

# TXSTUR

Texas State Undergraduate Research Journal

Volume V | Issue I

TEXAS  STATE  
UNIVERSITY

*The rising STAR of Texas*

MEMBER THE TEXAS STATE UNIVERSITY SYSTEM

Spring 2018.1



# Texas State Undergraduate Research Journal

A peer-reviewed journal for multidisciplinary research

## Volume V | Issue I

Spring 2017

### Editorial Board

Luke Jenkins - *Managing Editor*  
Sara Pavey - *Managing Editor*  
Sawyer Click - *Editor*  
Rachel Freeman - *Editor*  
Alec Trussell - *Editor*  
Dr. Ron Haas - *Faculty Supervisor*

For more information please contact TXSTUR via the following:

Email: [txstur@txstate.edu](mailto:txstur@txstate.edu)

Phone: (512) 245-2266

Website: [www.txstate.edu/undergraduateresearch/txstur](http://www.txstate.edu/undergraduateresearch/txstur)

This information is available in alternate format upon request from the Office of Disability Services.

### Texas State University Board of Regents:

Rossana Salazar - *Chairman* - Austin  
William F. Scott - *Vice Chairman* - Nederland  
Charlie Amato - *Regent* - San Antonio  
Veronica Muzquiz Edwards - *Regent* - San Antonio  
Dr. Jamie R. Garza - *Regent* - San Antonio  
David Montagne - *Regent* - Beaumont  
Vernon Reaser III - *Regent* - Bellaire  
Alan L. Tinsley - *Regent* - Madisonville  
Donna N. Williams - *Regent* - Arlington  
Kaitlyn Tyra - *Student Regent* - Huntsville  
Dr. Brian McCall - *Chancellor*

# DEAR READER,

We are thrilled to present to you the 2016-2017 edition of the *Texas State Undergraduate Research Journal*. This journal has evolved considerably since it was established in 2013, and this past year was no different. We received more submissions for this volume than ever before; the TXSTUR editorial board has merged with Dr. Ron Haas' writing program; this volume is also the first edition to be distributed in print.

Publishing this particular edition is bittersweet for both of us, as it marks our last year as managing editors, members of the TXSTUR editorial board, and undergraduate students at Texas State University. When we became managing editors in January 2016, we were eager to implement the vision that we both had for this journal: a publication run completely by undergraduate students that showcased the extraordinary research of our undergraduate Bobcats across any and all academic disciplines.

We've succeeded. This particular edition alone covers economics, forensic anthropology, sociology, business law, and filmmaking. TXSTUR has finally moved to print. The publication's new partnership with the Honors writing program will ensure that the quality is better than ever. We have made incredible amounts of progress over the past year and a half in laying a solid groundwork for a journal that will benefit Bobcats for generations to come.

Of course, this progress could never have been possible without the invaluable assistance of Dr. Ron Haas and the endless support of Dr. Heather Galloway. We would also like to thank our authors for all of their hard work—their intellect is really the star of this journal. And, as usual, we are exceptionally grateful for our wonderful editorial team, who make this publication tick every semester, and the peer reviewers who believe in the future of undergraduate research here at Texas State.

As the two of us begin the next chapters of our respective lives, we are happy to know this journal will also be entering a new era of its own. Although it's not easy to relinquish something that is so close to our hearts, we know that we are leaving it in capable hands. As the journal's new leaders assume their role, we know that they will grow our publication with every new issue. We could not be more excited for the future of this journal. We hope that you are too.

We are proud to have served our fellow Bobcats in laying the foundations for TXSTUR, and in the future we hope to see even more of our students utilize it as a stage to present their ideas. You can find more information about how to get your work published at our Undergraduate Research website, [txstate.edu/undergraduateresearch/txstur.html](http://txstate.edu/undergraduateresearch/txstur.html).

**SINCERELY,**

**LUKE JENKINS & SARA PAVEY**

MANAGING EDITORS, TEXAS STATE UNDERGRADUATE RESEARCH JOURNAL

# CONTENTS

**04** Inequity: A Cultural, Historical, and Present Account of Public School Funding Allocation within the State of Texas

**10** Scurvy: A synthetic approach to the disease and its influence in the Great Irish Potato Famine, 1845-1852

**18** Protecting Justice or Depriving Rights? How Police Misconduct Legislation Disproportionately Benefits Law Enforcers

**28** The Spectrum Of Inequality: Depictions Of Colorism In Make-Up Color Names

**37** Law School & the Possible Recovery of America's Legal Profession

**42** How Economic Indicators Influence Mexican Immigration in the United States

**52** From French Revolutions to Gaullist Weekends: The Films of Jean-Luc Godard and the Discontent of May '68

**56** St. Mary's Caries: A Comparative Study of Dental Caries Occurrence in the Burial Sites of St. Mary Spital and St. Mary Graces Cemeteries

# Inequity: A Cultural, Historical, and Present Account of Public School Funding Allocation within the State of Texas

By: Alicia Dorado

This research examines public school funding inequities and the ways in which judicial and legislative decisions have influenced the history, culture, and future of education within the state of Texas. This study consists of field visits to public schools and government centers within Bexar County, interviews with retired faculty members and U.S. Representative Joaquin Castro, database research, and a personal narrative of the findings. This study embodies the current state of public school inequity and illustrates how bills and cases such as “The Robin Hood Plan,” *San Antonio ISD v. Rodriguez*, and *Edgewood ISD v. Kirby* have had lasting effects on the issue. The portrait style of this research allows the author to use a blend of social science methodology and personal narrative. This hybrid creates an academic environment which illustrates the author’s point of view while opening a door for readers to form their own opinion. This study was conducted with the intention to observe funding allocation practices not only from an economic perspective, but through a lens that humanizes the effects of inequity found in Texas K-12 public schools.

Kindergarten-12th grade schooling is an integral part of everyone’s lives. For parents, it is a process of their child’s development through adolescence to adulthood. For students, it is a symbol of growth and higher achievement. School provides students with early social skills. Some of our most sacred memories were made inside classrooms and playgrounds. As we grew older, we began to find our niche. Some of us became athletes, some musically inclined, artistic, militaristic, or positively individualistic. School provided us the chance to find ourselves all while working to receive a noteworthy education. School molded us into who we are today and who we will become in the future. School,

Others may argue that educators are the issue, concerned that many are unhappy with their jobs, or that they aren’t qualified for their positions. Culturally, we view the education system on a micro-level scale. Student blame for failure is not often directed towards entire school districts or education boards, but rather individual schools. Many people, I have found, have forgotten about the role of state government in the system of education.

## Context/Background

The state of Texas has a history of instances where its educational practices and functions have been challenged. For the purposes of this study, I have observed and researched the ways in which Texas’ public school funding allocation has historically and currently affects its students. Due to my findings, I have created an emphasis on landmark legislative and judicial decisions which have particularly taken place within Bexar County. Using said decisions, I have observed and analyzed the lasting economic and cultural effects they have placed within the Texas education system.

Growing up as a military dependent, I have had my fair share of moving from one place to another. With each move came a new city, new friends, a change of scenery, but most importantly, a new school. As a younger child, I can distinctly remember the economic differences between elementary schools. I remember going to a school that provided us fancy name cards to put on our little desks, a place that threw pizza parties and reward banquets for those who practiced good behavior, had nicely trimmed hedges and lawns, and had after-school activities such as the fifth-grade chess club. I also remember going to a school that would send us home with letters to give to our parents asking for donations of wide-ruled paper, glue sticks, pencils, and crayons, because they couldn’t afford to provide supplies for us. Another one where our daily incentive to behave was a single piece of candy bought out-of-pocket by our schoolteacher; a school that had nothing but a former parking lot with added basketball hoops and lined four square courts to serve as a playground. As an elementary school student, I was exposed to economic disparities without consciously understanding why things were the way they were.

As an adult, I still don’t think I understand why things are the way they are. I haven’t been able to rationalize why it is that one district can provide its students with take-home tablets, while another struggles to provide basic textbook materials. I couldn’t help but feel that

these issues have been over-simplified and looked over by our culture. I have never been pleased with the idea of accepting these conditions for what they are. What I have found in my search for clarity has been a profound disconnect between students and the political institutions in which they are governed.

Through analysis, I discovered that landmark cases including *San Antonio ISD v. Rodriguez* and *Edgewood ISD v. Kirby*, and legislation like the “Robin Hood Plan,” have directly influenced the inherent structure, culture, and attitudes toward Texas public school education despite whether they are currently enacted or not. My discoveries have thus led me to question how much control students have over their academic success. Do our children’s school experiences lie in the hands of politicians or of their educators? Do parents or children have any control of the destiny of their educations? What will it take to establish equitable conditions for all public school education facilities within the state of Texas?

## Methodology

Sara Lawrence-Lightfoot and the methodology of portraiture heavily inspired the design of my research. Portraiture in its essential form captures the “complexity, dynamics, and subtlety of human experience and organizational life,” allowing one’s research to relay the author’s experience in a qualitative and ethnographic manner (Lawrence-Lightfoot Pg. XV).

**"Many people, I have found, have forgotten about the role of state government in the system of education."**

This unique blend of art and science creates an academic environment which illustrates the author’s point of view while simultaneously opening a door for readers to experience and formulate their own thoughts on the conducted research.

There are four key components to the method of portraiture. These components consist of extensive literature reviews in the field of study, interviews with subjects relevant to the topic, physical site visits, and a personal narrative of the overall experience of the research process. With each of these methods, the author artistically weaves his or her collected data into one qualitative, yet personal account. This design is intended

to engage the reader, creating a mode for accessible understanding.

My literature review research was taken from multiple fields of study. I quickly discovered the topic had been heavily addressed in political science and economics.

The interviews conducted were taken from one retired principal of a Texas public school, and from the United States Representative Joaquin Castro. I found the authoritative differences of these interviewees extremely

## "San Antonio ISD v. Rodriguez was one of the first United States Supreme Court cases to truly exemplify the spatial divide between property-rich and property-poor public schools."

beneficial in that it provided my study with points of views from both sides of the issue. The site visits, one of which was the area surrounding John F. Kennedy High School in San Antonio, relayed similar characteristics.

### Fighting for the Right to Education

In observing current literature, I noticed this topic had already been heavily discussed and studied from predominately economic viewpoints. Most of the articles I came across emphasized the state budget system and the difficulty its having with providing enough for public schools. This ultimately led me to the repetitive exposure of the "Robin Hood Plan"—a piece of legislation enacted by the state of Texas in 1993, otherwise officially titled Senate Bill 7. In its purest form, it was designed to keep wealthier public school districts from being able to completely trump poorer districts in regards to providing more expensive benefits. Essentially, any excess funding that exceeded the allotted cap of \$1.50 per \$100 of assessed property value was taken from the property-rich districts by the state government and distributed among property-poor school districts.

While on paper this legislation seemed to balance the inequities of funding distribution, many believed otherwise. Taken from "The Political Economy of Public School Finance," Dr. Linda M. Loubert, a professor of economics at Morgan State University, suggests that "to some extent, the situation appears to be a vicious circle—inequities in funding cause poor performance, driving property values lower, leading to a smaller tax base, and therefore, less funding" (pg. 1-2). Dr. Loubert,

as well as many other academic scholars, believes the dispute over the "Robin Hood Plan" is strictly a matter of the state overempowering its system of education. She again addressed the severity of this inequitable balance of power as she discussed how:

"The debates and lawsuits that accompanied this piece of legislation clearly illustrate the separation of political power in our nation. The legislative body may set the rules and laws for property taxes, but it is the court system that defines the constitutionality of those laws. This is the dance of powers that surrounded Senate Bill 7."

Though she was reluctant to address the favorable features of this bill, there were some who believed Texas had been heading in the right direction. Shelley Dahlberg, a former lawyer for the Texas Attorney General Office, claimed "districts and parents received the vast majority of what they requested" (Koppel). Christopher Diamond, a representative of a coalition of business groups in Texas also added that "money isn't the only issue and it's not the only solution" (Koppel). Article 7 of the Texas Constitution states, "...it shall be duty of the legislature of the state to establish and make suitable provision for the support and maintenance of an efficient system of public free schools." So, if money isn't the only issue or solution, what is, and what can be done about it?

In a review of the decision of *Edgewood ISD v. Kirby* titled "*The Edgewood Dilemma: An Epic Quest for Educational Equity*," J. Steven Farr and Mark Trachtenberg give background on increasing financial disparities between schools within Edgewood ISD and schools within the Alamo Heights area. In the review, they identify the differences between romanticism and reality in state legislation in discussion of how "the motivations for education equity includes lofty, romantic ideals of equality and excellence" (Farr and Trachtenberg). *Edgewood ISD v. Kirby* was but one of the first cases that truly identified how little the voices of the people meant when it came to dollar signs and politics. "Many Texans realized for the first time that years of discussion and proposals had actually done little to affect the inequity of the state's system," said Farr and Trachtenberg. The idea that the voices of those being directly overpowered by the actions of legislatures quickly became a trend in my research. It became even more apparent that the lower the class a person belonged to, the more silenced their voiced became.

### What You Can Afford, You Become

*San Antonio ISD v. Rodriguez* was one of the first United States Supreme Court cases to truly exemplify the spatial divide between property-rich and property-poor public schools. This case is historical because it observed how popular rhetoric and attitude toward education conflicted with true narratives of the state of education. In "A Right to Education?: *San Antonio v. Rodriguez* and the Need to Re-Examine the Discourse of Equality in Education," Shan Mukhtar observes these cultural conditions, stating that, "...in arguing that education is a fundamental right and wealth is a suspect identity category, the parents and children in *Rodriguez* were also implying a racialized pattern across these wealth disparities and educational disadvantages... The Supreme Court's decision... limited the importance of education as a 'fundamental right' or even a significant component of the fundamental rights guaranteed to all Americans."

The conditions of property-poor and property-wealthy school districts do not parallel. I heard about John F. Kennedy High School from a friend in San Antonio, a school in Edgewood ISD. I asked what areas were perceived as more "ghetto" or less-developed and he along with many of his friends, agreed JFK High School was perceived as a poorer school. I decided to visit the area to observe the aesthetics of the school.

I had many issues reaching out to Edgewood ISD administrators, and even those directly from JFK High School, to ask permission to do a site visit inside of the school. I was directed to many different offices, asked to email many different people, and was never granted any sort of comprehensive response. I had to resort to merely driving around the area and stopping by the school to observe its physical characteristics. To say the least, I was surprised with what I found.

The school did not look run down at all with its illuminated, modern signage and logos. However, I did notice a drastic difference between neighborhoods in the actual area. On one side of the campus were very nicely developed neighborhoods, noticeably middle to upper-middle class homes and cars. But to the other side, there were two complexes that appeared to be low income housing.

Upon further research on the school and the area, I found that Edgewood ISD played a major role in suing the state government regarding school financing (*Edgewood ISD v. Kirby*). They were once noted as one of the poorest school districts in the state due to the prices of local property. It seems this area is expanding,

although the school is still labeled as "property-poor."

This site visit justified the complexity of spatial divides within school districts. As cities in Texas begin to expand, and children from various socioeconomic backgrounds begin to immerse within same districts, how will Texas' current fund-allocation practices affect the quality of public school education? Most importantly, will Texas government allow previous legislation to continue to hold firm in its cultural attitude toward education, or will it evolve by enacting new methods of progression?

### Actions Speak Louder Than Words

My experience interviewing U.S. Representative Joaquin Castro of the 20th district was far less stressful and more enlightening than I had anticipated. When I arrived at his office in San Antonio, I looked around and found personality, rather than intimidation. On his bookshelf were pictures of him at schools, thank you notes with pink and purple stick figure drawings that were clearly the artwork of small children. There were multiple trophies and plaques, all with lettering too small for me to read from my seat. There was an apron with graffiti on it that read "Joaquin," and multiple

## "Property-poor schools still receive about \$1,000 less per student than property-rich schools."

photos of his family and mother, Rosie, whom I had researched to be a very influential Mexican-American activist in the 1970s. He also told me about his father, who had taught in Edgewood ISD for over 35 years.

Congressman Castro had attended Thomas Jefferson High School during a time when many education reforms were proposed within the area. He discussed how easy it was to tell which schools were well funded and which weren't, and emphasized the cultural and ethnic demographics of those differences. He discussed

the geographical inequities within our state and how the locations of where students live have a large impact on the schools and quality of their education. He believes people, specifically people of color or lower class, are "constrained by their resources" and forced to make do with what they have.

I asked him then what he thought were the main factors of student success in the class setting. He responded by stating he believes schools should provide the same resources across districts. He also said that



while student success heavily relies on monetary expenses, it also has to do with independent students' desire to learn, the devotion of well-rounded educators, and counselors. He reiterated how disturbing it is that property-poor schools still receive about \$1,000 less per student than property-rich schools.

I proceeded to ask Congressman Castro about court cases he believed would be relevant for the issue at hand. He recommended cases such as *San Antonio v. Rodriguez*, and *Edgewood ISD v. Kirby*, cases I had already found to be extremely helpful. I continued to ask him what hardships he faced during his time as a Texas representative, and also a U.S. representative. He was straight and to-the-point in saying Texas legislature never wanted to budge on education bills because they were not willing to spend money on education. Castro, a Democrat, believes that one of the main reasons why education reform has taken such a long time is because the Republican-led House and Senate are not allowing such actions to take place. He did, however, state that he was optimistic and it was "only a matter of time."

It was apparent Congressman Castro had his own reservations on the current status of Texas public school education, but it is even more noticeable that there is

**"In its purest form, our government is designed to ensure that the concerns of the public are addressed and acted upon."**

growing discontent among Texas educators. Although this is a common concern among school administrators, educators, parents, and students, I had a hard time finding current teachers willing to talk on the issue. It was interesting to find that even while promised confidentiality, many were uneasy about discussing daily problems they face as educators in their current school districts. Also noteworthy is that I was constantly redirected back and forth by the three school districts I reached out to in my request for interviews, ultimately making my search unsuccessful. Between the three districts, only one responded saying, "I will try to gather information for you as soon as possible and get back to you." I never heard back.

