the Sun*, which Rose describes as "an entire play that highlights the crucial role of interpersonal relationships in negotiating, fending off and challenging structural oppression and the distorted

worldview and despair it cultivates.”¹⁵ In the same manner, *Longing to Tell* illuminates the significant role of black autobiography in articulating and analyzing how portrayals of interpersonal relationships define intimacy and love for the black community.

However, Tricia Rose’s compilation of stories about the everyday black woman in *Longing to Tell* questions how race, intimacy, and sexuality are defined in relation to the structural insecurities that black women have due to oppression. For example, Sarita, a twenty-two year old ex-Muslim biracial woman, struggles to negotiate her intense love of black men and her profound disappointment over how black men treat black women: “Why should I love you?... Men have hurt me as a black woman for so long, so why should I put down my anger? Why do I always have to sacrifice for you? So you can be loved?” Later she says, “black men are so full of love and life. They really are amazing people and they go through so much and it’s hard to cut them out.”¹⁶ She juggles thoughts of why black men continue to oppress and hurt the black women they love while trying to understand more about herself and black men by engaging in a conversation with her boyfriend. For example, Sarita describes an argument with her boyfriend in which he told her black men are more oppressed than black women saying, “Well we die more than you do, don’t we?” Sarita retorted, “But we’re the ones suffering as a result of your death. So is it that your life is more important than mine? You’re dead but I’m suffering a lot. So what does that mean? That your life is more important than my life?” Her boyfriend replied that he walks through life a certain way: when he sees police officers and different people, there’s

¹⁵ Tricia Rose “Hansberry’s *A Raisin in the Sun* and the “Ineligible” Politics of (Inter)personal Justice” (Temple University Press: Regents of the University of California, 2014) 32.

¹⁶ Tricia Rose *Longing to Tell* (New York: Picador, 2003) 21.

little bells ringing, little signals. She admitted that she doesn't live that way and that maybe other black women live that way, that it's really just life to be battling and running to something with each other is just life. Sarita realizes through this intimate talk with her boyfriend that she can accept the anger and find joy and hope in black men, no matter the condition of her personal life and the compromise with black men that have angered her. Although, as a black women, Sarita is oppressed by being black and incessantly told by the world that black men are not needed, she understands and relates through her autobiography that black women are complex and fight racism just as strongly as black men do.¹⁷

The narratives these black women provide in *Longing to Tell* always situate their childhood as central to their understanding of their adult lives. When reflecting on how they defined love and intimacy as adults, they rely heavily on their formative years to create their mini autobiographies. Luciana states, "I don't trust anyone. No more best friends."¹⁸ At thirty-eight, she refuses to trust people and make close friends. She explains that at a young age she was best friends with her mother until in the ninth grade when her mother found out that Luciana was pregnant. Her mother had an affair with her boyfriend, which instilled a sense of distrust in Luciana. This betrayal and the accumulation of lies told to her over time constantly reminded her why she should be distrustful as a form of self-protection.

These black autobiographical stories share experiences of betrayal and self-love in the context of black domestic life. The variety of voices among the women interviewed is essential because this provides the reader with varying perspectives and enables a wide range of stories to

¹⁷ Tricia Rose, *Longing to Tell*, 48.

¹⁸ Tricia Rose, *Longing to Tell*, (New York: Picador, 2003)54.

be told by and among black people. These women's stories of intimate struggles are necessary to challenge the idea that only class impacts the success rate for intimacy and love. The middle-class black autobiographies in *Longing to Tell* challenge the desire to maintain the 'white picket fence narrative' of the American Dream. This means challenging the belief that when black people attain more racial capital (through inheriting or earning more wealth and agency), they should be able to fare better than previous generations. However, reading the women's stories in *Longing to Tell* illustrates that the narratives of even an average middle-class black woman show how intergenerational issues of economic exploitation repeat themselves.

In Linda Rae's story, in the "Through the Fire" section, she describes how she endured years of physical abuse and became a prostitute; it is one of the hardest to grapple with. From early childhood she was beaten by her grandmother like an animal and was raped by her brothers.¹⁹ These traumatic events prevented her from learning how to love properly. She became involved with a man, a pimp who beat her like her grandmother had. She learned about intimacy from the lack thereof, from the inability of her family to provide care; she realized that her life, full of silence, was a sick one. She saw the cycle as she got older and understood that silence was killing her. She kept her problems a secret. The abuse at the hands of her brother and grandmother, and inability to speak about the trauma, kept her using drugs. Her story, however, sheds light on how, in spite of these traumatic events, she continued to thrive. Through her story she owned her sexuality and confronted her exploitation. She shared her story and spread the gospel (the story of her life that led to her healing) to other women to heal her life and that of others.²⁰ Becoming intimate

¹⁹ Tricia Rose, *Longing to Tell*, 96.