Luckily, I tracked down a retired assistant principal who, after thirty-seven years in education, became frustrated and disappointed with the direction of the Texas public school system. In contrast to the

Congressman's interview, this experience was much more casual. Discussing this issue with a person who had been both an educator and administrator allowed me to gain insight on the conditions of these public schools through the lenses of the individuals who run them.

He began by giving me background on his experience as both an educator and an administrator, describing how he went from a young track coach to an assistant principal over the course of thirty-seven years. I noticed passion in his voice. He spoke passionately about his experiences within education, including his own personal development. The mood of our discussion quickly shifted as I began asking questions about the current state of Texas public school education.

It became apparent that my interviewee's top concern involved the disparity between those in the classroom and those suggesting how the classroom should be run. Directed toward those in higher administrative positions, he angrily stated:

"...you've been out of the classroom for so long you have no inclination of what it's like to be a teacher in a classroom, teaching these kids what they need to learn. You're worried about how much it's gonna cost for this, how much it's gonna cost for that. Why aren't you worried about how much the education is gonna cost for our future leaders of America? Why are we not paying teachers a good enough salary when it's the biggest profession that we have? That's raising our kids to be the leaders of America?"

After a brief moment of silence, he went on to discuss what admirable traits of leadership looked like. First and foremost, he identified the importance of strong communication between leadership positions, stating "...that's what makes you a better leader, when you take advice, or you take comments from the people under you... The people who are in the know, the people who know what's going on in the classroom, those voices are not being heard."

Though Congressman Castro appeared optimistic about the future of education, the retired principal did not. He claimed his fear of the increasing greed and individualistic gain within Texas public schools is what ultimately led him to retirement. While I wish I were able to discuss these issues with current educators or administrators, perhaps the common unwillingness is telling in of itself. Throughout the process of my research I have found that issues regarding education are often viewed through lenses of politicians or people of

higher administrative positions. It has become apparent that those physically in the classroom are the ones who have very little say in the discussions among those at the top of the hierarchy.

## Conclusion

In its purest form, our government is designed to ensure that the concerns of the public are addressed and acted upon. In reality, this is not necessarily so. Like a loaded gun with a silencer, so is the ongoing issue of funding inequities within the state of Texas, yet it continues to take shots at the future of students' success in education. Students and parents complain about unacceptable school lunches, the lack of educational resources, and unavailability of extracurricular activities, yet few legislators are willing to discuss the inequitable allocation of funding between school districts. The actions of state legislatures are speaking much louder than the words of its constituents.

It has become clear to me that many focus on miniscule issues in relation to public schools rather than the larger picture. Until educators, administrators, parents, students, and communities muster up the courage to speak louder than the actions of government, the issue of funding inequities will thrive within the state of Texas. I hope Congressman Castro was right when he suggested that it is "only a matter of time" before state education policies are reformed.

## Works Cited

*The Art and Science of Portraiture*. San Francisco: Jossey-Bass, 1997. Print.

Campoy, Ana. "Funding Rules Test Schools: State Laws Keep some Districts in Oil-boom Areas from Reaping Full Benefits." *Wall Street Journal (Online)* Nov. 21, 2012. *ProQuest*. Web. 16 Sep. 2015.

Farr, J. Steven, and Mark Trachtenberg. "The Edgewood [Edgewood Independent School District V. Kirby, 777 S.W.2D 391 (Tex. 1989)] Drama: An Epic Quest For Education Equity." *Yale Law & Policy Review* 17.2 (1999): 607-727. *Legal Source*. Web. 19 Oct. 2015.

Fryar, Alisa Hicklin, and Daniel P. Hawes. "Competing Explanations for Minority Enrollments in Higher Education." *Journal of Public Administration Research and Theory* 22.1 (2012): 83. *ProQuest*. Web. 16 Sep. 2015.

Koppel, Nathan. "Texas School-Funding Trial Begins; Case Looks at Whether State is Spending enough on

Public Education." *Wall Street Journal (Online)* Jan 21, 2014. *ProQuest*. Web. 16 Sep. 2015.

Loubert, Linda M. "The Political Economy of Public School Finance." Order No. 9975917 The University of Texas at Dallas, 2000. Ann Arbor: *ProQuest*. Web. 16 Sep. 2015.

McCown, Scott, and (CPPP) Center for Public Policy Priorities. *Equity Analysis Of The Governor's Educational Excellence & Property Tax Relief Plan (April 2004)*. Testimony Before The Joint Select Committee On Public School Finance, 78th Texas State Legislature (April 19, 2004). n.p.: Center for Public Policy Priorities, 2004. *ERIC*. Web. 29 Oct. 2015.

Mukhtar, Shan. "A Right To Education?: San Antonio V. Rodriguez And The Need To Re-Examine The Discourse Of Equality In Education." *International Journal Of Interdisciplinary Social Sciences* 6.7 (2012): 89-98. *Academic Search Complete*. Web. 18 Oct. 2015.

Russo, Charles J. "Litigation And School Finance: A Cautionary Tale." *School Business Affairs* 76.8 (2010): 20-23. *ERIC*. Web. 29 Oct. 2015.

*Texas Constitution and Statutes* - Home. N.p., n.d. Web. 04 Dec. 2015.

# Scurvy: A synthetic approach to the disease and its influence in the Great Irish Potato Famine, 1845-1852

By: Courtney Pettrill

Scurvy is one of the most common nutritional diseases to have plagued humanity. As early as 1550 B.C., populations from diverse geographic regions began to recognize and document the disease. Afflicted individuals manifested illness signatures including fatigue, bleeding gums, and bone porosity due to the weakening of collagen in bone and blood vessels. With the absence of a single enzyme essential for synthesis, vitamin C cannot regulate the production of collagen, so the strength of these tissues is compromised. Ongoing research has documented ties between scurvy and historical famine episodes where access to a vitamin C-rich diet was limited. Most

notably is the Great Irish Potato Famine from 1845-1852, instigated by a fungal disease. Researchers Geber and Murphy investigated remains from the Kilkenny Union Workhouse cemetery, which was utilized by the Irish lower-class during the 1800s. Their research demonstrated that skeletal manifestations of scurvy were present in at least 52% of those studied. This paper draws on that research and other sources to present a paleopathological, historical, and biochemical overview of the Irish Potato Famine, in order to examine how nutritional deficiencies in vitamin C can lead to famine and scurvy in times of cultural and environmental stress.

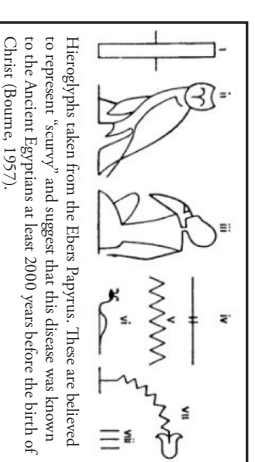
As one of the oldest and most common nutritional diseases, scurvy has continuously tormented humans throughout antiquity on both land and sea. The disease appeared to have no preference between populations and would afflict large groups of people at one time (Magiorkinis et al., 2010, p. 147). Early in the disease's history, physicians realized the cause of scurvy was a deficiency in vitamin C; however, scurvy victims would often go misdiagnosed due to the disease mimicking common conditions like blood diseases and gingivitis (Pimentel, 2003, p. 328). Thus, the patients' symptoms would be treated incorrectly until they succumbed to death. Famines and depleted food supplies called attention to the importance of their diet for prevention of the disfiguring disease. One of the most significant cases of scurvy, the Great Irish Potato Famine of 1845 to 1852, proved the strength scurvy has in eliminating a population (Geber and Murphy, 2012, p. 513). With research and paleopathological analysis, anthropologists like Dr. Geber and Dr. Murphy have provided a new perspective on the famine victims' tragic lives.

## Scurvy in Antiquity

Scurvy is an ancient disease that has plagued humans throughout history. This disease was first recorded in hieroglyphics on an Egyptian medical papyrus of herbal knowledge called the Ebers Papyrus in 1550 B.C. The Egyptian document provided both a diagnosis and treatment of the disease, which included a diet of vegetables (Magiorkinis et al., 2010, p. 147). However, the first formal description of scurvy is attributed to Hippocrates nearly 1,100 years after the Ebers Papyrus (Magiorkinis et al., 2010, p. 147). Hippocrates describes individuals afflicted with "foetid breath, lax gums, and haemorrhage from the nose; ulcers sometimes on their legs" (Lind, 1772, p. 303). Unfortunately, Hippocrates had difficulty treating his patients, resulting in scurvy "accompany[ing] the patient to his death" (Lind, 1772, p. 284).

The most well known example of scurvy affliction is of sailors and explorers, nicknamed "sea scurvy," towards the end of the Middle Ages (Mayberry, 2014). At the turn of the fifteenth century, Portuguese explorer Vasco da Gama took 140 men on the search for a route to the East Indies. Up to 80% of his men fell ill with "their feet and hands swelling, and their gums growing over their teeth" during the first six months at sea, leaving only seven or eight men fit to navigate each ship (Carpenter,

1988, p. 1). They landed on the southeastern coast of Africa and were approached by Moorish traders with oranges. Upon eating the fruit, most of the men recovered their health and only 30 had died (Carpenter, 1988, p. 2). It was not until the second incidence of this disease did da Gama and his men realize the oranges had a beneficial effect. Often found in vegetables and citrus fruits, vitamin



C or ascorbic acid is essential in the proper formation of the protein collagen. Collagen is an elongated fibrous protein found in connective tissues like organic bone and blood vessel matrices and gives these structures strength and rigidity (Mayes, 2014, p. 55). In the beginning of contracting scurvy, individuals are in a state of fatigue with discomfort and lethargy followed by weakening of the blood vessels. This failure of the blood vessel walls causes hemorrhages resulting in small red-purple spots on the skin, swollen and painful joints, and bleeding of the gums (Amelagos, 2014, p. 10). As the disease progresses, gums begin to rot, skin will become gangrenous, and the individual will develop high fevers. If left untreated, scurvy will be fatal, typically caused by rupturing of blood vessels in the brain and heart due to exertion (Mayberry, 2014). Afflicted individuals may regain their health even in the latest stages of the disease by being treated with a high vitamin C diet.

## Skeletal Manifestations

Scurvy may initiate an osseous response in the skeletal system if the individual goes untreated for an extended period of time. These skeletal manifestations are often seen in archaeological contexts of developing societies with poor nutrition (Mayes, 2014, p. 57). They are caused by either a change in the skeletal tissue due to the disease itself, or secondary effects from issues with the associated blood vessels. Bleeding gums, which is characteristic of scurvy, is due to localized hemorrhages and inflammation of the gums. Capillaries will rapidly swell in the affected region resulting in bony porosities

in the jaw. This changes the morphology of the alveolar margin and often leads to tooth loss (Mays, 2014, p. 55). Malformation is seen in most of the long bones due to an increase in osteoclastic activity. The osteoclasts degrade the trabecular bone in the medullary cavity producing porosities. With a hollow space within the weight-supporting bones, bone strength is compromised, and the individual experiences severe pain and grinding of the bones (Amelegos, 2014, p. 10).

Diagnosing scurvy can be difficult because the disease displays symptoms that are similar to a variety of other diseases (Primentel, 2003, p. 328). Also, scurvy can vary in severity, and all symptoms might not be present at the time of diagnosis. Bleeding gums from weakened blood vessels are often misattributed to ulcerative gingivitis due to bad hygiene, such as failing to brush one's teeth regularly. The failure of the blood vessel walls might be diagnosed as vasculitis, or blood vessel inflammation, which decreases blood flow. The breaks and decreased density of the long bones might be accredited to trauma (Primentel, 2003, p. 331). Sometimes these malformations might be diagnosed as a result of osteogenesis imperfecta and the designated treatment might not be useful (Patterson, 1990, p. 73). If these incorrect diagnoses are not refined in the early stages of scurvy the individual can develop a more severe case. Metabolic and efficient analysis is necessary for eliminating possible diseases when determining a diagnosis for scurvy.

### Biochemical Considerations

Unlike most animals, humans are unable to synthesize ascorbic acid naturally and must rely on nutritional supplements like fruits and vegetables for the necessary vitamin (Chatterjee, 2006, p. 36). Typically, vitamin C is produced within the liver by a multi-step reaction,



Skin spots/ash due to hemorrhages (Medicallook, 2016); inflammation and of the gums (Center for Disease Control, 2016); small fractures and hollow bone shafts (Noordin et al., 2012).

which is catalyzed by a variety of enzymes. Humans' inability to synthesize this biomolecule stems from the absence of the final enzyme for ascorbic acid's formation (Mayberry, 2014). The missing enzyme, L-gulonolactone oxidase, causes a negative feedback loop that blocks the entire synthesis process (Stone, 1966). While this vitamin deficiency is detrimental to the strength and function of the body, there is an evolutionary trade-off. Ascorbic acid is a chemically unstable biomolecule due to its tendency to become oxidized by transition metals (iron and copper) within the human body (Delanghe et al., 2007, p. 1397). Vitamin C is also extremely acidic which can be harmful to the body's overall basic environment. Therefore, scientists believe that the ability to synthesize vitamin C was either lost or never developed during human evolution, thus protecting the human body from a toxic chemical (National Center for Biotechnology Information, 2016).

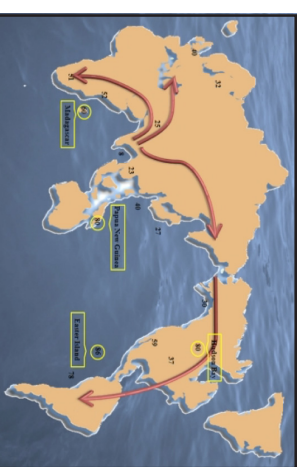
Past research has determined this deficiency is most significantly due to a combination of hereditary and nutritional factors. The absence of the L-gulonolactone oxidase enzyme is due to a genetic mutation, either a substitution or deletion, of the gene coding for the formation the synthesis' final enzyme (Stone, 1966). This mutation is found in all humans regardless of sex, age, or race.

Some individuals have an additional mutation of the gene coding for the protein haptoglobin (Hp). Haptoglobin is an antioxidant in the body that prevents damage of the red blood cells from oxidation (Delanghe et al., 2007, p. 1397). If Hp is absent, vitamin C can take on the role as antioxidant. The mutation causes a polymorphism with three phenotypes, which results from the expression of the two alleles Hp 1 and Hp 2. Those with the Hp 1 allele expression have a higher presence of haptoglobin in the body and are able to

survive on low vitamin C diets. However, individuals with the Hp 2 allele expression have low levels of haptoglobin (Delanghe et al., 2011, p. 1397). When those individuals have poor vitamin C diets, they lack both biomolecules to protect red blood cells from oxidation. Those with Hp 2 are more likely to develop vitamin C deficiency and in extreme cases, scurvy. In 2007, Delanghe and colleagues found the highest frequency of the Hp 2 allele in southeast Asia, which they assumed was a result of unequal crossing-over between Hp 1 alleles. The Hp 2 frequencies decrease further from southeast Asia suggesting that those populations who migrated long distances, especially by boat, had the advantage of the Hp 1 allele for their survival (Delanghe et al., 2007, p. 1398).

### Famine and the Kilkenny Union Workhouse

Scurvy is often attributed to dietary problems and a deficiency in fruits and vegetables that supply vitamin C. These issues occur most frequently when a population, or sometimes a whole country, experiences a devastating famine. In the past, humanity has endured multiple famines caused by drought, crop failures, natural disasters, food shortages, war, and many other factors. Some of the most significant modern famines include the Great Potato Famine of Ireland of 1845 to 1852, the Russian famine of 1921, and the Great Chinese Famine of 1958 to 1962. These disasters resulted in an excess mortality of 1, 9, and 33 million people respectively (Rosser, 2010). While it is likely that the individuals alive during the famines suffered from scurvy, only the Great Irish Potato Famine has multiple historic literary records of the disease.



Map of Hpl allele frequency. The numbers represent the Hpl allele frequency (as a percentage). The arrows represent the direction of human migration in pre-historical times. Four exceptions on the normal Hp allele distribution with extremely high Hp1 allele frequencies are found around the Hudson Bay, Easter Island, Madagascar, and Papua New Guinea (Delanghe et al., 2011).

The first wave of the potato famine hit Ireland late in the harvesting season of 1845. Potatoes were affected with a fungal disease, *Phytophthora infestans* (potato blight), which blackened the leaves of the plant and caused the tubers in the ground to rot (Clarkson and Crawford, 2001, p. 86; Crawford, 1988, p. 281). However, the timing of the potato blight was not as threatening since it arrived late in the harvest season and infected only forty percent of the potato crop (Schumann and D'Arcy, 2000). Those whose diets consisted almost exclusively of potatoes, especially the poorest third of the Irish population, struggled to survive. It was not until the following year when the potato blight returned significantly stronger and earlier in the harvest season that Ireland and Continental Europe began to panic (Ó Gráda, 2007, p. 7). Since potatoes were their primary source of food and did not store well, the Irish were the most notably impacted population in Europe. By 1852 Ireland had a twenty-five percent decline in overall population due to one million famine-associated deaths and emigration of famine victims to the Americas (Geber and Murphy, 2012, p. 513).

Despite the abundance of historical records on scurvy and the Great Irish Potato Famine, there were no case studies defining the paleopathological presence of scurvy in Britain prior to the work of Dr. Jonny Geber and Dr. Eileen Murphy, archaeologists at Queen's University in Northern Ireland (2012, p. 512). Geber and Murphy analyzed a minimum of 970 individuals from the Kilkenny Union Workhouse cemetery in Ireland (Geber and Murphy, 2012, p. 515). The workhouse was created in response to the Poor Law introduced in 1838 to address Ireland's chronic pauperism and provide "relief" for the idle lower class (Geber and Murphy, 2012, p. 514). During the Great Irish Potato Famine, the Kilkenny Workhouse inmate population swelled to 4,357 people desperate for food (Geber and Murphy, 2012, p. 514). With the rapid influx of inmates came an increase in mortality at the workhouse, and inmates were buried in the intramural burial ground. A minimum of sixty-three mass burial pits, with the dead buried in simple pine coffins, were discovered at the time of excavation (Geber and Murphy, 2012, p. 514). This collection provides great insight into the poorest of the lower class, who were unable to afford and properly feed themselves during the Great Irish Potato Famine in Kilkenny City.

To assess the remains for the population characteristics, Geber and Murphy used macroscopic



analysis of the bones for determining age, sex, and stature. The juveniles were identified primarily using dental development and eruption patterns from Broadbent et al. (1975), and the degree of epiphyseal fusion (Scheuer and Black, 2000). For adults, degenerative changes of the pubic symphysis and auricular surfaces of the pelvis were analyzed (Lovejoy et al., 1985; Brooks and Suchey, 1990). Living stature was estimated by measuring the left femur (if absent, the bone which gave the best correlation to the results given from the left femur) and using the regression equations of Trotter and Gleser (1952, 1958). A total of 545 of the 970 individuals died before the age of eighteen, and most of the adults were within the range of 26 to 45 years of age. The mean age-at death was estimated as 19 years. The sex ratio of the populations was approximately equal with a total of 200 females and 216 males. Estimated living stature in males was a mean height of 171 cm, and 158 cm for females, which is within the range of 19th-century individuals from Britain (Geber and Murphy, 2012 p. 517). These estimations correlate with the target demographic of the workhouse: young, able-bodied men, women, and families.

The diagnosis for scurvy was sectioned into three categories based on a combination of scorbutic, or scurvy associated, lesions observed. A definite category of diagnosis is most reliable and includes active porositites on the greater wings of the sphenoid, posterior surface of the maxillae, and medial surface of the mandibular ramii, which corresponds to scurvy affecting the mastication muscles and bones. Some porositites around the alveolar bone and palatine suggests hemorrhaging and gingivitis of the teeth and gums (Geber and Murphy, 2012 p. 515-516).

A category of probable diagnosis relies on at least two of the remaining lesions of scurvy being present. For juveniles, probable diagnoses consist of endocranial lesions of the frontal, porositites on the lesser wings of the sphenoid, orbital surface of the zygoma, infraorbital foramina, and supraspinous area of the scapula.

Periosteal new bone growth of the radii, ulnae, coxae, tibiae, fibulae and on the diaphysis, and particularly along the linea asperae, of the femora is also seen for probable scurvy diagnoses in adults (Geber and Murphy, 2012 p. 516).

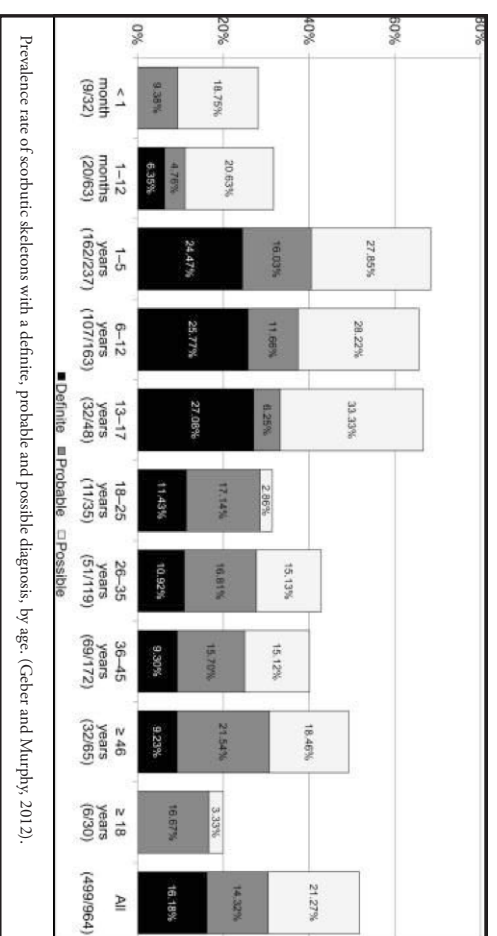
Non-specific lesions, such as active endocranial lesions of the cranial vault, further porosity of the sphenoid, and very fine proliferative new bone formation on the limbs, were defined as a possible diagnosis of scurvy when at least one scorbutic lesion was present (Geber and

Murphy, 2012 p. 516). This three-categorical diagnosis allowed Geber and Murphy to have a more consistent approach by considering all lesions present. Their analysis gives an overall prevalence of approximately 52%, with a definite 16% (N=156), probable 14% (N=138), and possible 21% (N=205) scurvy diagnosis. Geber and Murphy acknowledged the presence of lesions due to rickets (N=14 and 9) and tuberculosis (N=3 and 1) in juveniles and adults, respectively (2012, p. 517-518).

By comparing the presence of scorbutic lesions between age, sex, and stature groups, Geber and Murphy were able to better define how the disease presented itself and affected the Kilkenny Workhouse population. Children and adolescents showed the highest prevalence for the disease ranging from 66% to 68% afflicted. Older adults (>46 years of age) followed with 49% afflicted, and the lowest frequency was observed in neonates and infants (29% and 32%, respectively).

Scurvy also appeared to affect the mean age-at-death for young adults. Those diagnosed with scurvy died at a mean age of 17 years while the non-scorbutic skeletons lived until a mean age of 22 years. The mean age-at-death for older adults was not significant enough between groups for scurvy to be a determining factor. Men were more frequently diagnosed with scurvy than their female counterparts across all age groups with the highest difference among the older adults. This may be due to the biological variation and daily vitamin C requirements that differ between sexes. Physical stature also appears to be only statistically significant for males. The mean height for individuals diagnosed with scurvy was 2 cm taller than those without scurvy (Geber and Murphy, 2012, p. 520).

The results suggest scurvy was highly prevalent within the Kilkenny Union Workhouse population. The variation of the disease in different age groups can most likely be attributed to quantity of food provided in the daily ration. As seen in past research, the Kilkenny inmates probably had their relief food portions dependent on age, so adults were given the largest portions and the youngest children were given the least (O'Connor, 1995, p. 136). Consequently, those individuals of the optimal age to work (early to middle adults) received the most food. The Kilkenny Union Workhouse did not record a difference in ration sizes, like many other workhouses frequently did, but the men appeared to have suffered from scurvy more than women. Geber and Murphy speculate that the men received inadequate daily portions and suffered a greater



Prevalence rate of scorbutic skeletons with a definite, probable and possible diagnosis, by age. (Geber and Murphy, 2012).

loss of their necessary nutritional intake (2012, p. 520). Similar to Ivanovsky's study (1923, p. 331) of pre- and post-famine population of Ukraine in the 1920s, the taller individuals were more frequently afflicted since their bodies required a relatively higher proportion of nutrients compared to smaller individuals to subsist.

Of course, any researcher must acknowledge the paradoxes of studying human remains to reconstruct a society. The most significant point is discussing what is observed versus what was actually prevalent at the time the individuals lived. This is defined as Wood et al.'s Osteological Paradox, where many individuals who suffered from a disease died before the disease could produce a visible skeletal lesion (1992). Consequently, the archaeologist can only assume from what he or she observes on the skeletal collection. Those observations may be affected by taphonomic conditions previous to being excavated. For Geber and Murphy's skeletal collection, their analysis is only applicable for the lower class during the Great Irish Potato Famine and cannot provide information about groups from different classes or locations. The Kilkenny Union Workhouse burials do, however, provide a large collection of individuals that can provide a relatively representative sample of the inmate population between the years of 1845 to 1852.

## Looking Towards Future Research

Recent research has added on to the work established by Drs. Geber and Murphy in 2012. Dr. Julia Bradford has published several papers on using isotopic analysis

to examine diet and migration during the Great Irish Potato Famine. Bradford compared the remains from the Kilkenny workhouse burials to those of the Lukin Street cemetery in London. She found different nitrogen and carbon isotopes signatures between the two groups and within individuals buried in the Lukin Street cemetery suggesting that people had migrated to London during the famine (Beaumont et al., 2012, p. 92-93). Beaumont also observed a transition from C3 to C4 plants after the introduction of maize from America to the Irish diet by analyzing collagenous proteins in bone and tooth dentine (Beaumont 2013, Beaumont and Montgomery 2016). Geber continued his work with the Kilkenny Union Workhouse collection by examining the prevalence of enamel hypoplasia, Harris lines, and growth retardation in the child population. He found that Harris lines and signs of growth retardation are extremely prevalent, especially within the child and adolescent age range previously determined (Geber, 2014, p. 153). However, Geber realizes psychosocial stress relating to institutionalization in the workhouse may have helped cause these skeletal lesions along with the famine.

The research performed with the Kilkenny Union Workhouse collection has taken significant steps in curating archaeological samples with lesions correctly diagnosed as scurvy. Before Geber and Murphy's work, there were little to no archaeological records of the disease in human history, and most of the literature was from recent case studies. Their work has created an interest

- and necessity for further research of scurvy in human antiquity across the globe. The next step is for researchers to examine current collections using the methods outlined in Geber and Murphy (2012) to increase the known population of archeological scurvy victims. By doing so, the global perspective of the disease and its prevalence and mortality rates can be better defined. Presence of the disease in a variety of socioeconomic, ethnic, sex, and age groups would provide a diverse profile of scurvy. This new knowledge will offer more information about scurvy's history, influence on humans, and future in the modern world.
- ## References
- Arnoldagos CJ, Strak K, Werkema T, Turner BL. 2014. Analysis of nutritional disease in prehistory: the search for scurvy in antiquity and today. *International Journal of Paleopathology* 5:9–17.
- Baumont J. 2013. An isotopic and historical study of diet and migration during the great irish potato famine (1845–1852): High-resolution carbon and nitrogen isotope profiling of teeth to investigate migration and short-term dietary change at the union workhouse, kilkenny and lukin street, london. Ann Arbor: University of Bradford (United Kingdom).
- Baumont J, Montgomery J. 2016. The Great Irish Famine: Identifying Starvation in the Tissues of Victims Using Stable Isotope Analysis of Bone and Incremental Dentine Collagen. *PLoS ONE* 11(8): e0160065. doi:10.1371/journal.pone.0160065.
- Baumont J, Geber J, Powers N, Wilson A, Lee-Thorp J, Montgomery J. 2012. Victims and survivors: stable isotopes used to identify migrants from the great irish famine to 19th century london. *American Journal of Physical Anthropology* 150(1):87–98.
- Bourne GH. 1957. Vitamin C in the animal cell. Vienna (Austria): Springer-Verlag, Chapter 2, *Protoplasmatologia Cell Biology Monographs*. Vol 2; p.71-161.
- Broadbent BH Sr, Broadbent BH Jr, Golden WH. 1975. Bolton standards of dentofacial developmental growth. Saint Louis: CV Mosby Company.
- Brooks S, Suchey JM. 1990. Skeletal age determination based on the os pubis: a comparison of the Aschli-Nemeskei and Suchey-Brooks methods. *Human Evolution* 5:227–238.
- Carpenter KJ. 1988. The History of Scurvy and Vitamin C. New York: Cambridge University Press. 288 p.
- Center for Disease Control. 1970. Scurbutic gums [digital image]. Available from: <https://phil.cdc.gov/phil/details.asp?pid=3998> (accessed Nov 10, 2016).
- Charterjee IB, Kar NC, Ghosh NC, Guha BC. 2006. Aspects of ascorbic acid biosynthesis in animals. *Annals New York Academy of Sciences* 92(1):36–56.
- Clarkson L, Crawford M. 2001. Fear and Famine: Food and Nutrition in Ireland 1500–1920. Oxford: Oxford University Press. 336 p.
- Crawford EM. 1988. Scurvy in Ireland during the Great Famine. *Social History of Medicine* 1(3):281–300.
- Dando WA. 2012. Food and Famine in the 21st Century. Vol 1. Santa Barbara (CA): ABC-CLIO. 860 p.
- DeLanghe JR, De Buyzere ML, Speckkaert MM, Langlois MR. 2013. Genetic Aspects of Scurvy and the European Famine of 1845–1848. *Nutrients* 5(9):3582–3588.
- DeLanghe JR, Langlois MR, De Buyzere ML, Na N, Ouyang J, Speckkaert MM, Torck MA. 2011. Vitamin C deficiency: more than just a nutritional disorder. *Genes & Nutrition* 6(4):341–346.
- DeLanghe JR, Langlois MR, De Buyzere ML, Torck MA. 2007. Vitamin C deficiency and scurvy are not only a dietary problem but are codetermined by the hapoglobin polymorphism. *Clinical Chemistry* 53:1397–1400.
- Donnelly J. 2002. Great Irish Potato Famine. McPlesant (SC): The History Press. 160 p.
- Geber J. 2014. Skeletal manifestations of stress in child victims of the great irish famine (1845–1852): prevalence of enamel hypoplasia, Harris lines, and growth retardation. *American Journal of Physical Anthropology* 151(1):149–161.
- Geber J, Murphy E. 2012. Scurvy in the great irish famine: evidence of vitamin c deficiency from a mid-19th century skeletal population. *American Journal of Physical Anthropology* 148:512–524.
- Ivanovsky, A. 1923. Physical modifications of the population of russia under famine. *American Journal of Physical Anthropology* 6 (4):331–354.
- Lind J. 1772. A treatise on the scurvy: in three parts. 3rd ed. London: S. Crowder, D. Wilson and G. Nicholls, T. Cadell, T. Becker and Co. G. Pearch, and W. Woodfall. 559 p.
- Lovejoy CO, Meindl RS, Pryzbeck TR, Mensforth RP. 1985. Chronological metamorphosis of the auricular surface of the ilium: a new method for the determination of adult skeletal age at death. *American Journal of Physical Anthropology* 68:15–28.
- Magiorkinis E, Beloukas A, Diamantis A. 2010. Scurvy: Past, present and future. *European Journal of Internal Medicine* 22:147–152.
- Mayberry JA. 2014. Scurvy and Vitamin C (Class Paper). Retrieved from Harvard Law School.
- Mays S. 2014. The palaeopathology of scurvy in Europe. *International Journal of Paleopathology* 5:55–62.
- McDowell LR. 2013. Vitamin history, the early years. Sarasota (FL):First Edition Design. 290 p.
- Medical look. 2016. Scurvy [digital image]. Available from: <http://www.medicallook.com/>
- Nutritional supplement/Scurvy.html (accessed Nov. 10, 2016).
- National Center for Biotechnology Information [Internet]. Ascorbic Acid. PubChem Compound Database [cited 2016 Nov 17]. Available from: <https://pubchem.ncbi.nlm.nih.gov/compound/54670067> (accessed Nov. 15, 2016).
- Nooridin S, Baloch N, Salat MS, Memon AR, Ahmad T. 2012. Skeletal Manifestations of Scurvy: A Case Report from Dubai. *Case Reports in Orthopedics* 2012.
- O'Connor J. 1995. The workhouses of Ireland: the fate of Ireland's poor. Dublin: Anvil Books.
- Ó Gráda C. 2007. Making famine history. *Journal of Economic Literature*. 45(1):5–38.
- Patterson CR. 1990. Osteogenesis imperfecta and other bone disorders in the differential diagnosis of unexplained fractures. *Journal of the Royal Society of Medicine* 83:72–74.
- Pimentel L. 2003. Scurvy: historical review and current diagnostic approach. *American Journal of Emergency Medicine* 21(4):328–332.
- Roser M [Internet]. 2016. Famines. Our World In Data [cited 2016 Nov 18]. Available from: <https://ourworldindata.org/famines/>.
- Scheuer JL, Black S. 2000. Developmental juvenile osteology. London: Academic Press.
- Schumann GL, D'Arcy CJ [Internet]. 2000. Late blight of potato and tomato. The Plant Health Instructor [cited 2016 Nov 18]. Available from: <http://www.apsnet.org/edcenter/intrpp/lessons/fungi/Oomycetes/Pages/LateBlight.aspx>.
- Stone I. 1966. On the genetic etiology of scurvy. *Acta Geneticae Medicae et Gemellologiae* 15:345–350.
- Trotter M, Gleser GC. 1952. Estimation of stature from long bones of American Whites and Negroes. *American Journal of Physical Anthropology* 10:463–514.
- Trotter M, Gleser GC. 1958. A re-evaluation of estimation of stature based on measurements of stature taken during life and of long bones in death. *American Journal of Physical Anthropology* 16:79–123.
- Wood JW, Milner GR, Harpending HC, Weiss KM. 1992. The osteological paradox: problems of inferring health from skeletal samples. *Current Anthropology* 33:343–370.



# Protecting Justice or Depriving Rights? How Police Misconduct Legislation Disproportionately Benefits Law Enforcers

By: Haley Martin

"It used to be that a man could keep out of trouble if he behaved himself. Now he will only keep out of trouble if he behaves himself, the police behave themselves, and court behaves itself."