²⁰ Rose, 115

through sharing her story was an emotional release and although she may not have found all her dreams for a “Beaver Cleaver” suburban family, dream, she learned the importance of developing a sense of her identity on black feminist terms.²¹ Linda Rae tells the reader:

I thought about it, and it took me for the longest time to figure out what she was talking about to me (her twelve-steps sponsor); and what she was telling me was, ‘Let the little girl that never got a chance to grow up come out and play.’ It was innocence. That’s what it was, innocence. Before anything ever happened, there was an innocence, there was a peace, there was something that was untouched by anything. And I can be that woman today, I can start where I never finished, never got a chance to start. I can be that person, and I can be coy and I can be shy, and I can laugh nervously, and I can play little girl games, and I can play hard to get. Things that people take for granted today.²²

This revelation occurs during her recovery stage. Her twelve-step sponsor encourages her to look in the mirror and beyond the physicality of her hair, body, and skin and into her eyes and her soul. This is an exercise of going back to innocence, to a moment in time where she didn’t recognize racism, sexism, issues of sexuality but pure self being free. Being a black woman with such trauma burdened her.

²¹ Rose, 102. Beaver Cleaver, an American sitcom (1957-1963) about a white suburban family, was a show that she would see at her neighbor’s house.

²² Rose, 112

Refusing to accept the stereotypes that attached to her life freed her. She did not succumb, as Higginbotham describes it, to the politics of respectability to define her life and protect her as a black woman; rather, she decided to embrace the little black girl within her and found her body to be a temple (or a “precious castle,” as she refers to it) that deserves to be treated with tender loving care. Her recognition of her own story, sharing in the circle and growing with her support group, helps her find the power to move along and keep her head up. The support she receives is enabled through the practice of surviving and thriving by using her autobiography to persevere.

Cocoa’s story, also in “Through the Fire,” depicts the relationship between intimacy and healing. Cocoa lived in a hetero-normative black middle-class structured household without abusive situations such as Linda Rae, but still ended up single, divorced and alone at thirty-seven years old. “Intimacy to me is actually being able to share feelings and comments with someone and not worry about them running away from you.”²³ Cocoa defined intimacy as the lack of fear and being accepted for how one is. Cocoa tells the reader that it is critical for someone to share their thoughts and fears even when the other person you share them with doesn’t fully comprehend your burdens. The mere fact that someone is open and willing to be vulnerable is what matters and the interchanges that occur between two people is what allows love to be fully captured in this intimate exchange.

Maintaining and sharing family stories and stories of self is critical for black people in order to sustain “the black family as an important cauldron of resistance, forging and preserving a vital legacy of collective struggle for

²³ Rose, 150

freedom.”²⁴ Although the personal black family’s collective struggle may often be publicly stereotyped, it is nevertheless a black family’s collective struggle for freedom. The black family’s collective struggle for freedom is also private in the sense that it is a delicate relationship between the individual and the systems of oppression. As Cocoa states, the manner in which she discovered herself was not through mediums like BET as her niece does, but through recollection of her story, her own personal narrative. Black people in a racist society are literally at risk on a daily basis and are constantly susceptible to the consequences of the culture’s barely concealed racial hostility and racist treatment. Hence, the black subject is consistently vulnerable, and this exposure to racialized pain might make the vulnerability of black love and intimacy somewhat more burdensome for the African American, creating additional difficulty for women such as Cocoa to understand how intimacy and black love is managed and forged.²⁵

The lack of communication from Cocoa’s parents hindered her understanding of intimacy and love in myriad ways such as maintaining a healthy relationship, including how to communicate with yourself and others about how you feel. For instance, she states how she was trying to be a perfect little girl for a long time, although she has these desires and ambitions, things she wanted to do she couldn’t. She asked herself, “How could I be two people?”²⁶ Cocoa struggled with the notion of being the perfect girl who never questioned her desires. Due to her parents’ neglect or failure to allow her to explore herself, such as going to pursue an

²⁴ Angela Davis, *Women, Culture & Politics* (New York: Vintage Books, 1990), 74.

²⁵ Candice M. Jenkins, *Private Lives, Proper Relation: Regulating Black Intimacy*, (Minneapolis: (University of Minnesota Press, 2007), 5.

²⁶ Tricia Rose, *Longing to Tell*, 160.

Art degree in Los Angeles, California, as an adult, she still was in limbo about who she could be or should be.