- Agona Appell<sup>18</sup>

**A**re police above the law? This common question is complicated by the regulations surrounding police misconduct lawsuits. In the past years, the issue of police misconduct has returned to the forefront of human rights protests and modern media. The misbehavior of individual officers has tarnished the reputation of our law enforcement and distressed our citizens. However, police officers are granted immunities from prosecution when alleged of misconduct. Despite high reported rates of police misconduct, these immunities result in only 25.8% of lawsuits against police departments and individual officers having adverse consequences for the officers involved.<sup>1</sup> So, unfortunately, police are indeed above the law. Officers are meant to protect the rights of citizens, but immunities allow officers to take these rights away. To study the magnitude of this injustice, I have examined a multitude of police misconduct cases, researched the statutes that guide the matter, and referenced a variety of academic sources. In this paper, I will present to you my findings. Upon exposure to the statistics and facts surrounding the matter, the need becomes apparent for law enforcement to be held to the same legal and

an officer if they can prove that the actions of an officer were unreasonable, infringed on the their constitutional rights, and gave injury or damages to the them.<sup>2</sup> The following section will explore how § 1983 is enforced in states, the contents of the statute, constitutional violations prosecutable under §1983, and the most common types of police misconduct.

## A. Equal Protection Clause

The Equal Protection Clause of the Fourteenth Amendment applies this federal statute to the states. This amendment secures civil liberties to United States citizens, protecting them against interference of the government. According to the text of the amendment, "no state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."<sup>3</sup> While this element of the Constitution was constructed to protect citizens, it does not give an individual the right to sue the government. So, §1983 was enacted as a vehicle under which individuals can pursue constitutional law claims.<sup>4</sup>

## B. Elements of Section 1983

The Equal Protection Clause of theSection 1983 of the Civil Rights Act of 1871 was established to outline the civil action that may be taken for deprivation of rights. This federal statute makes it illegal for anyone under the authority of the state, like police officers, to deprive a person of their rights that have been guaranteed by the Constitution or federal law. Although the statute is brief, the elements of §1983 have been expanded in an analysis by a qualified authority to reveal their intended purposes.

First, only "persons" may be prosecuted under the statute, meaning that the state cannot be sued, but an officer may be. Further, local governments and municipalities are considered "persons" and may be sued for damages and prospective relief, which proactively remedies future conduct but does nothing to account for events that have already occurred.<sup>4</sup> The Supreme Court held that no limit may exist on victims' damages if they can be proven; the purpose of the statute is to compensate victims of misconduct, however much that may be.

Second, officers must be acting under the color of the law. Acting under the color of the law means that officers have exercised the power given to them and made possible by their position under virtue of the state.

For example, officers have the power to arrest under the color of the law, but are committing a violation under § 1983 if they used excessive force or other misconducts during that arrest.<sup>4</sup>

To file a suit, the actions of the officer must be unreasonable. The explanation of § 1983 states that an act of an officer is not objectively reasonable if an arrest was made but a crime was not committed.<sup>5</sup> For instance, individuals may not be arrested or indicted for disorderly conduct if they did not disturb a considerable amount of people. Furthermore, if a reasonable officer would know that an action entailed excessive force, the acting officer is not immune from civil prosecution under § 1983. Unreasonableness is determined by judges rather than juries.<sup>3</sup>

Additionally, a causal link must exist between the actions of the defendant officer and the harm caused to

**"Citizens must be protected through stricter discipline and accountability for officers' actions."**

the victim. Likewise, in order to sue a local government, the harm to the individuals must be the result of a policy, ordinance, regulation, or position implemented by the government and adopted by officers.<sup>4</sup> Furthermore, a policy may be considered a constitutional violation, and thus not protected under § 1983, if supervisors fail to properly train employees to make the right decisions. A policy is also deemed unconstitutional if the unlawful actions of a subordinate have been approved by or are the result of an order or decision made by a "final policymaker".<sup>4</sup> In the following section, I will the case of—For example, in *Floyd v. The City of New York*,

plaintiffs brought a punitive class action suit against the city in order to deter officers from racial profiling ethnic minorities for stop and frisk searches—a practice which the plaintiffs had been victims of. They argued that the city had committed constitutional violations and thus were liable under §1983; the city's policy violated their Fourth Amendment rights to be free from unreasonable search and Fourteenth Amendment rights to equal protection of the law. The judge held that the city's practices depended on racial classifications and that these policies were so widespread that they had the force of law. Additionally, the judge held that city officials "demonstrated deliberate indifference to equal protection violations", and "ignored the need for better monitoring, training, and discipline." Finally, it was determined

that officers had violated the plaintiffs' Fourth and Fourteenth Amendment rights.<sup>6</sup>

### C. Constitutional Violations

The rights guaranteed to individuals are defined in the Constitution, not in § 1983. However, the method for pursuing action for right violations is included in § 1983. Analysis of misconduct cases shows that one of the most common constitutional provisions utilized is the Due Process Clause of the Fourteenth Amendment.<sup>5</sup> Due process requires that "a deprivation of life, liberty, or property be preceded by notice and opportunity for hearing appropriate to the nature of the case." Although this clause is an important basis of violations under § 1983, "the Supreme Court has held that the Due Process Clause was not intended to supplant tort law."<sup>4</sup>

One case that exemplifies the concept of due process as well as causal link is *Rogers v. City of Little Rock, Arkansas*.<sup>7</sup> The plaintiff attempted to sue a police officer, police chief, and the city of Little Rock after she was raped by a police officer. After she was unable to produce proof of insurance during a traffic stop, the plaintiff was followed home by a police officer that then entered her home. Factual findings showed that the officer then mentally coerced the plaintiff into non-consensual sex, using his power under the color of the law. Because of this, the plaintiff brought a due process violation suit under § 1983. The plaintiff also brought suit against the police chief because she believed that he was deliberately indifferent to the sexual misconduct of the officer in previous incidents. Further, she included the city in the suit because she alleged that her harm was the consequence of an unconstitutional policy. The Court of Appeals held that the plaintiff's claim was indeed a violation of her substantive due process rights to bodily integrity. She was awarded \$100,000 in damages. Regarding the police chief, the court found no evidence that he was deliberately indifferent to the actions of the officer, as would be required to uncover under § 1983. Two prior incidents of sexual misconduct alleged

## "False arrest, malicious prosecution, failure to intervene, and excessive force are the most common rights violations under § 1983."

against the officer were cited by the police chief, one of which led to a 10-day suspension. After investigating the

plaintiff's rape allegation, the chief decided to terminate the officer. In addition, the court also held that the woman failed to show how an unconstitutional city policy led to her assault. Earlier allegations of sexual misconduct were investigated by the city and did not show a pattern leading to the plaintiff's harm.

Analysis indicates that proving a claim of due process violation is uncommon. Negligent, random, and unauthorized conduct by an officer, does not always constitute a violation of due process under § 1983, even if intentional. An individual may be the victim of a procedural due process violation if the law was administered or enforced in an unconstitutional manner. In addition to procedural due process, an individual may be the victim of substantive due process violations. In a police misconduct case, in order to state a claim of substantive due process violation, a victim must demonstrate that an officer engaged in unconscionable conduct in a constitutional sense. A plaintiff may also state a claim of violation of one or more of the fundamental rights of the Bill of Rights.<sup>4</sup> For example, in the case against the City of Little Rock, the plaintiff alleged the following violations: Fourth Amendment unreasonable search, Fifth Amendment due process, Sixth Amendment right to counsel, Eighth Amendment right to a fair trial, and Fourteenth Amendment right to due process and equal protection of the law.<sup>7</sup> It was the duty of the court to decide which of these amendment violations were appropriate to the case.<sup>7</sup>

### D. Types of Misconduct

False arrest, malicious prosecution, failure to intervene, and excessive force are the most common rights violations under § 1983.<sup>2</sup> Yet, these misconducts still have elements of cause of action that must be met to be considered police misconduct in the court.

Plaintiffs who bring a claim of false arrest are asserting that their Fourth Amendment right against unreasonable seizure has been violated. This right was applied to states by the Fourteenth Amendment.<sup>3</sup> However, if the officer has probable cause, the arrest is reasonable, even if the officer relied on false information or a misdemeanor was not committed in their presence. In order to win a false arrest claim, the victim must prove that the officer had no probable cause to make the arrest.<sup>2</sup> For example, in *Chaparro v. Powell*, plaintiff Chaparro sued individual officers after he was allegedly arrested because the

attempted to photograph his car in an impound lot. He asserted that he had a right to photograph his car, so he committed no crime. In court, the plaintiff alleged that

defendant officers arrested him without probable cause, violating his right to be free from unreasonable seizure under the Fourth Amendment.<sup>8</sup> Due to procedural inadequacies on the part of the plaintiff, the claim was dismissed.

A number of terms must also be met for a malicious prosecution claim. To win this type of lawsuit, the victim must show that the defendant police officer commenced a criminal proceeding, that the criminal proceeding ended with no conviction, that there was no probable cause, and that the proceeding was brought with malice against the victim.<sup>2</sup> The term probable cause originates from the Fourth Amendment and means that an officer has a reasonable belief that a suspect has committed a crime considering the surrounding facts and information obtained prior to the arrest.<sup>5</sup> So, if the officer does not have sufficient reason to believe an individual is guilty, the officer may be sued in court.<sup>2</sup>

Claims of excessive force are the most public, and perhaps the most complicated. Excessive force is difficult to determine because it depends on the surrounding facts and circumstances. The research referenced on violations of § 1983 cites that the intention of the officer in these cases is irrelevant; if the amount of force was reasonable, it does not matter if the officer had ill intentions. Furthermore, if the amount of force was unreasonable, the intentions of the officer are irrelevant and he or she may lose the lawsuit.<sup>2</sup>

Another common violation of § 1983 is failure to intervene; though, the circumstances of this claim are much less complicated. Officers have a duty to protect individuals from constitutional violations by other officers. So, even if an officer did not partake in misconduct, if he or she witnessed another officer violating the rights of a citizen and failed to intervene, they may still be liable.<sup>2</sup>

Section 1983 is extensive and complicated, but the limitations, terms, and immunities of it are crucial to know going forward in a discussion of police misconduct.

## III. THE IMPEDIMENTS TO WINNING A LAWSUIT UNDER § 1983

Now that the basis for police misconduct and its regulations has been established, the subsequent section of findings will illustrate why § 1983 rarely grants victims the win that they may deserve. Plaintiffs' failures to favorably settle police misconduct lawsuits result from the immunities granted to officers by § 1983, and the excessive rules and litigation to affirm police misconduct,

the lack of attorneys willing to take cases, and a lack of objectivity in records.

### A. Qualified Immunity

The biggest impediment to settling police misconduct lawsuits is qualified immunity. Qualified Immunity "shields individual officials who are performing discretionary activities unless their conduct violates 'clearly established' statutory or constitutional rights of which a reasonable person would have known."<sup>9,10</sup> According to Ian D. Forsythe, this definition means that an officer is entitled to qualified immunity unless his or her action "is so obviously wrong, in the light of preexisting law, that only a plainly incompetent officer or one who was knowingly violating the law would have done such a thing."<sup>9,10</sup> Under § 1983, in order to prove that an action is unreasonable, a plaintiff may reference similar cases to show that an officer's behavior is unlawful and that another officer would know that it was unconstitutional.<sup>3</sup> Further, if public officials disagree on reasonableness, qualified immunity will be extended. Forsythe also explains that even if the rights of the plaintiff are clearly defined so that a reasonable officer would have known they were violating them, qualified or good faith immunity can still bar a police misconduct lawsuit if it was objectively reasonable for an officer to believe he was not violating an individual's rights. Additionally, if rights were not clearly established at the time of action and a reasonable officer may not know what entails a violation, immunity will be granted. Officers are also granted qualified immunity when they mistakenly assume probable cause or when they mistakenly commit a constitutional violation. Section 1983 extends protection to officials, but impedes justice for private victims of misconduct. In the case of *Pearson v. Callahan*,<sup>11</sup> the plaintiff brought § 1983 action against officers, alleging that they violated his Fourth Amendment rights by entering his home without a warrant. The plaintiff distributed drugs to an undercover informant whom he voluntarily admitted into his home. Afterwards, police officers entered his home and conducted a warrantless search. It is noted that some courts adopted a "consent-once-removed" doctrine that allows police to enter a home without a warrant if an undercover police officer was voluntarily admitted into the house and witnessed contraband in plain view. However, this is not a "consent-once-removed" case. No undercover officer entered the plaintiff's home, only an *informant*. The court referenced a similar case where it was held that



## "The demanding litigation process further diminishes plaintiffs' chances of winning police misconduct lawsuits, and likely discourages victims from filing one at all."

officers "could not reasonably have believed that their conduct was lawful because they knew that (1) they had no warrant; (2) respondent had not consented to their entry; and (3) his consent to the entry of an informant

could not reasonably be interpreted to extend to them." However, the court still granted the officers qualified immunity. First, they officers claimed that they would have reasonably believed that the doctrine extended to them. Furthermore, the court held that the officers should receive immunity because "although issue had not been decided in officers' circuit, "consent-once-removed" doctrine had been accepted by three Federal Courts of Appeals and two State Supreme Courts." So, the court held the officers' claim of reasonableness, and they were immune from prosecutions for their unintentional misconduct.

### B. Legal Process

It may also be concluded that the demanding litigation process further diminishes plaintiffs' chances of winning police misconduct lawsuits, and likely discourages victims from filing one at all. According to Forsythe in his analysis of § 1983, the burden of proving misconduct falls on the plaintiff and their attorney.<sup>4</sup> In order to overcome a defendant's qualified immunity, the plaintiff must cite specific facts of the incident in question and compare them with analogous cases. This obligation arose from the decision in a previous case that "public officials are not obligated to be creative or imaginative in drawing analogies from previously decided cases."<sup>4</sup> For instance, in order to show that a defendant officer's actions constitute unreasonable search, a plaintiff must cite a previous comparable case where the court found the officer's search to be unreasonable. Also, as discussed earlier in this paper, a plaintiff must find a causal link between a city or department policy and the harm caused to them by officers. Failure to completely meet these rigorous standards often results in lawsuits being lost by victims or dismissed.

The burden of proof is exemplified in the case of

*Igarra v. Toledo*.<sup>9</sup> The plaintiffs alleged violations of the Fourth, Fifth, and Fourteenth Amendments after police allegedly punched, kicked, and beat them with nightsticks in their home. The plaintiffs brought a substantive due process claim under the Fifth Amendment; that is, they asserted that their life, liberty, or property was violated by a government actor without due process.<sup>5</sup> However, this claim was dismissed because the Fifth Amendment only applies to the federal government, of which the defendants were not employed. The plaintiffs needed to assert their claim under the Fourteenth Amendment, which applies to state actors. The plaintiffs also alleged that the defendants deprived them of due process under the Fourteenth Amendment, but once again, their claim was dismissed. The court found that this due process claim was actually a claim of excessive force, which is contained in the Fourth Amendment, not the Fourteenth. Thus, the claim was dismissed.<sup>5</sup>

Unfortunately, procedural errors impeded the plaintiffs from attaining the outcome they may have deserved. Many cases have outcomes similar to this one, like *Chaparro v. Powell*. In the case, which I discussed previously, the plaintiff was arrested while taking photographs of his car. He attempted to sue the City of Chicago and the Chicago Police Department, claiming that his harm was a product of a custom of the city and department. He alleged that misconducts are custom and tolerated such as abuse of authority, use of excessive force, failure to discipline officers for misconduct, concealing police misconduct, failure to properly investigate or remedy police misconduct, failure to provide training to prevent misconduct, and arresting citizens who photograph cars inside city impound lots.<sup>6</sup> However, he was unable to adequately prove a causal link between each of these misconducts and his treatment by officers. Consequently, all of his claims against the city and department were dismissed.<sup>8</sup> The arduous structure of police misconduct litigation is no means for meeting a fair outcome. The burden put on victims of police misconduct bars them from meeting the justice that is owed to them.

### C. Lack of Attorneys

An unfortunate result of tort reform and plaintiffs' excessive responsibilities in filing a suit is a decrease in attorneys who are willing to work on police misconduct cases. The CATO Institute's National Police Misconduct Statistics and Reporting Project reported that between May 2009 and February 2010, only 33% of lawsuits

resulted in an award for the victim. Furthermore, of these cases, 74% were settled out of court and only 26% had a favorable judgment for the victim.<sup>10</sup> Additionally, because victims are likely already in debt from medical bills, loss of employment, and criminal charges that result from the police misconduct, attorneys can usually only take cases on a contingency basis, meaning that they only make money if they win the lawsuit.<sup>10</sup> Unfortunately for attorneys and victims, the risks of losing outweigh the potential rewards of winning, so many cases are not litigated at all.

### D. Accountability

Finally, victims of police misconduct often lose their cases because they are not capable of proving the wrongdoings of the defendants. If the incident is not caught on a police dash camera, judgment falls on the victim's word against the word of the police officer. Furthermore, in retaliation of misconduct reports made against them, police officers have been known to file accusations against victims to claim that plaintiffs' reports are actually false. This malicious practice is so common that in *Zanders v. Swanson*, Communities United Against Police Brutality took action in representation of their members who were indicted after officers challenged their claims of police brutality as false. In an attempt to counter police's intentional deceitfulness, the plaintiffs brought a § 1983 challenge against the state statute that makes it illegal to knowingly file a false report of police misconduct. This action seems odd, but it is essential to ensure that citizens would be able to take action against police without being indicted. The group asserted First Amendment and other constitutional violations. However, Zander's action was dismissed because the plaintiffs did not face a credible threat of prosecution or injury required by their First Amendment challenge; ironically, their suit was also dismissed because they could not prove that police's claims against them were actually false.<sup>11</sup>

Research of misconduct cases reveals that false accusations against plaintiffs are unfortunately common. Even in *Igarra v. Toledo*, discussed previously, the defendant officers submitted allegedly false accusations against the plaintiffs and arrested them.<sup>7</sup> The lack of objectivity in records combined with police's greater credibility in court denies citizens of their due process rights and adds to police's invulnerability in committing misconducts. By challenging plaintiffs' claims and making false accusations, officers abuse their power to shift judgment in their favor.

In conclusion, excessive immunities, litigation regulations, a lack of attorneys, and false accusations make it difficult to pursue or win a police misconduct lawsuit. Without action, victims of police wrongdoing will never attain the outcome that they should be granted.