The close examination of such intimate black autobiographies, like Cocoa's, shows readers that, contrary to belief, normativity does not protect from disappointment. While Cocoa may have had a college education and grown up in a nuclear family, as in Issa Rae's *Insecure* depiction, it was not enough; intimacy still failed in their home. Intimate discussions did not often occur in Cocoa's home. This struggle around voice may be directly attributed to the mother's inability to speak on certain topics. Her mother never seems to have a voice. Cocoa mentions her father as the one who told the girls the parents had an older son who died. The father also tells the girls to never mention or acknowledge to their mother that they are aware of the dead brother. The mother and father dealt with intimate matters in very hushed tones, making it appear as though black lives subjected to pain are also meant to suffer in silence. Cocoa remembers:

I was with my ex-husband one time, I don't remember the question that I asked, but he noticed also. And I said, "Did you notice how quickly she cut me off?" And he said, "Yeah." And I said, "I won't approach that subject." I can't even remember what it was. I think it was about learning a little bit more about our family.²⁷

In this passage, Cocoa refers to her mother's actions to avoid talking about family matters. Her recollection of her relationship with her mother, and also her mother's separating herself from her sisters and family, reveals the

²⁷ Tricia Rose *Longing to Tell* (New York: Picador, 2003), 152.

mother's disconnection. It shows estrangement from her own family without any given reason which, in effect, created a rift within her own immediate family (the daughters, Cocoa, and husband). This refusal of her mother to share stories/memories with Cocoa and her sisters created a lack of intimacy between them. Combined with the lack of voice, it contributed to Cocoa and her siblings not being properly taught about life, which then led to her learning about sex from friends, and learning about her period and other details of life from a young woman next door.

As Cocoa's recognized her mother's silence, in her personal life she also realized she has a hard time feeling secure and speaking her own truths. Her mother didn't share her own experiences and also never disclosed what occurred in her past with her family; Cocoa, therefore, had difficulty in understanding what it meant to be a black woman. Had the mother disclosed or shared her experiences, maybe Cocoa would feel closer to her mother, less estranged from the larger part of her family's story, and more empowered to own her own narrative. The lack of communication about black life and what it means to be a black woman or man in society where blacks are subjected to harsh conditions can mean that loving one another becomes difficult, as is observed persistently in Rose's collection.

Similarly, Michelle Wallace also discusses the struggles within the black community to share our stories between us. The lack of recognition for the importance of black autobiography hinders private black lives:

Baffled by my new environment, I did something I've never done before—I spent most of my time with women. But no one talked about why we stayed in Friday and Saturday nights on a campus that was well known for its parties and nightlife. No one

talked about why we drank so much or why our hunger for Big Macs was insatiable.²⁸

The passage conveys how silence increases the hurt and pain that black women and the community as a whole endures.

The significant need to tell stories is present in how the collection *Longing to Tell* reflects on how black love and intimacy is able to be revealed. Michelle Wallace's story of her experience while in college at Howard University is very similar to Cocoa's reflections about the absence of talk between black women and the inability to speak the unspeakable. Each share stories of poor communication between the women around them, a silence which leads to stagnancy for the black community. Wallace states that when the women in the Howard dormitories came together, they never spoke of why they stayed in on Friday and Saturday nights on campus. She found her voice only when she entered into conversation with a black man as she did one day with a brother up at the City College about the roles of black women and men. She talked back even when it had its hazards. These conversations about gendered roles caused Michelle Wallace to start thinking and theorizing about black feminism and create coalitions such as the black women's consciousness-raising group. Discourse about intimacy through black autobiography essentially is what breaks the silence of many black women; it helps them find a voice and become intimate with one's self and with others.

bell hooks claims that the critical recovery and critical revision of one's past, tradition, history, and heritage are profoundly informed by how black women learned to

²⁸ Michelle Wallace, *But Some of Us are Brave: Black Women's Studies*. New York: The Feminist Press, 1992

assert historical agency in the struggle for self-determination. As hooks argues:

Remembering and recovering the stories of how black women learned to assert historical agency in the struggle for self-determination in the context of community and collectivity is important for those of us who struggle to promote Black liberation, a movement that has as its core a commitment to free our communities of sexist domination, exploitation and oppression. We need to develop a political terminology that will enable Black folks to talk deeply about what we mean when we urge black men and women to “get it together.”²⁹

Black feminist critical thought informed by narrative has the power to dismantle issues within the black community such as sexism and the only way to do that is to talk. hooks uses black women’s fight for agency because black women displayed a plurality of visions for social change with their autobiographies based on differences from one another in sexual orientation, class, color, and educational achievement.³⁰

Conclusion

The critical analysis of black autobiography helps create language that enables black communities to discuss the complexities and intricacies of black life. Storytelling

²⁹ Bell hooks and Cornel West, *Breaking Bread: Insurgent Black Intellectual Life* (Cambridge, MA: South End Press, 1991), 12.

³⁰ Kimberly Springer, *Living for the Revolution: Black Feminist Organizations, 1968-1980* (Durham and London: Duke University Press, 2005), 4.

helps get the community together and black autobiographies join in this discourse to shed light on why and how issues of gender, class and sexuality still create a sense of fragmentation within the community. As Tricia Rose's collection of oral narratives reveals, the ability to share and read black women's collective narratives of intimacy and sexuality enables one to also search for what they are longing to tell and to be vulnerable to their sisters or brothers. This sharing of black autobiographies could shift black thought. Exposing the lack of agency or social sites of struggles for African-American in these stories reveals the psychological issues that continue to live in the community. Black autobiography has dual functions by having black people being vulnerable within their private lives, but also exhibiting the structures of oppression that prevent them from being fully free and force stereotypes upon them.

The release that is awaiting the black community can occur through black autobiography. The searching of one's self is best met with one's own story. As Patricia Hill Collins states in her "No Storybook Romance," about Bandele's *The Prisoner's Wife*: "their story is certainly inspiring and can be read as a story of hope. However, whether these two individuals 'make it or not' is not the issue. They are not 'role models' whose actions should be emulated." In sum, black autobiographies should be respected and accepted as they, reflections of people in struggle, not as models for a perfect person or relationship.

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The Majority-Minority State: An Examination of Latinx Youth Political Engagement

Israel Chora

Mentor: Dr. Narayani Lasala-Blanco
Department of Political Science (University of Arizona)

Abstract

This paper utilizes an in-person survey, targeting people between the ages of 18-26, in the Santa Barbara-Isla Vista areas, to understand how material inequality, parental socialization and resources, such as available time, affect Latinx youth civic engagement in comparison with other demographics. The Latinx population is the largest ethnic group in California, approximately 38% of the total population (Pew Research Center 2014). Statistically, the Latinx population is mostly young and is characterized by having a high labor-force attachment rate. However, the Latinx population in California still experiences low educational attainment and earned income (Gutierrez and Zavalla 2009). Notably, poverty has a negative effect on civic engagement and political efficacy (Brady, Verba, and Schlozman 1995). Preliminary results show that material inequality and resources such as time—as well as parental socialization—are key to understanding Latinx youth political inequality.

Introduction

This paper provides a resource model for youth political engagement that includes traditional indicators of socioeconomic status, such as family income and occupation, while incorporating political parents and available time into the equation (Brady, Verba, and Schlozman 1995). By focusing more on immaterial resources, I hope to identify efficient avenues for promoting youth political engagement in traditionally low-income demographic groups, such as the U.S Latinx population. In order to test the assumption that politically engaged parents/guardians effect the political engagement of their children, I rely on survey data on youth in Southern Santa Barbara County (hereafter referred to as the Southern County)—which consists of the college town of Isla Vista, as well as the cities of Santa Barbara and Goleta.

This paper features a case study on youth political engagement in Southern Santa Barbara County. Therefore, it is necessary to consider the demographics of the area before presupposing that the findings will apply to the entire U.S youth population. In 2016, there were approximately 201,600 Latinx in Santa Barbara County (UCSB Economic Forecast 2016). However, there are differences in racial composition when one considers the entire county. In the Northern County, the majority of the population is Latinx, whereas in the Southern County, the Latinx population is the second largest ethnic group after Non-Latinx Whites. Although the Latinx population is large in Santa Barbara County, the percentage of the population that is Non-Latinx White (54%) is greater here than compared to California as a whole—Non-Latinx Whites are a minority in California as this group makes up only 38% of total population (Pew Research Center, 2014). Hence, this paper is titled the Majority-Minority state due to fact that the Latinx is the majority in California. Nationally, the Latinx population

continues to grow at rates higher than other ethnic groups (Pew Research Center 2014). These statistics point to a future in which the Latinx population has the potential to become an even greater political actor in the United States.

In spite of this growth, Latinx remain a demographic with one of the lowest rates of political participation. Although there are many similarities across Latinx nationalities, ultimately the Latinx population is comprised of individuals with many distinct histories and political influences. This might explain the different levels of political engagement within the Latinx population. However, I argue that an individual's political engagement, as measured by interest in politics in this study, is determined by a homogenous portfolio of resources that affect their willingness to take political action. While many material resources, such as wealth, are historically distributed unequally across racial groups, I suspect that immaterial resources can also vary greatly. Thus, this paper is principally concerned with investigating the effect and distribution of immaterial resources that influence political engagement.