## IV. OVERCOMING THE LIMITATIONS OF § 1983

While it may seem now that it is impossible to win a police misconduct lawsuit, research demonstrates how on rare and properly litigated occasions, victims receive the justice that they deserve. For example, a Brooklyn man was awarded \$16,600,000 in 2010 after a detective crushed his legs with a police cruiser, causing him to lose a leg. The man was running from the officer, who was attempting to arrest him for a misdemeanor.<sup>19</sup> The court decided that the detective acted with malice and intent while arresting the man.<sup>1</sup> While not all cases of misconduct are as extreme and costly as this one, all have a chance of awarding the plaintiff justly. After analyzing research and civil misconduct cases, one can deduce that reaching success in misconduct lawsuits relies on properly litigating, overcoming qualified immunity, reaching the qualifications of misconduct, and criminal prosecution.

*Allen v. Thompson* is a case that clearly demonstrates how terms of § 1983 may be met in order to overcome qualified immunity. Plaintiff Brewer was pulled over for excessively tinted windows. His body was searched by an officer who then entered his vehicle without permission three times. Brewer's girlfriend, Allen, arrived on the scene and stood two car lengths away and recorded the defendant officer with her cell phone. The officer then approached her, immediately demanded the cell phone, twisted her arm, threw her into a fence, and

**"Victims of police misconduct often lose their cases because they are not capable of proving the wrongdoings of the defendants."**

forcefully pulled the phone away when she refused. The defendant then proceeded to his vehicle, turned the audio recording device off, called his sergeant, and upon learning that his seizure of the cell phone was not allowed, he deleted the video. Plaintiff Allen asserted two Fourth Amendment violations, unlawful seizure of her cell phone and deletion of video, and excessive force.

The other plaintiff, Brewer, also asserted two claims for violations of his Fourth Amendment rights, unlawful seizure and detention and unreasonable search. The officer's entry into the vehicle was found to be a violation of the right to be free from unreasonable search of which a reasonable officer would be aware. Therefore, the officer was not entitled to qualified immunity. Further, seizure of Allen's phone was found to be unreasonable, as she did not pose a threat to officer safety. Deleting the video and turning the audio off in the police vehicle was also unreasonable. Thus, the officer did violate the Fourth Amendment illegal search and seizure claim. Additionally, the officer was not entitled to qualified immunity from excessive force and positively violated the Fourth Amendment right to be free from excessive force. The motion of the plaintiffs was partially granted, and partially denied due to fact issues.<sup>12</sup> Despite a lack of complete success, this case is a great illustration of how the legislation system can handle cases of misconduct with procedural justice.

While individual government actors are usually

**"While police misconduct can have a detrimental effect on victims, the civil process has an equally destructive impact on communities who fund the lawsuits and police departments that continue a pattern of misconduct due to a lack of repercussions and a suspicion towards police that complicates interactions."**

entitled to qualified immunity, local governments do not receive this benefit. Local governments have no immunity from damages for their constitutional violations and cannot use good faith as a defense. So, if a plaintiff can find a connection between the actions of officers and policies of a local police department, they may be able to successfully sue.<sup>4</sup>

Criminal action is the ideal solution for victims of police misconduct. These individuals are likely outraged by the justice that has been torn from them by the people who were supposed to protect it. Most victims want criminals to pay for what they have done. But, when officers are the criminals, who protects the victims? This unfortunate complication is likely why most file

civil action. The criminal justice system did not protect them, so they have to seek out justice in other sources.

## V. THE OPPOSITION OF CIVIL LAWSUITS AS A REMEDY TO POLICE MISCONDUCT

Section 1983 was implemented to secure justice for victims of police misconduct. Although upholding the intentions of this statute is difficult, when victims of misconduct are rewarded, the lawsuit is costly for taxpayers. Additionally, even those successful lawsuits fall short of deterring future misconduct in police departments. Furthermore, misconduct taints citizens' perceptions of law enforcement and makes interactions more tense and complicated. Opponents of police misconduct lawsuits cite these as disadvantages of the legal process.

Richard Emery and Ilann Margalit Maazel explain these drawbacks in their review of § 1983. They conclude that the fault of misconduct lawsuits is a result of indemnification, the compensation from the city to award victims of misconduct. While indemnification executes its purpose of rewarding the winning party and freeing officers from personal liability, it comes at the expense of the taxpayer. Taxpayers pay millions of dollars every year to fund this indemnification. In New York City between 1994 and 1996, seventy million dollars was funded by the taxpayers for the processes and settlement of police misconduct lawsuits.<sup>13</sup>

Emery and Maazel deduce that plaintiffs in misconduct cases bring suit because they are outraged, are seeking punishment for the officers who deprived their rights, and want to affect a systematic change that will deter misconduct. Unfortunately, plaintiffs have to settle for a monetary reward that affects no actual punishment for officers or systemic progress. The best resolution for appealing victims' outrage would be "criminal prosecution, better police training and counseling, and civil litigation that actually forces guilty police officers to pay the settlements and judgments against them."<sup>13</sup>

Another unfortunate ramification of police misconduct and subsequent lawsuits is a decrease in trust towards police that prevents officers from enforcing effectively. Media coverage of misconduct continuously tarnishes the reputation the police force for the actions committed by negligent or misbehaving officers. In his research of trust between police and communities, Andrew Goldsmith cited legitimacy as the determination of trust towards police. Legitimacy is the judgment by citizens of police's rightfulness in performing their jobs,

as well as the effectiveness of the parties who hire and supervise officers. According to Goldsmith, "when the public views police as legitimate, public co-operation with police in ways that assist effectiveness is more likely."<sup>14</sup> It is apparent that misconduct lawsuits develop a mistrust of police that prevents law from being easily upheld. This research suggests that distrust of police creates a cycle of misconduct because interactions with officers are tainted with suspicion that impedes cooperation by both parties.

While police misconduct can have a detrimental effect on victims, the civil process has an equally destructive impact on communities who fund the lawsuits and police departments that continue a pattern of misconduct due to a lack of repercussions and a suspicion towards police that complicates interactions. Civil lawsuits fall short of providing justice for victims, punishing officers, and deterring delinquency; other devices may be used, such as prosecution, training, and career or monetary punishment for officers that can close the gap between the current ineffective monetary compromise and the systematic change needed to deter further misconduct. Some of these alternative remedies to misconduct will be discussed in the subsequent section.

## VI. CREATING A CLIMATE OF BETTER BEHAVIOR AND ACCOUNTABILITY

Steps must be taken to decrease misconduct in the police force and increase officers' accountability for their actions. Many factors lead to the inefficiencies with law enforcement and misconduct lawsuits. Research on police reform suggests that improvements in hiring and training, discipline, § 1983 regulations, and objectivity in records could potentially create an environment absent of the misconduct that currently plagues our police departments and justice system.

### A. Hiring and Training

The first phase of creating a just system is to eliminate the causes of delinquency among police officers. Purging of these behaviors may be achieved through a stricter hiring basis and increased training within the police system. The hiring process will aid in the creation of the right police department that will maintain the ethical and legal conduct expected of them. Factors like applicants' past education, substance abuse, and misbehaviors must be weighed greater in the decision of whether they will be able to justly protect their communities.<sup>15</sup> These are all aspects that

can significantly impact officers' high-stakes decision making. It is critical that law enforcement is able to react to situations in a manner that reflects their integrity and the ethics expected by their communities. Furthermore, an evaluation of racial prejudices can reveal whether candidates are capable of performing their jobs without racial profiling, an infamous cause of further misconduct. John Tyler Clements stated that, "the most insidious form of racial bias is actually implicit and subconscious," but however is "capable of affecting conscious behavior." In fact, these subconscious biases are ones that officers rely on when making high-stakes judgments about an individual's criminality and violence. Disturbingly, many empirical studies have found that implicit racial biases influence police's decisions on whether they will use deadly force. To weed out these dangerous biases, an Implicit Association Test can be used to measure individual's implicit associations with certain demographics of people.<sup>16</sup> If these tests were implemented into the hiring process, much of the racially based misconduct would be eliminated. Choosing the right officers for a police force is of the utmost importance to establishing a network of correct and ethical behavior.

Effective training will help officers understand the expectations of the police department and teach them the correct on-the-job procedures. Inadequate training must no longer be an excuse for misconduct. Supervisors are liable for the behavior of their subordinates, so they must properly train their employees to perform the job expected of them. Furthermore, it may be concluded that increasing the emphasis on training will transform the objective reasonableness requirement. What was found reasonable by another officer should not be the standard when determining whether an action constitutes misconduct. All officers should be performing according to the regulations they were trained upon, so a pattern of misconduct should not be the benchmark of certain scenarios.

### B. Discipline

Discipline both by the police department and civil court proceedings is instrumental to deterring officers from committing acts of misconduct. In his review of police discipline, Darrel Stephens analyzed current discipline techniques and their limitations. Police executives have criticized the current departmental process of disciplining officers because it is both lengthy—taking months to years—and often ineffective in deterring negative behaviors.<sup>15</sup> According to



Stephens, there is a consensus among citizens, police officers, and unions that current discipline has fallen short of its objective of holding officers accountable for their actions and encouraging good behavior.<sup>15</sup> One disciplinary aspect that must be amended is the process of dealing with officers who repeatedly commit misconduct. Most officers refrain from misconduct; a study found that 2% of officers accounted for about 50% of misconduct complaints. It is obvious that this small group of delinquent officers must receive harsher and more effective punishment that will deter and eliminate their misbehavior. To determine punishment, many departments reference a discipline matrix that determines discipline based on the class of offense, and how many times and officer has committed an offense. One matrix shows repercussions for offenses

## "Taking action against the police should not be an impossible procedure."

scaling from class one to class seven. On the y-axis is the frequency that an officer has committed an offense, ranging one to three times. In the matrix, first time offenders receive nothing beyond a written reprimand until a class 5 offense is committed, at which time an officer must receive a 1-day suspension. Termination is not enforced until a first offender commits the highest class of offense. A third-time-offender is only terminated once he or she commits a class 5 offense.<sup>16</sup> From analyzing this chart, it may be deduced that those who once commit misconduct could refrain from becoming repeat offenders if their punishment was more harsh and effective for their individual transgressions.

### C. Decrease in Tort Reform

Furthermore, a decrease in requirements to civilly indict officers must be implemented in order to provide victims of misconduct the outcome that they deserve. As I have documented, officers receive wide immunity, which protects them from lawsuits. However, after researching, it may be concluded that these immunities are often unwarranted and disproportionately favor the officer over the victim. These immunities not only erode accountability, but they also uphold a mentality of invulnerability that affects the discretion of officers while performing their jobs. In order to reverse the tort reform that is § 1983, the window of requirements for qualified

immunity must be decreased. This adjustment would encourage good behavior on the job and successfully discipline officers who do not act to the expectations of the community, police department, or law.

### D. Accountability

Finally, accountability of officers can be significantly increased through the use of body cameras. Previously, I cited the case of *Zanders v. Watson* where a community organizations was attempting to reform the policies of their city by decriminalizing the act of filing false accusations against the police.<sup>17</sup> The reason for their motion was that they had seen a trend of police denying misconduct reports and indicting the victims that made them. This act of retaliation is also observable in the *Igartua v. Toledo* case, where the acting police officers denied the punching and kicking claims made by the plaintiffs.<sup>18</sup> Unfortunately, in instances like these, the truth is almost entirely determined by the officer's word against the plaintiffs. Because plaintiffs' accusations are nearly impossible to prove, little action may be taken against the defendants. However, the use of body cameras would entirely eliminate the discretion between

accounts. In *Eloyd v. New York*, the judge spoke on the need for body cameras and their potential in law enforcement. The judge discussed how currently, records of accounts are often inaccurate, since months may pass between the incident and deposition, and inherently one sided, as both plaintiffs' and defendants' accounts are colored by their own self-interest. So, arguably, the biggest advantage of implementing body cameras would be that they provide an objective record of an encounter for both officers' supervisors and the court. Additionally, as all exchanges would be recorded, body cameras would encourage lawfulness and respect for both police and civilians.<sup>19</sup> Furthermore, accusations that authorities are more likely to believe the police would be completely eliminated and therefore trust would be built towards law enforcement. The implementation of body cameras would be extremely beneficial to citizens who would be able to prove their claims and police who would be able to show that accusations of misconduct against them are false.

### VII. CONCLUSION

In this paper, I have discussed the components of police misconduct and Section 1983, the statute that guides law suits for these wrongdoings. I analyzed the shortcomings of the litigation process that impede favorable outcomes for victims, the biggest of which is qualified immunity. I also explored the strengths of

the misconduct litigation and the necessary process to achieving justice in the court. The negative consequences of police misconduct lawsuits were also explained. Finally, I proposed methods to lesson police misconduct and remedy the litigation process.

Taking action against the police should not be an impossible procedure. To procure the justice promised to citizens in the constitution, the enforcers of the law must be held accountable for their transgressions. When individuals' rights to liberty have been impeded, they must be procured by form of criminal or civil proceedings against the offenders. Section 1983 was created as a means to pursue action when citizens' rights have been deprived. However, the nature of civil proceedings hinders this section from serving its intended purpose. It is evident that a reform is crucial to deliver victims the justice that police officers are meant to protect. Without the proper systems to penalize delinquent officers, misconduct will never be eliminated and will thrive neglected in our criminal justice and legal systems.

District of Puerto Rico. 29 March 2010. 698 F. Supp.2d 274

<sup>15</sup>Packman, David. "The Truth About Police Misconduct Litigation." *Police/Misconduct.net*. CATO Institute. 25 Nov. 2016. 02 Dec. 2016. <<https://www.policemisconduct.net/the-truth-about-police-misconduct-litigation/>>.

<sup>16</sup>*Zanders v. Swanson*, United States Court of Appeals, Eight Circuit. 20 July 2009. 573 F.3d 591

<sup>17</sup>Allen v. Thompson. United States District Court, W.D. Kentucky. 9 April 2009. 14 F.Supp.3d 885

<sup>18</sup>Emery, Richard. "Why Civil Rights Lawsuits Do Not Deter Police Misconduct: The Conundrum Of Indemnification And A Proposed Solution." *Fordham Urban Law Journal* 28. (2000): 587. Web. 27 Nov. 2016. <<https://pdfs.semanticscholar.org/52ed/fb8e47951de3ab21a083dd596acaf513ec28.pdf>>

<sup>19</sup>Goldsmith, Andrew. "Police Reform And The Problem Of Trust." *Theoretical Criminology* 9.4 (2005): 443-470. *PsyNFO*. Web. 3 Dec. 2016.

<sup>15</sup>Stephens, Darrel W. Police Discipline: A Case For Change. New Perspectives in Policing: *Harvard Kennedy School Program in Criminal Justice Policy and Management*. Washington, DC: *National Institute of Justice*, [2011]. 2011. Web. 27 Nov. 2016. <<https://www.ncjrs.gov/pdffiles1/nij/234052.pdf>>

<sup>16</sup>Clemmons, JT. "BLIND INJUSTICE: THE SUPREME COURT IMPLICIT RACIAL BIAS, AND THE RACIAL DISPARITY Ln THE CRIMINAL JUSTICE SYSTEM." *American Criminal Law Review* 51.3 (n.d.): 689-713. *Social Sciences Citation Index*. Web. 27 Nov. 2016.

<sup>17</sup>Pearson v. Callahan. Supreme Court of the United States. 21 Jan. 2009. 172 L.Ed.2d 565

<sup>18</sup>Appell, A. (2013). The Success Genome Unraveled: Turning Men from Rot to Rock. Createspace.

<sup>19</sup>Riley, John. "Lawsuit: Long Beach Man Says Cop Ran Over Legs." *Newsday*. 16 Feb. 2010. <<http://www.newsday.com/long-island/nassau/lawsuit-long-beach-man-says-cops-ran-over-legs-1.1765040>>

<sup>32</sup> U.S.C.A. § 1983

<sup>4</sup>Forsythe, Ian D. "A GUIDE TO CIVIL RIGHTS LIABILITY UNDER 42 U.S.C. § 1983: AN OVERVIEW OF SUPREME COURT AND ELEVENTH CIRCUIT PRECEDENT." *Constitution Society*. Web. 03 Dec. 2016. <<http://www.constitution.org/brief/forsythe/42-1983.htm>>

<sup>5</sup>US Const. amend. IV, V, VI, VIII, XIV

<sup>6</sup>Joyld c. City of New York. United States District Court, S.D.N.Y. 12 Aug 2013. WL 4046209

<sup>7</sup>Rogers v. City of Little Rock. Ark. United States Court of Appeals, Eighth Circuit. 10 Aug 1998. 152 F.3d 790

<sup>8</sup>Chaparro v. Powell. United States District Court, N.D. Illinois, Eastern Division. 2 Jan. 2009. WL 68683

<sup>9</sup>Igartua v. Toledo. United States District Court,

# The Spectrum Of Inequality: Depictions Of Colorism In Make-Up Color Names

By: Hayden Prince

In order to address issues of racism, sexism, and colorism in society, we must evaluate where these prejudices exist within ourselves—especially in our language. Dr. JeffriAnne Wilder, of University of North Florida, asserts that the way we talk about skin color is important in understanding the larger social

implications about racism and colorism. Colorism, or the social preference of light skin tones, affects the lives of many People of Color, but most harshly affects Women of Color. To demonstrate how colorism is a gendered issue, it has been widely observed that the skin complexion of Women of Color influences opportunities in



Image 1. Taken from Kylie Jenner's make up company's Instagram account, Kylie Cosmetics, promoting her matte lipstick color varieties across different skin tones (Jenner 2016).

job markets, marriage markets, and even personal self-esteem. Using unobtrusive methods, this paper analyzes the names of make-up colors to detect colorism biases fostered by the cosmetic industry. Across a sample of over 300 foundation colors, there is evidence the light skin tone names portray more positive and feminine images than the names of medium and dark skin tones.



This paper offers a critical analysis of the cosmetic industry's use of color names for foundation.

Specifically, this is a study about the depictions of colorism portrayed through the names of foundation. In literary arts, the use of color in descriptions can reveal a deeper meaning to the reader through symbolism and imagery. For instance, white is not just the name of a color, but it also symbolizes purity, lightness, cleanliness, and virtue. In opposition, the color black is associated with death, sexuality, evil, and mystery. Analyzing data using from unobtrusive methods, this paper applies theories of colorism to discuss these ideas further, arguing that despite the wide array of existing skin tones, popular and commercial culture continue to generalize skin color within the dichotomy of white and black.

Studying colorism as it pertains to the beauty industry is important for a variety of reasons. First, colorism is observed in many cultures across the world, indicating a universal social bias that favors lighter skin tones over darker ones. Uncovering these biases where they exist is the first step to take action against colorism prejudices. Second, make-up is a heavily socialized part of women's lives. A 2012 study found that nearly half of the women participants started wearing make-up between the ages of 14 and 16, plus half of them reported feeling unattractive and self-conscious without make-up (The

**"Colorism is observed in many cultures across the world, indicating a universal social bias that favors lighter skin tones over darker ones. Uncovering these biases where they exist is the first step to take action against colorism prejudices."**

Renfrew Center Foundation, 2012). With make-up carrying such importance in women's lives, it is crucial to see if racial biases are perpetuated by the multi-billion dollar cosmetic industry, especially if women are active agents that contribute to profiting from their own oppression. Third, if distinctions are found between drugstore brands and designer brands, the issue quickly becomes intersectional, meaning that the types of products women are exposed to relates to the places they shop which is dictated by their socio-economic status.

The following section of this paper discusses current sociological and historical literature on colorism and

it's relation to Women of Color and to the cosmetic industry. From the analysis of 300 different foundation names from both drugstore and designer brands, this paper concludes that traditional feminine imagery is more closely related to light skin tones; dark skin tones carry associations that relate to stereotypes dating back to the Slavery-era; and medium shades exist in an exotified state between the other shades.

## LITERATURE REVIEW

Colorism, first coined by Alice Walker in 1964, is a social bias of skin tone related to racism and prejudice. Issues of colorism and general intolerance of blackness are pressing global matters. These social biases work in tandem with beauty industries that perpetuate and profit from fabricated ideals of beauty formed from racial differentiation. Current sociological literature on this topic discusses colorism and gender, impacts of colorism within communities of color, and colorism in the make-up industry. This paper will develop the dialogue by focusing on colorism and make-up color names.

## Colorism and Gender

Understanding the origins of colorism and the scope in which it affects society are the first steps to addressing skin color bias as an issue. There is speculation about the origins of when lightness became synonymous with superiority. For example, Phoenix (2012) argues that the association of lightness and beauty predates colonialism and existed in Elizabethan England. English aristocrats were known to flaunt their white skin as a sign of great wealth. Those who were poor were forced to work hard labor jobs outside, resulting in dirty or tanned skin. As a status symbol, the wealthy aristocrats would lighten their skin to further show how they did not need to work. Even in classical paintings, the truest depiction of European beauty, women are painted with fair or "shell pink" skin tones while men were traditionally represented in earthier tones (Hill 2002). It is widely accepted that European colonization and the institutionalization of slavery further established a social preference for lighter skin tones. Hill (2002) explains that an ideology of whiteness was used to justify slavery, and created a dichotomous way of thinking about race. Hill articulates, "whiteness became identified with all that is civilized, virtuous, and beautiful; blackness, in opposition, which all that is lowly, sinful, and ugly" (2002:79). In particular, Hill argues that slavery is at the root of colorism.

To understand how colorism is a gendered issue, it is important to discuss how slavery formed a social

disease towards dark women. As slaves, women were expected to do as much work as their male counterparts. The images of dark, strong, and muscular female slaves only advanced the starkly different images of white femininity (Hill 2002). Further, because slaves were seen as property, slave owners often bought Black Women as concubines—women who most resembled European features were bought and sold most often for this particular purpose (Phoenix 2014). Light skin slaves were usually products of rape from white slave masters, and children of these relations traditionally were treated better than other non-mixed slaves. It is documented that light skin slaves were given jobs that were not as labor intensive and generally had closer relationships with the masters (Phoenix 2014).

Evidence of the Black Community internalizing colorism is detected in the early 1900s (Wildet, 2008). Prestigious black social clubs adopted the "brown paper bag test" where those who were darker than a brown bag were denied entrance or membership into certain social circles. This practice ultimately established a racial hierarchy even within Black communities (Hill 2002; Wildet 2008). Social distinctions such as mulattos, quadroons, and octoroons, marked some of the racial hierarchies of the time and up until the 1920s. These social distinctions of multiracial people vanished by the 1930s, when the US Census Bureau and other legal systems incorporated the "One Drop Rule", declaring anyone with African heritage to be classified as black (Hochschild and Weaver 2007). Having biracial and multiracial people be socially and legally classified as "black" was consequential to the formation of the black identity.

## Impacts of Colorism Within the Community of Color

Skin color bias goes far beyond an individual's perception and everyday encounters. Large social institutions grant different rewards and opportunities to African Americans (and other people of color) based on how closely their appearances resemble Eurocentric standards (Hill 2002). Vast amount of research documents that light skin blacks have a significant edge over darker skin individuals within the same racial category. Privileges associated with lighter skin tones include access to jobs, education, personal self-esteem, socioeconomic status, and marriage markets are all significantly better compared to their dark skin counterparts (O'Brien and Berry 2008; Hochschild and Weaver 2007; Glenn 2008).

In *Black Feminist Thought*, Patricia Hill Collins (2000) critiques Americans' binary way of thinking about race. Collins asserts that white and Black women "represent two opposing poles, with Latinas, Asian-American women, and Native American women jockeying for positions in between" (89). This perspective coincides with other studies that argue how colorism exists as a three-tiered structure or as a continuum, rather than just a binary black/white construct. This insight is critical to this study because the color names will be analyzed according the spectrum of shades and not limited to the dark/light dichotomy. Moreover, how we discuss skin colors influences attitudes and beliefs towards people of any given complexion. JefferAnne Wildet (2010) conducted an analysis of forty self-identified "black" color names that range from light to dark and the perceived meanings associated with those names. Among African American females, the darker the color name, the more negative the meaning, and the lighter the skin color name, the more beautiful it was perceived. In addition, Wildet (2010) found that neutral or medium tones were generally most favorable for dark women to identify themselves as and are least scrutinized by fellow Black women.

Wildet's study is pivotal to this analysis because she asserts that the language in which we describe skin tone carries heavy significance in the Black community and beyond. Evidently, the Black community has cultivated a culture rooted in colorism. It is common to describe light skin women being as "yellow" or "red" which carries meanings that reflect more positively than names like "tan baby," "darker" or "blacky", which are often used to describe dark skin women. Even "brown" is a more desirable identifier than "black." Further, being called "red" or "redbone" is historically linked to the mixing of Native American or white heritages, which is generally more liked, agreeable, and carries an overall positive association within the Black community. In a focus group consisting of only Black women, "red" women were described as trustworthy, amiable, non-threatening, comfortable, and beautiful (Wildet 2010). More of her findings also indicate an interesting way in which we describe all skin colors. Several terms in all three categories, (light, medium, and dark,) had references to food. Wildet asserts, "From vanilla for light skin to caramel for medium tones and chocolate for dark skin, these food terms may point to the hyper-sexualized and erotic images of all Black women, regardless of skin tone" (2010:191).

It is undisputed that colorism is a powerful force in

both the majority American culture as well as within the minority African American culture. Many scholars, like Wilder (2010) and Hill (2002), made it clear that Black women are fully aware of the skin color bias within the

## "In order to be perceived as feminine and beautiful it is popular for dark Women of Color to emulate whiteness—often through the use of skin bleaches, hair dyes, cosmetics surgeries, and straightening combs"

African American community. As a result, an important question in the matter is how Black women cope in a world that systemically devalues them.

In order to be perceived as feminine and beautiful it is popular for dark Women of Color to emulate whiteness—often through the use of skin bleaches, hair dyes, cosmetics surgeries, and straightening combs (Hill, 2002). The beauty industry has manufactured a market specifically for skin bleaches, and it is projected to reach to \$23 Billion by the year 2020 (Global Industry Analytics, Inc 2015). This industry is problematic because it encourages Women of Color to attain a beauty ideal that was fabricated in spite of their most natural appearance. As Evelyn Nakano Glenn (2008) articulated,

*"the yearning for lightness is evident in the widespread and growing use of skin bleaching around the globe can rightfully be seen as the legacy of colonialism, the manifestation of 'false consciousness,' and the internalization of 'white is right' values by people of color, especially women" (298).*

Companies like Fair & Lovely capitalized on and perpetuate the idea that fair skin color is more beautiful than black and brown skin. Fair & Lovely uses rhetoric like "with regular daily use, you will be able to unveil your natural radiant fairness in just 6 weeks" (Glenn 2008). Additionally, skin bleaches are under heavy criticism from the FDA because of their carcinogenic ingredients, specifically mercury and hydroquinone, that cause damage to the adrenal glands, kidneys, liver, and cause skin cancer (Draclos 2007; Global Industry Analytics, Inc 2015; Hunter 2011). That is to say, in addition to being held to unattainable images of white beauty, Women of Color are also seriously harming

themselves in the process. To address this public health issue, popular solutions call for heavier regulation of skin bleaches and promoting health campaigns that endorse women's personal acceptance of their skin color.

Mire (2005) argued these solutions do not address the larger social systems in place that promote hegemonic standards of beauty. Focusing on the individual's attitudes and perceptions of skin color is like putting a band-aid on a bullet wound—it merely covers up the problem and does little to heal deeply embedded wounds of colorism, racism, and sexism.

### Colorism in the Make-Up Industry

In addition to selling skin bleach products, the cosmetic industry also upholds the societal preference of lighter skin by staunchly marketing to light and medium skin tones with exclusively white female models and through availability of products. Mainstream cosmetic companies are notorious for hiring predominantly white models to advertise their products. To exemplify this phenomenon, it was only twenty-four years ago when CoverGirl Cosmetics signed their first Black model, Lana Ogilvie, to advertise their traditional natural "All-American" brand (Anon., 2011). Companies like L'oreal, Garnier, and Dove, as well as some women's magazines have run advertisements that digitally altered the complexions of their Black models and celebrities to look much lighter (Phoenix 2014; Wischover, 2011). In general, most mainstream beauty products are made for white consumers—this is evident by the availability of certain foundation colors, the use of predominantly white models to advertise products, and the types of products offered. In order to traverse through this white-washed cosmetic market, some Black women are making their own tools to help them shop. Instagrammer, Ofunne Amaka, dedicated her account to sampling and "swatching" different make-up products for Black consumers to evaluate how certain products will look on their skin (Harrison, 2016). Often, eyeshadow palettes, lipsticks, and other highly pigmented make-up have completely different color effects depending on the skin color of the wearer (See image 1 for an example). Some companies like ColoPop, Anastasia Beverly Hill, and Kylie Cosmetics have taken notice of this dilemma and have adopted "arm swatch" features to their websites. Some say this is a step in the right direction, but these companies still face criticism for choosing models that are not dark enough. Regardless of this progress, there is still a far way to go for mainstream beauty to be as diverse and inclusive as the markets they reach. These

examples show how prevalent colorism and racism can be in this industry—the analysis of make-up color names will uncover how biases can be found in every aspect of this industry.

There is no denying that colorism exists within this multibillion dollar make-up industry. This industry profits from the insecurities of women and, despite marketing to diverse populations, sells only one image of Eurocentric beauty. It is evident that Women of Color have internalized these white beauty ideals that are perpetuated by the make-up industry, despite the standards being traced back to slavery and colonization. Women of Color know that their complexions hold heavy importance in their life, more so than Men of Color. Make-up companies are bias towards white audiences through the use of white models, types of products, and limited availability of diverse shades. Findings from Wilder (2010) are valuable for this study, as I will also be analyzing skin color names and their social implications. This study fills a gap in the literature that investigates other ways skin color bias can exist within the make-up industry.

### METHODS

The best way to conduct this study is through an unobtrusive content analysis method. Trochim (2006) distinguished unobtrusive methods as measures that don't require the researcher to intrude in the research context—meaning that the researcher does not participate in the construction of the data to be analyzed. The data collected are the names of colors for only foundation products. The distinction in make-up products is important because foundation is specifically intended to resemble skin color in order to enhance facial complexion. My search included cosmetic make-up lines in both designer and drugstore brands. The distinction to separate drugstore from designer make up is by the price of the make-up—if the price of one product costs more than \$25, I indicated the brand as designer. Additionally, brands found in local grocery and drugstores (such as L'oreal, Maybelline, CoverGirl, and Revlon) will be labeled as drugstore brands. I obtained my data by visiting the local San Marcos Ulta Beauty store, local CVS/Walgreens outlets, and online retailers to gather a sample of twenty make-up brands. I annotated the color names according to brand then categorized each color into three shades—Light, Medium, and Dark. After the names were categorized, the color names were critically analyzed. Specifically, I looked how names were displayed, repetition of names,

where repeated names fell in the gradient of color, and symbolism behind repeated color names. Foundation is always displayed from the lightest to darkest color, therefore, my findings are formatted from Light to Medium to Dark within each theme.

### FINDINGS

After analyzing over 300 color names, there are three prominent ways in which companies show colorism biases. First, make-up companies use adjectives in their color names to portray different meanings amongst the tones. Secondly, companies rely heavily on foods as descriptions unevenly amongst skin tones. Lastly, companies use make-up color names to objectify women differently across skin tones. Each theme portrays the most favorable depiction of light skin tones, which ultimately affirms that colorism exists in this context.

#### Use of Adjectives in Color Names to Portray Differing Meanings Amongst Tones

A common practice make-up companies use is pairing an adjective with a color to better describe or name the color—the problem is that some of the adjectives companies employed are not typical words used to describe colors. Words like "light" and "dark," are adjectives that are traditionally used to accurately depict a color (i.e. light blue and dark blue are two very different shades of the color blue due to the preceding adjectives). What is problematic is that companies are using adjectives that have virtually no meaning in the context of color. My findings show that the non-color adjectives used to describe skin tones roughly follows this spectrum: fair, pale, cool, light, fresh, classic, nude,

**"To exclusively represent light skin tones as "natural," "nude," and "classic" very plainly insists that dark skin tones are unnatural and not traditionally beautiful."**

natural, creamy, medium, warm, tan, rich, spiced, and lastly, deep. These adjectives, rather than describing color, are describing the type of woman that wears the make-up color. These words are problematic because the meanings that are associated with these non-color adjectives are not equally revered across the spectrum of skin colors—especially considering how the spectrum uses almost direct antonyms from one end to other.

These unequal and bias adjectives reveal the engrained racism in the cosmetics industry and beyond. This type of racism isn't the result of an ill-natured, uneducated, prejudiced person, but these names are a result of ingrained system of racism in our society. Critical race theorists, Richard Delgado and Jean Stefancic (2012), explain that "racism is ordinary...[It is] the way society does business, the common, everyday experience of people of color." (9) These color names are just another example of how racism is so second-nature to Americans that we fail to recognize it until it is analyzed critically.

As seen in the light skin tone shades, common adjectives found in the color names are "classic," "natural," "soft," "fresh," "cool," and "light." As supported in the literature, these adjectives are words that are typically associated with traditional white femininity in juxtaposition to black slave women. Additionally, the words "nude" and "natural" were both used as colors and color adjectives (Maybelline's "Warm Nude" versus "Nude Beige" and NYX Cosmetics' "Creamy Natural" versus Covergirl's "Natural Beige"). What is central to this theme is that adjectives like "nude" and "natural" are most often assigned to light or medium skin tone shades, never dark skin tones. "Nude" and "natural" are particularly poignant names because they do not portray a actual colors—the definitions are literally to be naked and coming from nature. Moreover, the overwhelming use of "classic" in light skin tone color names indicate that light tones have either been around the make-up industry longer or very literally represent the classic image of beauty. To exclusively represent light skin tones as "natural," "nude," and "classic" very plainly insists that dark skin tones are unnatural and not traditionally beautiful. The prominent othering of dark skin tones in this context mirrors how we see light skin and dark skin in our society.

For medium skin tone shades, the use of meaningless, non-color adjectives in the color names are less problematic but still troubling. The primary adjectives found in medium tone color names are "warm," "tan," "golden," and "medium." Generally, The use of these words are only used as comparative terms to slightly darken the light skin color names. For instance, "tan beige" and "golden beige" are the two most reoccurring color names for medium colors—beige being an already established light skin color. The addition of these other adjectives reinforces the idea that white/light skin tones are the primary skin tone in the mainstream cosmetic industry. The medium shades seem to only exist in a realm that was more similar to light tones than to dark

tones. Supported by the work of Patricia Hill Collins (2000), women of medium skin tones exist in a world negotiated between white and Black women. This is yet another example of the ways the make-up industry describes skin tone colors echo how the grander society favors lighter complexions.

For dark skin tones, the meaningless adjectives used to describe light skin tones are not shared for dark skin tones. The most commonly used adjectives for dark skin color names are "spiced" and "deep." Again, the lack of similar adjectives found in the light and medium skin tone names reflects the societal belief that these colors are not as "natural" or "classic" when it comes to women's beauty. In fact, these two words are some of the only adjectives for dark color names. Further, "deep" and "spiced" couldn't be any more opposite than "light" and "creamy"—which are previously noted light skin tone adjectives. As supported by the literature, lightness and fairness are the pillars of white feminine beauty—mostly established in opposition to the imagery of black female slaves (Hill 2002). These make-up color names affirm proof of colorism in the make-up industry by reiterating that dark skin tones are the antithesis of light skin tones, therefore are the antithesis of beauty.