Literature Review

The resource model framework for understanding political engagement is derived from the article "Beyond SES: A Resource Model of Political Participation" by Brady, Verba, and Schlozman (1995). Their findings strongly support the theory that socioeconomic status is just one of many variables that determine political engagement. Most importantly, they show that motivation to participate in politics does not equate to active participation unless one has the capacity to act. They note that the capacity to act is obtained causally, prior to being motivated to act. Furthermore, Brady and her colleagues provide an early assessment of the kinds of activities and programs that

would be the most effective for teaching youth, as well as adults, the civic skills necessary for impactful political organization and action. Some of the resources that were found to be statistically significant, and are incorporated in this study, include free time, citizenship, and on the job civic training. I extend this resource model by considering politically engaged parents as a positive resource for political engagement because it is evident that political opinions and even modes of political engagement can be taught in the home prior to adulthood.

According to Jennings, Stoker, and Bower (2009), the phenomenon of intergenerational political socialization is the most obvious and recognized influence on political opinion formation. Essentially, we are likely to adopt the views and ideologies that are affirmed through interactions within our family environment (Jennings, Stoker and Bower, 2009). However, the success of an intergenerational transmission from parent to child varies greatly. Studies have established that this variation is largely attributed to the nature of the political ideology, how strongly the ideology is affirmed by the parent, as well as shared environmental influences—such as education attainment, culture, and religion.

Jennings and Niemi also examine the dynamic nature of political attitudes and engagement in their article, “Continuity and Change in Political Orientations: A Longitudinal Study of Two Generations” (Jennings and Niemi 1975) In this study, they utilize a cross-sectional survey sample of high school seniors (n = 1669) and their parents (Jennings and Niemi 1975, 1319). Then, eight years later, they attempted to interview the same youth and their parents. The second sample was completed with approximately 67 percent of the original youth (Jennings and Niemi 1975, 1319). By the time of the second interview, the youth were nearly at the same level of ‘following what’s

going on in the government most of the time” as their parents were in 1965 (Jennings and Niemi 1975, 1320). The percentage of parents that were following what is going on most of the time also increased significantly by 1973. Their findings support the theory that political engagement increases over time. While Jennings and Niemi were concerned with the generational differences in interest in politics, this study explores the effect of parental socialization on the success of intergenerational political engagement across race.

Methods and Data

This study was overseen by the University of California Santa Barbara’s Department of Political Science. The name of the survey instrument is “The Political Attitudes and Media Use Survey.” The survey instrument was designed with guidance drawn from Hunter Gehlbach’s article “The Seven Survey Sins” to ensure the construction of unbiased questions and language-appropriate language for the intended sample population (Gehlbach 2015). Gehlbach’s article was also an invaluable reference for understanding the mechanisms that are at work in survey research. He provides insight into navigating the very delicate realm of surveying young populations by describing potentially offensive or biased survey design. Gehlbach’s insight directly translated into the final design of the survey and also provided some guidance for assessing the merit of existing literature.

The survey instrument is composed of two modules with 55 questions divided into five sections: Politics, Presidency, Media Use, Political Knowledge and Human Rights, and Background Information. These topics were selected in order to compare political engagement, attitudes towards the President and Presidency, and knowledge of human rights. The background information provided insight

into the participants' political ideology, race, age, grade level, and sex. In order to avoid any measurement error due to the ordering of the questions, we used two different versions of the survey. The variations in the survey construction were the order of the modules, as well as the order of the questions within the modules. All question wording remained consistent throughout all variations of the survey.

UCSB's Department of Political Science trained the team of interviewers, comprised of both undergraduates and high school students, to conduct the survey. The interviewers were bilingual English and Spanish-speaking. The interview locations were selected to maximize the likelihood of respondents being available to participate in the survey study (see **Figure 1**). The interviewers were allowed to take participants to any nearby location that was most convenient for the respondent. The sample population consists of youth between the ages of 18 and 26 who reside in the Santa Barbara-Isla Vista area. The respondents were offered the choice of taking the survey in either English or Spanish. The primary sampling method used was face-to-face interviews. We offered the option to take the survey electronically, via an internet link, but all participants opted to conduct the survey in-person, $n = 51$.