### Exoticification of Skin via Food Comparisons

Although all shades have their examples of using foods as skin color descriptions, this particular caveat most highlights skin color bias in the make-up industry. Right away, food based color names were not common for light skin colors. The few food based colors consist of foods like "peach," "honey," and "champagne." Coincidentally, these foods represent sweet, simple, and ordinary flavors. Additionally, these foods are conventionally found domestically in the Western world. The associations with the foods and flavors do not present themselves as exotic or erotic. Although there is an element of objectification that is present, these names are far less dehumanizing and sexualizing compared to the other shades.

As the spectrum of skin color tones darkens, the use of food names increases in frequency. Amongst the medium shades, "honey," (again) "olive," "cashew," and "caramel" are some of the most common color names depicting food. There is an element of exoticification or sexualization when it comes to these names. Women who fall into these skin tones are often sexualized for being exotic (i.e. not white) but not too different to be presented as inherently othered.

The use of food as description is most prevalent in the color names of dark skin tones. It is all too common

to see color names such as "cocoa," "tonfice," "ginger," "expresso," "cappuccino," "chestnut" and "mocha." In fact, there are very few examples of dark skin tone color names that are not based on food. These color names are not the typically derogative names that Wilder (2008) analyzed ("dirty," "redbone," "tar baby" etc.); however, the reliance of food for description presents a problematic situation. These foods and drinks present an array of rich, sweet, savory, bitter, exotic, and complex flavors. These flavors allude to a particular association or attitude about the group that is portrayed onto them. If this wasn't the case, then there would've been As previously stated, each skin tone group has examples of being compared to food—but dark women face this issue to a much higher degree. The overwhelming reduction of dark woman's skin tone down to a type of food or drink for consumption is clear fetishization of these women. Again, the lack of regard of how make-up companies describe dark skin is analogous to how the grander Global society feels about dark women. These color names continue to perpetuate and profit from the long standing stereotypes of dark Black women being hyper sexualized objects made for consumption.

### Further Objectification of Skin Tones

Comparatively, each color group faces objectification but to varying degrees—similar to the discussion to the use of food as color names. Feminist theorists typically defines sexual objectification as when a person is viewed as a mere body that exists for the pleasure and use of others (Saguy, Quinn, Dovidio, Pratto 2010). Objectification is observed through interpersonal interactions with gazes and comments aimed at women's bodies and frequently seen through the portrayals of women in the media (Saguy et al. 2010). Objectification is an intersectional issue because all women may be objectified but not all are objectified to the same degree or in the same ways. The different ways society objectifies white women versus Women of Color can be observed through make-up color names.

The color names "ivory" and "porcelain" contribute to the objectification of white women. Both color names represent materials that have great value and used in expensive products such as porcelain dolls, fine china, and ivory jewelry. The way these products are treated (with care, protection and great value) is reminiscent to the way white women are treated in society. This observation supports the Hill's (2002) assertion about the white femininity being delicate, fragile, and in need of protection (mostly from Black men).

Notwithstanding the pattern of colorism, medium shades continue to exist between the realms of lightness and darkness. Many of the color names in this category are not dependent on objects. Medium color names are mostly various ways to describe beige or plainly contains the word "medium." The primary objects (other than food) the are used to portray color are "sand" and "gold" Again, these images give way to luxurious images such as hot tropical beaches and expensive jewelry. The portrayal of these color names lend themselves to the exoticification of these skin tones.

Continuing to dark skin tones, the use of food as description is the most prominent form of objectification of Women of Color. Outside of food and drinks, other names that also objectify dark women are "mahogany" and "amber." These names bear feelings of heaviness and darkness, further alluding that blackness is the antithesis of traditional white femininity. Overall, the oppression due to sexism outweighs racism in this analysis because women of all skin tones cannot escape from sexism objectification. It should also be noted that the variety of foundation colors were not evenly distributed amongst the three skin tones. Most brands (especially drug store brands) had a greater variety of light and medium shades than the variety of dark shades. The designer brands I observed offer a better array and selection of colors from all tones; however, the color names were just as bad as drugstore brands.

### CONCLUSION

In order to fix this blatantly racist (and sexist) naming system, I suggest eradicating color names all together. I did come across some companies that had more unique ways of labeling their colors. The brand PHILOSOPHY adopted a straight forward number system that followed

**"The use of food as description is the most prominent form of objectification of Women of Color."**

the light to dark gradient. Other companies, like Tarte and BECCA, use their color names as details of the hues and undertones for each specific shade ("medium w/ yellow and pink undertones"). With a little creativity, I believe that make-up companies can adopt better and less problematic naming algorithms.

As with any study, there are some limitations to this project. First, there is room to include many more



make-up brands into the study. There is a limited number of designer make up brands; however, there are many hundreds of designer brands out there that I did not include; including Black-owned make-up lines. To further advance this study, the same analysis should be conducted amongst Black-owned make-up brands. There could be a discrepancy in the ways Black make-up entrepreneurs name their skin tones versus national companies that are notoriously known for catering to white clients. Another limitation of the study is simply my own perceptions of skin colors. Additionally, I categorized if each color name qualified as a light, medium, or dark shade. Due to personal judgement, there could have been some colors in the medium shades that could have been categorized as light or dark. These limitations, I believe, do not influence my study enough to diminish my findings, nor do they interfere with the answering of my research question.

In conclusion, evidence of colorism in the make-up industry is right under our noses everyday, quite literally. Wilder was right in her assertion that the way we talk about skin color carries importance to how we feel about skin color. This study uncovered racist and sexist notions that go unnoticed in the everyday lives of women. Not only are women subjected to sexism, racism, and colorism fostered by the make-up industry, there are also the consumers the allow for this industry to profit from socialized and institutionalized inequality. Additionally, a woman's socioeconomic status influences the availability and access to certain make-up lines. Specifically, poor Women of Color have less access to make-up carried in their natural skin tones due to the limited availability of shades in Drugstores.

## Bibliography

Anon. 2011. "The History of Cover Girl and their Magazine Ads." *Kitsys9090*. Retrieved (<https://kitsys9090.wordpress.com/2011/09/14/blog-2/>).

Collins, Patricia Hill. 2000. *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*. New York: Routledge.

Dagdo, Richard and Jean Stefancic. 2012. *Critical Race Theory: An Introduction*. New York: New York University Press.

Draetos, Zoe Diana. 2007. "Skin Lightening Preparations and the Hydroquinone Controversy." *Dermatologic Therapy* 20(5):308–13.

FashionModelDirectory.com. The F. MD.. 1991. "Lana Ogilvie." The F.M.D. Retrieved No vember 4, 2016 ([http://www.fashionmodeldirectory.com/models/lana\\_ogilvie/](http://www.fashionmodeldirectory.com/models/lana_ogilvie/)).

Ghem, Evelyn Nakano. 2008. "YEARNING FOR LIGHTNESS: Transnational Circuits in the Marketing and Consumption of Skin Lighteners." *Gender and Society* 22(3):281–302.

Global Industry Analytics, Inc. 2015. *The Global Skin Lighteners Market*. Retrieved ([http://www.stratgr.com/marketresearch/skin\\_lighteners\\_market\\_trends.asp](http://www.stratgr.com/marketresearch/skin_lighteners_market_trends.asp)).

Hairston, Tahrah. 2016. "This New Beauty Magazine Is Focused on Makeup and Women of Color." *Fusion*. N.p., n.d. Web.

Hill, Mark E. 2002. "Skin Color and the Perception of Attractiveness among African Americans: Does Gender Make a Difference?" *Social Psychology Quarterly* 65(1):77.

Hochschild, J. Veda Weaver(2007) *The skin color paradox and the American racial order*. Social Forces, Vol. 86, No. 2: 643–670.

Hunter, Margaret L. 2011. "Buying Racial Capital: Skin-Bleaching and Cosmetic Surgery in a Globalized World." *The Journal of Pan African Studies*, Vol 4(4).

Jenner, Kylie. 2016. [http://i.Dailymail.Co.Uk/1/Pw/2016/04/13/22/33268f1600000578-3538650-Image-A-42\\_1460582605566.jpg](http://i.Dailymail.Co.Uk/1/Pw/2016/04/13/22/33268f1600000578-3538650-Image-A-42_1460582605566.jpg).

Mire, Aminia. 2016. "The Emerging Skin-Whitening Industry". *www.courierpunh.org*. Retrieved November 2016 (<http://www.courierpunh.org/2005/07/28/the-emerging-skin-whitening-industry/>).

O'Brien, J.A. & Berry, B. Colorism. (2008). In *Encyclopedia of gender and society*. (1st ed., Vol. 1, pp.147-150. Thousand Oaks, CA: Sage.

Phoenix, Aisha. 2014. "Colorism And The Politics Of Beauty." *Feminist Review* 97-105.

Saguy, Tamar, Diane M. Quinn, John E. Dovidio, and Felicia Pratto. 2010. "Interacting Like a Body." *Psychological Science* 21(2):78–82.

The Renfrew Center "Bartefaced & Beautiful, Without & Within." Retrieved (<http://renfrewcenter.com>).

Trochim, WM.K. 2006. 'Unobtrusive Measures'. (<http://www.socialresearchmethods.net/kb/unobtrus.php>) accessed 11 March 2016.

Wilder, JeffAnne. 2008. "Everyday Colorism In The Lives Of Young Black Women: Revisiting the Continuing Significance of an Old Phenomenon in a New Generation". Ph.D. University of Florida.

Wilder, JeffAnne. 2010. "Revisiting "Color Names And Color Notions": A Contemporary Examination Of The Language And Attitudes Of Skin Color Among Young Black Women". *Journal of Black Studies* 41(1):184-206.

Wischhover, Cheryl. 2011. "How Racist Is The Beauty Industry? Take A Peek At The Most Recent, Most Controversial Ad." *Fashionista*. (<http://fashionista.com/2011/05/how-racist-is-the-beauty-industry-take-a-peek-at-some-controversial-ads-through-the-years#1>).

# Law School & the Possible Recovery of America's Legal Profession

By: Atticus Finch

This research aims to depict recent trends in law school enrollment across the United States and attempts to document data concerning U.S. law schools before, during, and after the financial crisis of 2008-2009, as well as analyzing the effects these trends have had on the American legal profession.

American undergraduate education has garnered a lot of attention in recent months. Senator Bernie Sanders in particular made student debt a keystone issue in his presidential bid, rallying large numbers of young people behind his efforts to reform higher education financing. Following that campaign—and independent of any political affiliation or agenda—colleague-level education continues to be a popular subject for debate.

Interestingly enough, law schools have largely avoided such a public discussion, but unknown to much of the public, a drastic reshuffling of the legal field in the United States has been in the works for some time, partly due to the same issues being debated for undergraduate education. In fact, problems in law schools and the legal field as a whole have led many potential law school students to question whether law is worth pursuing. This uncertainty in legal education may have far-reaching consequences, affecting not only law school students, but also the general populace.

## Background

Attorneys are a staple in modern society. By necessity, laws are written with complex language, guarding against loopholes and abuses. As a result, lawyers and legal scholars serve as the crucial liaison between the government and the regular citizens. Law schools are therefore a necessary step for the development of this

aspect of society. Law schools test and educate future legal professionals beyond simple book learning, creating a class of legal workers that are far more versatile and useful to society (Stone). Within the United States, the legal profession and law school are, to some degree, indispensable. It follows, therefore, that significant movement in the legal education system could produce serious ripples in the legal profession, possibly leading to societal disruptions.

Such a movement occurred shortly after the financial crisis of 2008-2009. The watershed moment for law schools nationwide occurred in 2009-2010; however, this massive shift in the market was long in the making. Due to rising tuition and debt of law school students, lawyers often refuse lower-paying positions, rejecting jobs representing the poor, while also increasing competition at high-level firms. This leads to an increased scarcity of legal services for the disadvantaged while also artificially increasing the unemployment rate for attorneys. Although the legal market has begun to recover (according to 2015-2016 data), several of the crucial issues facing the legal profession and law schools remain in 2017.

## Data

Potential applicants to law schools are often skeptical regarding the economic viability of a law degree, but the demand for attorneys continues to grow at an

insatiable rate. The poor in the United States sorely need competent attorneys. Referring to statistics from the Legal Services Corporation, *The New York Times* reported that up to “80 percent of the legal needs of the poor go unmet” (Bronner, “Right to Lawyer”).

Although the economics of attending law school could be debated, the necessity of lawyers in America is simply indisputable. This need for attorneys is only exacerbated by the decrease in law school applicants and matriculants (Bronner, “Law School Applications”).

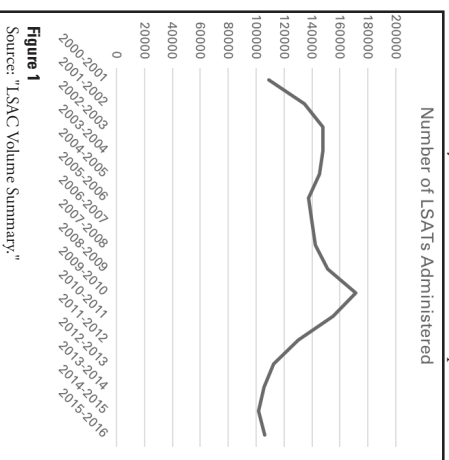
While demand for legal aid for the poor remains high, the legal profession is in the midst of a massive market realignment, leaving even fewer attorneys to tend to the needs of the underprivileged. *Figure 1* displays a graph of LSATs (Law School Admission Tests) administered over recent years. LSATs serve as an indicator of law school attendance and of interest in law school. The LSAT acts similarly to the ACT or SAT tests for undergraduate education. From 2005–2010, the graph seems to reflect growth in the field. Not only is the derivative, or slope, of the graph about that point positive, but the graph is concave up. This means that in addition to the rate of change for LSATs administered from 2005–2010 being positive, the rate of change of *the rate of change* is positive too (this is known as the “second derivative” of the first graph). Since the slope of the first graph is positive and concave up, the growth resembles an exponential function, which was good news for law students. All of this changed, however, in the middle of 2009 and 2010 because the financial crisis of 2008–2009 hit the legal field hard, albeit after a brief delay. The graph remains concave up after the point of inflection in 2009–2010, but in a bad way. The graph sharply and rapidly declines about that point. This downward trend only stopped in the 2015–2016 data. Since then, the downward trend has evened out (as the slope of the graph approached zero). There even appears to be some level of recovery as the slope of the graph becomes positive once again.

The crash affected the legal field in a dramatic, sudden way; however, the economic fragility of law students was gradual. Tuition has been increasing over the years, mirroring the much-talked-about trend in undergraduate education, as demonstrated in the *Figure 2*.

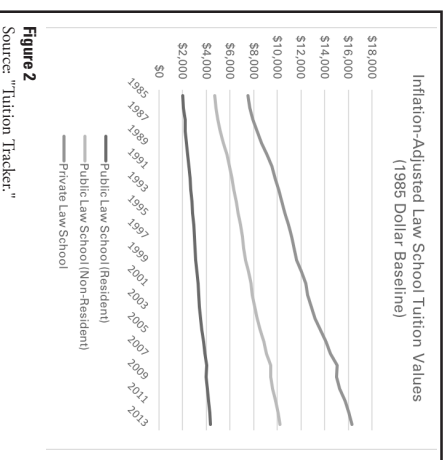
Tuition rates are often displayed as exponential functions; however, these are largely the *nominal* tuition rates. These nominal tuition rate increases seem to be daunting, approaching unpayable levels—and tuition rates are increasing and burdening law students more and more heavily; however, it would be fallacious not

to adjust for inflation. Once adjusted for inflation, it is much more apparent that although tuition continues to rise in cost, the rate of increase is more linear than exponential.

Even though real tuition is only increasing in a linear fashion, the rate of increase is still alarmingly steep. Legal education continues to get drastically more expensive over time. The tuition rate in 1985 was an average of \$2,006 for public law schools with residency, \$4,724 for public law schools without residency, and \$7,526 for private universities (“Tuition Tracker”). By 2013, even utilizing the 1985 dollar as an inflation baseline, the rates had massively increased to \$4,343 for public law



**Figure 1**  
Source: “LSAC Volume Summary.”



**Figure 2**  
Source: “Tuition Tracker.”

schools with residency, \$10,228 for public law schools without residency, and \$16,294 for private universities. The rates (in 1985 dollars) only fell one year: 2009. This is less of a reflection on the reduction of tuition rates, however, and more of a testament to the scale of the recession, which smashed the inflation rate of the time. The cost of law school is going up, and debt levels for students are rising at a frightening pace. Some experts have gone as far as to refer to the student debt situation as “ballooning” (Liberto).

## Analysis

Debt deters many potential applicants from seriously considering law school. As Stephen Dash (*Forbes* writer), the New America Foundation, and the Illinois State Bar Association point out, people only take on large amounts of debt with the hope of making more money (Delisle; Jorgenson et al). Consequently, many law graduates hold out for higher-paying positions at major firms rather than take lower-paying positions at local levels. This does two things. Lawyers that refuse lower-paying positions reject jobs representing the poor, which increases competition at high-level firms. This leads to increased scarcity of legal services for the disadvantaged while also artificially increasing the unemployment rate for attorneys.

In 2013, the demand for attorneys, particularly in the public sector, continued to grow rapidly; however, the rates of application and matriculation continued to slacken as lawyer unemployment rates went up. This also dragged the average salary of attorneys down. In turn, this created a vicious loop, each issue further convincing students not to apply to law school. Legal occupations were under severe threat, and a solution was needed badly and quickly.