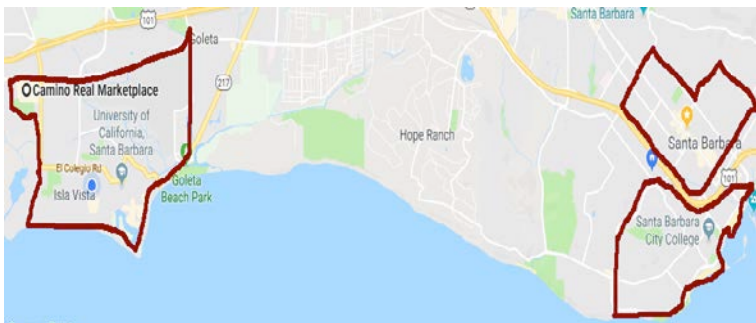


Figure 1 Map of the locations where the fieldwork was conducted

The interviewer was instructed to introduce him or herself to the potential participants and explain that we were conducting a survey to study political attitudes in Santa Barbara. If the potential participant appeared to be under 18, we ask if a parent is available to provide consent for them. If the answer is no, we end the interaction there. If the answer is yes, we explain that the survey pertains to political attitudes and media use. The interviewer then assures the participant that all answers are confidential. The interviewers were instructed to read the survey questions to the respondents and transcribe their responses. For questions that required sensitive information, such as “What is your household income,” respondents were offered the opportunity to complete that portion of the survey on their own. After completing the survey, the participant was provided with the opportunity to win a Starbucks gift card worth \$50 through a raffle. Of the total fifty-five questions in the survey, I relied primarily on the following variables using the wording from the survey questions (see **Table 1**).

Table 1 Variables of Interest

Variable	Survey Question
Ethnicity	“How would you describe yourself?”
Political engagement	“Are you interested in Politics?”
Parent(s)’ political engagement	“Are your parents/guardians interested in politics?” “[If yes or no] why do you believe that?”
Workforce participation	“How many hours do you work a week?” “[If working] what is your occupation?”
Household income	“What is your household income?” 1. Less Than \$30,000 2. \$30,000 - \$100,000 3. More than \$100,000

Findings

Table 2 provides the breakdown of interest in politics by Latinx and Non-Latinx. There is a total of 11 Latinx respondents and 40 Non-Latinx Whites. Among the Latinx respondents, 72.73% are interested in politics, and 27.27% are not interested in politics. There is an observed 2.37% difference in the proportion of the sample population who are interested in politics between Latinx and Non-Latinx. However, given the small sample size, this difference is not statistically significant. However, it does suggest the majority of youth in Southern Santa Barbara County are interested in politics.

Table 2 Interest in Politics by Ethnicity, n=51

Ethnicity	No	Yes
Latinx	73% (8)	27% (3)
Non-Latinx	75% (30)	25% (10)
Total	75% (38)	25% (13)

Table 3 gauges the amount of time available to spend on political activities using average weekly hours of work as a proxy for unavailable time. However, given that some jobs provide civic skills that promote political engagement, the follow-up question “what is your occupation?” is useful for providing additional context. The results are interesting due to different distributions of hours worked in the different groups. In the sample population, 49.02% of the respondents were employed between 5 and 20 hours. Among the White and Asian (Non-Latinx) populations, there was a greater proportion who worked more than 20 hours a week. In contrast, of the Latinx respondents, 8 out of 13 are employed for fewer hours while the remaining five do not work. As

previously mentioned, the examination of the types of jobs that these respondents had provided more information as to the types of civic skills that they might be gaining at work. For example, among the Whites who work more than twenty hours a week, there was a prevalence of job titles that suggest a high level of civic skills, i.e., Public Affairs Intern and Assistant to Regional Manager. The part-time jobs in the Latinx population were mostly in food service. Related to average hours worked, the following table provides information on household income.

Table 3 Average Weekly Hours Worked by Ethnicity, n=51

Ethnicity	0 Hours	5 – 20 Hours	More than 20 hours
Latinx	27% (3)	73% (8)	-
Non-Latinx	35% (14)	43% (17)	23% (9)
Total	33% (17)	49% (25)	18% (9)

Political engagement by household income provides an interesting distribution where the median income group has the highest percentage of people who are *not* interested in politics (see **Table 4** below). As expected, the highest income group has the highest percentage of people who are interested in politics. Within the Latinx population, the preliminary findings suggest that those from households with the median incomes of \$30,000-50,000 exhibit the least amount of political engagement. Within this income bracket, the percentages of those interested and not interested in politics were split evenly. Considering time as a resource like money might explain the median income group’s lack of perceived benefits from investing time in politics. The lowest income group, however, might have greater political demands.

Table 4 The relationship between household income and interest in politics

Household Income	No	Yes
Less than \$30,000	29% (4)	71% (10)
\$30,000 – \$100,000	32% (7)	68% (15)
More than \$100,000	9% (1)	91% (10)
Total	26% (12)	74% (35)

Now that the key material resources have been discussed, I present in **Table 5** the findings of the principle causal relationship between parent interest in politics by race and parents’ interest in politics on the youths’ interest in politics.

Table 5 The relationship between ethnicity/race and parent interest in politics

Ethnicity	Parent(s) Interest in Politics	
	No	Yes
Latinx	55% (6)	45% (5)
Non-Latinx	18% (7)	82% (32)
Total	26% (13)	74% (37)

In terms of parental interest in politics, there is a great disparity between Latinx and Non-Latinx. Among Non-Latinx respondents, 82.05% of them have parents interested in politics and 17.95% of them have parents that are not interested in politics. If having parents with an interest in politics increases political engagement in youth,

then this finding provides evidence to believe that increasing the youth’s perception of their parent’s political interest would increase their own political engagement.

Table 6 The relationship between parent interest in politics and interest in politics

Parent(s) Interest in Politics	Respondent’s Interest in Politics	
	No	Yes
No	54% (7)	46% (6)
Yes	16% (6)	84% (31)
Total	26% (13)	74% (37)

The final findings, presented in **Table 6**, compare the data on youths’ interest in politics with parents’ interest in politics. Here, we see a large correlation between parents’ and respondents’ both being interested in politics. In particular, a large majority of the total population is interested in politics and have parents that are also interested in politics. However, a slight majority of the youth who believe their parents are not interested in politics are not interested in politics.

Conclusion

The preliminary findings suggest that the variation across the ethnic groups examined in this study in political engagement is influenced by material inequality and available resources, especially within the Latinx population. This distribution by race and political engagement was expected. However, it appears that overall, the youth in Santa Barbara area are quite politically engaged. The positive effect of parental socialization on political engagement seems to be stronger for Non-Latinx people.

Many of the Non-Latinx mentioned that their parents encouraged them to care about politics by assuring them that their voices mattered, and they could make a difference. In addition, many Non-Latinx stated that politics was very commonplace in the household and that their family watched political news together. However, Latinx should be optimistic about the positive effect that parent/guardian interest in politics has on child interest in politics. This is already happening in response to the current political climate. Many of the Latinx respondents noted that their parents were especially interested in issues regarding immigration. Although immigration has undoubtedly been framed as a Latinx issue, it is important that as a community, Latinx participate in other areas of political discourse.

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Contributors Volume VIX



Claudia Alegre graduated with a double major in political science and sociology at UC Santa Barbara in June 2019. As a McNair Scholar, she had the opportunity to present her research at her institution as well as national McNair conferences. During her time as an undergraduate, her research interests focused on race and ethnic politics, specifically Latino politics. In addition, Claudia also conducted research on the health disparities of undocumented Latino immigrants in the U.S. She had the privilege of working under the mentorship of Dr. Narayani Lasala-Blanco and Dr. William Nomikos from the UCSB Political Science Department and Dr. Erika Arenas from the UCSB Sociology department. In the fall of 2019, she will begin a Ph.D. in Political Science at UCLA to continue studying Race, Ethnicity, and Politics. Direct correspondence to: calegre6@ucla.edu



Eduardo Cardenas-Torres graduated from the University of California, Santa Barbara in June 2019 with a Bachelor of Science in Statistical Science. His main research interests are biostatistics cancer surveillance and genomics. During his time at UCSB he worked under the mentorship of Dr. Michael Nava in the Statistics and Applied Probability Department. Eduardo will begin a Doctoral program in Statistics at the University of Illinois, Urbana Champaign. Direct correspondence to ec17@illinois.edu



Steven Castro comes from Norwalk, California. He graduated from UC Santa Barbara in June 2018 with a bachelor's degree in Linguistics and will be pursuing his PhD in Linguistics at the University of Chicago starting in fall 2019. His academic interests include language documentation and working with endangered or under-documented languages. Steven also has interests in

morphology and phonology. Direct correspondence to: smcastro@uchicago.edu



Israel Chora majored in Economics and Political Science as an undergraduate at UCSB. His research interests lie in the intersection of public policy and economics. Some of his notable research projects have been on political engagement, publication productivity, diversity in the Economics academic profession, and education policy. While at UCSB, Israel participated in the UCSB

McNair Scholars program and the Gretler Fellowship Program in the Economics Department. His faculty mentors are Professor Narayani Lasala-Blanco, Professor Kelly Bedard, and Professor Richard Startz. Israel has presented research at conferences across the country and earned 2nd Place Social Science Research Award at the McNair/SSS Scholars SAEOPP National Research Conference in Atlanta, GA. Israel plans to apply to graduate school in Economics and Public Policy in fall 2019. Direct correspondence to: israelchora97@gmail.com



Lexxus Edison transferred to the University of California, Santa Barbara (UCSB) from College of the Canyons where she earned an Associate Arts Degree in English. She graduated from UCSB in June 2019 with a BA in English. Her primary fields of research interest are African American literature and the creative writing industry. In fall 2019, Lexxus will begin a PhD in the English

Department at UCSB. Direct Correspondence: coffeyedison@ucsb.edu



Zingha Foma graduated from the University of California, Santa Barbara, in 2019 with a Bachelor of Arts Honors Distinction in Black Studies and a History minor. She worked under the supervision of History professors Dr. Mhoze Chikowero and Dr. Paul Spickard. Her primary research interest in the history of African textiles and dress cultures uncovered the complexities within African dress cultures that has been underdeveloped by factors such as colonialism and capitalism. She hopes to uncover the roles Africa's colonizers have played in the transformation of African body adornments and seek answers to such questions as: how did the African textile industry become a European and Chinese owned industry? What were some of the methods used to dominate and replace indigenous textiles and textile production industries? What are the economic and cultural implications on the indigenous textile production industry? Zingha will be pursuing a PhD in History at New York University starting Fall 2019. Direct correspondence to: fomazinghal@gmail.com.



Jasmin Del Carmen Morales, graduated from the University of California, Santa Barbara, in June 2019 with a BA in Sociology and a minor in Education. A first-generation Central American student, her research focuses on the persistence and retention of Latinx students in the Science, Technology, Engineering, and Mathematics. Jasmin will be a Post-Baccalaureate Fellow in Project

Management & Program Support at the Carnegie Foundation for the Advancement of Teaching located at Stanford University. Upon completion of this two-year program, she will seek her PhD. Direct correspondence to: morales.jasmin17@gmail.com



Johanna Najera graduated from the University of California, Santa Barbara in June 2019, double-majoring in Anthropology, emphasis in archaeology, and History of Art and Architecture, emphasis in museum studies. During her undergraduate career, she was involved in various internships, notably in the Meso-American Research Center and Art Design & Architecture Museum.

Johanna worked closely with renowned specialists in Maya archaeology, Dr. Anabel Ford and Dr. Gerardo Aldana to explore household archaeology, Maya hieroglyphs, and curation. She will continue to research archaeology as a graduate student in the Anthropology PhD Program at UC Riverside. Direct correspondence: johanna.najera@ucr.edu



Zenzile Riddick graduated from the University of California, Santa Barbara in June 2019, majoring in Sociology and minoring in History. During her time at UCSB she conducted research on the colonial foundations of educational practices, FAFSA-completion rates, the impact income has on graduation rates, and the role of financial aid in graduation rates. As a result of this research, she worked as the Director of Internal Affairs for the Coalition for a Better UC, writing California financial aid legislation and campaigning for financial aid reform across the state. In the fall, she will attend Harvard University's Education PhD program, in the Culture, Institutions, and Society concentration. Her research interests include culturally responsive educational models, independent Black models of education, and the implementation of critically-conscious curriculum. Direct correspondence: ZenzileR19@gmail.com



Ronald E. McNair was born on October 12, 1950, in Lake City, South Carolina. Son of an auto mechanic and a high school teacher, McNair attended the local high school, graduating as class valedictorian. He went on to earn a bachelor's degree, magna cum laude, in Physics, from North Carolina A & T University in 1971 where he was named a Ford Foundation

Fellow and a Presidential Scholar. McNair met a goal that he had set in high school to complete his PhD within 10 years. Five years after graduating from college, he received his doctorate in Physics from M.I.T.

Nationally recognized for his work in laser physics and the recipient of numerous fellowships, honorary degrees, and commendations, Dr. McNair was also a sixth degree black belt in karate and an accomplished saxophonist. In 1978, while working at the Hughes Research Laboratory, he was selected for the NASA space program. He was the second African American to fly in space. On January 28, 1986, Dr. McNair, along with 6 other astronauts, died when the space shuttle Challenger crashed exploded and crashed into the ocean moments after lift-off.

After his untimely death, Congress provided funding to start the Ronald E. McNair Post-Baccalaureate Achievement Program. UCSB's McNair Scholars Program is dedicated to helping promising scholars follow Dr. Ronald E. McNair's path of scholarship and service.

The beautiful Valley Oak (*Quercus lobata*), featured on the front cover, is on the grounds of the Sedgwick Reserve. The Reserve, a world-class research, conservation and education facility, is located in Santa Barbara's Santa Ynez Valley, some 30 miles from the UCSB campus. Sedgwick comprises nine square miles and two complete watersheds and is part of the University of California's natural reserve system. Sedgwick has the distinction of being among the largest and the most diverse reserve of its kind in the country and is the only one in the UC system with a telescope. In keeping with the mission of the UC Natural Reserve System, it is well suited for scientific investigation and for students of all ages to learn about the natural environment.