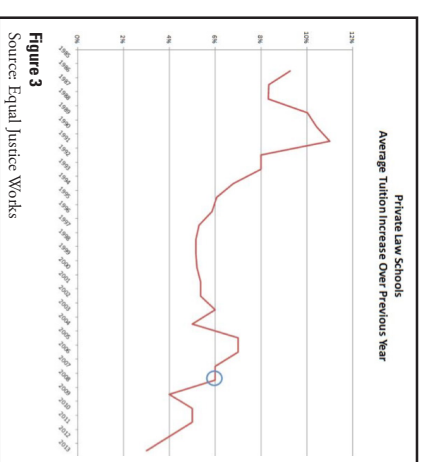
The federal government—prior even to the crash—began attempting to ease the pressure. In 2007, the College Cost Reduction and Access Act (CCRAA) was passed. In essence, the law creates more avenues for higher education debt relief, including the Public Service Loan Forgiveness plan, which stipulates that if a person remains employed in the public sector and maintains regular payments on all loans, the federal government will take steps to reduce that person’s government-issued student loan debt (“The College Cost”) (“Public Service Loan”). In regard to law school, this could help draw some attorneys into the lower-paid, public sector job pool, helping the poor. This would lower student debt for law students while also ameliorating a crucial societal issue. The long-term effects of the CCRAA are still

debated, however. Not long after the law’s passing, the 2008–2009 crash happened, throwing a wrench into any meaningful statistical analysis of the CCRAA’s effects.

Analysis of the its implications are still mixed, as a result. Some law schools have taken matters into their own hands. A few have actively manipulated their own tuition rates in an attempt to make their schools more attractive (Krupnick). Figure 3, produced by *The Huffington Post* was based on data from the American Bar Association. The blue circle indicates the point at which the CCRAA was passed. The immediate dip could have more to do with the recession than the law because the law has only been in effect a few years; the trends are not long enough to be definitive. Although slowing the growth of tuition prices helps prevent the problem from escalating too fast, it stops short of actually solving the problem completely. Real tuition continues to climb so long as the rate of increase of law school tuition surpasses the inflation rate.

Separately, a few institutions have lowered their standards for LSAT scores (Kirovoff). As the LSAT is only scored out of 180, a small change could drastically alter the competitiveness of an institution. This, however, occasionally feeds back into other problems. When law schools churn out students with lower LSAT scores (and therefore generally lower legal abilities), those students go out into the highly-competitive world with a lot of debt and fairly low prospects (The Editorial Board) (Liberto).

Regardless of recent developments, a few facts about law school are apparent. Firstly, law school is extremely expensive. On top of an undergraduate education,



**Figure 3**  
Source: Equal Justice Works

law students endure an additional three years for legal education. Furthermore, real tuition rates—at both undergraduate universities and law schools—are increasing. This puts a significant and ever-increasing financial burden on students. Even by the most recent measures, tuition increases continue to “outpace inflation” (Crittenden). Students only undertake these debts in the hopes that their education will net them a good job, but this is a gamble and, once coupled with job insecurity, is increasingly risky. These factors deter many students from pursuing a legal career, exacerbating the attorney shortage for the poor. Even the College Cost Reduction and Access Act only partially treats the issue. The CCRRA only applies to federally guaranteed education loans. This therefore excludes many other students who have had to turn to other financial options or loans.

This brings us to the present day. The dust from 2008-2009 has settled a bit. The legal field endured a brutal few years. Its reputation as a safe, high-paying profession was dragged mercilessly through the mud. Competition slowly eased as fewer and fewer students applied to law schools. This, however, has led to a revival of sorts. With lower competition, interest in the legal profession is slowly being rekindled (Kittroff). As shown in *Figure 1*, LSAT administration has finally turned upwards for the first time since the recession, and as the National Association for Law Placement reported in the fall of 2014, entry-level jobs for law students began growing again (“Entry-level Law”). The large-scale shifting in the legal field, in the words of *The Huffington Post*, is a “massive market correction.”

The movement in the legal profession was not a “bubble” in the same way as the housing crisis, though it could be compared to a balloon. By 2008-2009, the balloon was far too full. In the following years, the balloon began to deflate, quickly at first (due to pressure), then more slowly. With the balloon deflated, the legal profession now appears to be in the beginnings of a recovery. The legal field remains more volatile than in past generations, but certainly less so than in 2008-2009. And although parts of the legal education system continue to have issues, the deep cuts of the Great Recession are slowly healing. As these issues are gradually discussed more and more, perhaps a rapid and complete solution can be found. In the meantime, tuition increases continue to slow, but at a rate still exceeding the inflation rate (Crittenden). If, however, the tuition increases begin to dip *below* the inflation rate and real tuition begins to decrease—as is likely in future years—

the situation for law students, the legal profession, and therefore several larger aspects of society will improve.

## RECENT TRENDS

In the Legal World

SEPTEMBER 15, 2008

Lehman Brothers goes bankrupt, sending ripples throughout the global economy. This is largely seen as the flash-point for the “Great Recession” (Elliot).

MARCH 15, 2013

Ethan Bronner publishes an article for *The New York Times* entitled, “Right to Lawyer Can Be Empty Promise for Poor” describing the problems with legal service demand for the lower class.

NOVEMBER 3, 2013

Stephen Dash publishes “How Law Schools Will Pull Out Of ‘Death Spiral.’”

APRIL 21, 2014

Matt Krupnick writes “Law Schools Beat Colleges At Lowering Tuition,” documenting the changes law schools are attempting at the time to combat the market pressures.

APRIL 22, 2015

Natalie Kittroff writes “Five Charts That Show You Should Apply to Law School This Year,” detailing the *potential recovery* of the legal field.

2007

The College Cost Reduction and Access Act is passed, establishing the Public Service Loan Forgiveness plan.



JANUARY 30, 2013

Ethan Bronner publishes an article for *The New York Times* entitled, “Law School’s Applications Fall as Costs Rise and Jobs Are Cut.”

JUNE 22, 2013

The Illinois State Bar Association details the negative effects that law school debt has on legal services rendered.



MARCH 2014

Jason Delisle writes the “Graduate Student Debt Review: Borrowing,” detailing the effects debt has to deter many potential applicants from seriously considering law school.

EARLY 2015

Perspectives on Fall 2014 Law Student Recruiting Shows “Entry-level Law Firm Recruiting Tricks Up.” Perspectives on Fall 2014 Law Student Recruiting.



## Works Cited

- Bromner, Ethan. “Law School’s Applications Fall as Costs Rise and Jobs Are Cut.” *The New York Times*. The New York Times, 15 Mar. 2013. Web. 08 Mar. 2017. [www.nytimes.com](http://www.nytimes.com)
- Bromner, Ethan. “Right to Lawyer Can Be Empty Promise for Poor.” *The New York Times*. The New York Times, 15 Mar. 2013. Web. 08 Mar. 2017. [www.nytimes.com](http://www.nytimes.com)
- Crittenden, Jack. “Tuition Increases Slow but Still Outpace Inflation.” *ProLaw* Winter 2016: 4. Print.
- Dash, Stephen. “How Law Schools Will Pull Out Of ‘Death Spiral.’” *Forbes*. Forbes Magazine, 3 Nov. 2013. Web. 08 Mar. 2017. [www.forbes.com](http://www.forbes.com)
- Delisle, Jason. “Graduate Student Debt Review: The State of Graduate Student Borrowing.” *New America Education Policy Program*. New America, Mar. 2014. Web. 8 Mar. 2017. [www.newamerica.org](http://www.newamerica.org)
- Elliot, Larry. “Global Financial Crisis: Five Key Stages 2007-2011.” *The Guardian*. Guardian News and Media, 07 Aug. 2011. Web. 09 Mar. 2017. [www.theguardian.com](http://www.theguardian.com)
- “Entry-level Law Firm Recruiting Tricks Up.” *Perspectives on Fall 2014 Law Student Recruiting*. National Association for Law Placement, 2015. Web. 8 Mar. 2017. [www.nalp.org](http://www.nalp.org)
- Equal Justice Works. “Law School Tuition: Helped or Hurt by Public Service Loan Forgiveness?” *The Huffington Post*. TheHuffingtonPost.com, 18 Nov. 2014. Web. 08 Mar. 2017. [www.huffingtonpost.com](http://www.huffingtonpost.com)
- Jorgenson, Ann et al. “The Impact of Law School Debt on the Delivery of Legal Services (2013).” Illinois State Bar Association. *Illinois State Bar Association*, 22 June 2013. Web. 8 Mar. 2017. [www.isba.org](http://www.isba.org)
- Kittroff, Natalie. “Five Charts That Show You Should Apply to Law School This Year.” *Bloomberg.com*. Bloomberg, 22 Apr. 2015. Web. 08 Mar. 2017. [www.bloomberg.com](http://www.bloomberg.com)
- Krupnick, Matt, and The Hechinger Report. “Law Schools Beat Colleges At Lowering Tuition.” *Time U.S. Time*, 21 Apr. 2014. Web. 08 Mar. 2017. [www.time.com](http://www.time.com)
- Liberto, Jennifer. “Graduate Student Loans Are Ballooning.” *CNNMoney*. Cable News Network, 25 Mar. 2014. Web. 08 Mar. 2017. [www.cnn.com](http://www.cnn.com)
- “LSAC Volume Summary.” Law School Admission Council, Inc., n.d. Web. 08 Mar. 2017. [www.lsac.org](http://www.lsac.org)
- “Public Service Loan Forgiveness.” *Equal Justice Works*. Equal Justice Works, 20 July 2011. Web. 08 Mar. 2017. [www.equaljusticeworks.org](http://www.equaljusticeworks.org)
- Stone, Geoffrey R. “The Importance of Law School.” *The Opinion Pages: Room for Debate*. The New York Times, 25 July 2011. Web. 09 Mar. 2017. [www.nytimes.com](http://www.nytimes.com)
- “The College Cost Reduction and Access Act.” *The Institute For College Access and Success*. The Institute For College Access and Success, n.d. Web. 09 Mar. 2017. [www.itcas.org](http://www.itcas.org)
- The Editorial Board. “The Law School Debt Crisis.” *The New York Times*. The New York Times, 24 Oct. 2015. Web. 08 Mar. 2017. [www.nytimes.com](http://www.nytimes.com)
- “Tuition Tracker.” *Law School Transparency*. Law School Transparency, n.d. Web. 1 Mar. 2017. [www.lawchooltransparency.com](http://www.lawchooltransparency.com)



# How Economic Indicators Influence Mexican Immigration in the United States

By: Daisy Jaimez

The immigration debate in the United States dates back to the beginning of the Bracero worker program when our nation faced labor shortages due to World War II. Since then, the number of Mexican immigrants in the country has drastically increased, though the motives for immigration remain the same: opportunity. In recent years, the number of Mexican immigrants has been falling, including the number of undocumented Mexicans. This paper identifies the main economic indicators that influence Mexican migration into the U.S., considering both undocumented and legal immigration. Data from 1990 to 2015 is used in this study, and we find that even if the unemployment rate in the U.S. is higher than in Mexico, migration continues. Relative differences in income also affect migration in a consistent fashion – the greater the income gap between the U.S. and Mexico, the greater the incentives to migrate. In terms of minimum wages, the results indicate that higher wages in Mexico reduce the incentive to migrate (especially for legal migrants) while increases in U.S. wages attract higher migration into the country. A more vibrant economy also fuels higher levels of migration into the U.S., particularly for legal migrants, but international remittances are found to encourage total and undocumented migration into the country. These results should allow our community, and nation, to find the best-fitting solution to the inflow of immigrants into the United States, and serve as a source of information for further discussion in this area.

It's hardly necessary to say that immigration has become a heated topic in the United States since the 2016 presidential election. Reliable information on immigration is therefore crucial in order for our community to have productive and respectful dialogue. Most of the time immigration is brought up with a negative connotation that fails to recognize the underlying motives behind an immigrant's choice, or the true economic effects it has on our country. Immigrants are usually a self-selected group of people who are highly motivated and able to resettle, thus when they hold the same human capital and employment characteristics, natives of the destination country fear immigrants may earn more than them (Gindling, 2008). Only with cooperation and hard evidence can a solution be rightfully found.

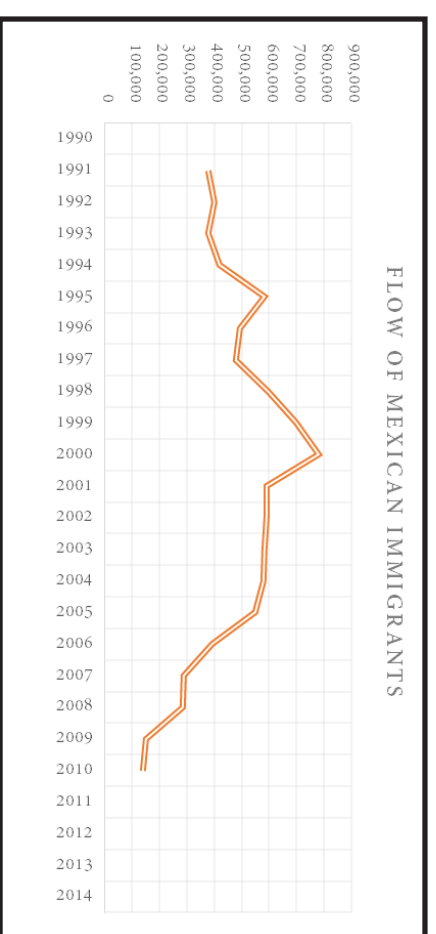
Some argue that the U.S. is a country of immigrants that relies on their labor and contributions to the country; others argue immigrants reduce the employment opportunities for U.S. nationals and cause vast government expenditures. The latter argument is derived from the classical argument stating migration from developing countries into the United States creates a surplus of relatively low-skilled immigrants who are responsible for driving down wages, increasing inequality and poverty, and reducing the protection offered to workers. (Gindling, 2008).

Two-thirds of the population of Mexican origins residing in the United States is immigrants or children of immigrants (Durand, Massey, and Pren, 2016). Mexican immigrants can be separated into two groups: undocumented and legal. Mexican immigrants' journey

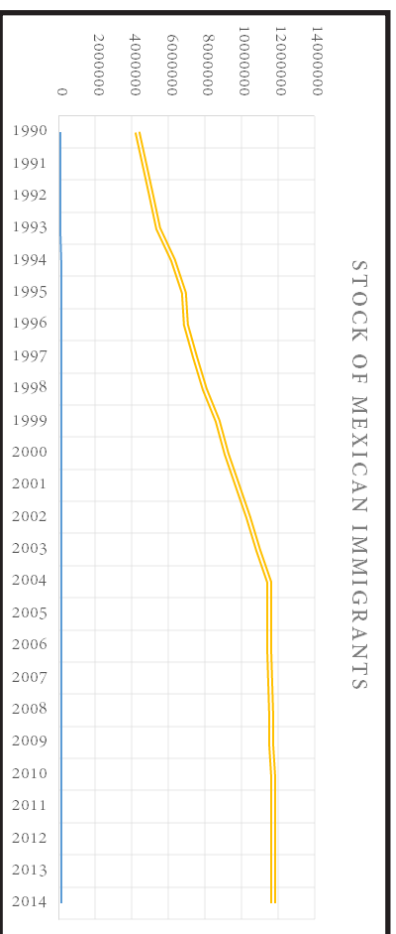
to the north is an attempt to improve their financial well-being and increase their standard of living (Fortes and Rumbaut, 2006). Understanding the prosperity of the Mexican population in the United States, in comparison to U.S. nationals, is vital to any argument formed either for or against the topic. An immigrant's standard of living in their new country can be estimated by the motives leading to a certain immigration pattern. This allows us to better know their starting economic position (Painter and Qian, 2016).

The economic indicator influencing a type of immigration helps form a better conclusion about the level of education and skills an individual brings into the United States, as well as the type of industry they are most likely to be employed in; the industry of employment determines the income they will be earning. The immigrant status of Mexicans in the United States can also tell us about the opportunities available to Mexican immigrants, or those which they are restricted from, in this country. Wage disparities are also a result of legal status (Durand, Massey, and Pren, 2016).

This paper seeks to determine which economic factors affect migration flows of Mexican citizens into the United States. It concentrates on unveiling the main economic indicators influencing Mexican migration into the United States, to find if these individuals made the correct choice in leaving their country of origin. The findings of this paper conclude that the economic indicators influencing Mexican migration into the United States, both undocumented and legal, are the ones that determine the standard of living in general and economic opportunities.



The Bracero program was created in 1942 to ease the labor shortages of World War II in the United States. Mexican immigrants served as a seasonal supplies of labor and were paid wages below the minimum wage rate. Congress cancelled the temporary worker agreement it held with Mexico by 1965 (Durand, Massey, and Pren, 2016). Since then, regulations on



immigration from Mexico were put in place just as labor force participation of Mexican immigrants became more noticeable in the American economy.

Mexican migration flows refer to the annual flow of Mexican immigrants coming into the United States. Close geographic proximity enabled the rapid inflow of Mexican immigrants into the United States during the 1980s. This spike in migration flows might be attributed to the oil shocks Mexico's economy was experiencing, its inability to meet its foreign debt, the devaluation of the peso, and the rising inflation rate of 30% in 1980. Needless to say, the purchasing power of Mexican citizens eroded quickly, and little by little, people along the Mexico - U.S. border began to cross over more and more often.

This study will also examine the differential impact that the main determinants of migration have on attracting legal and undocumented migration. In the 1990s, these migration flows would increase year after year. The United States holds a reputation of 'opportunity' among immigrants; it has attracted those who are seeking to improve their economic standing, employment opportunities, and belong to a more politically and economically stable country. For more than three decades, the close geographic proximity

has encouraged Mexicans to migrate into its northern neighbor. This legal or undocumented migration has made Mexican immigrants a vital component of the labor force in the U.S.

The 2000s sustained massive migration movements from Mexico into the U.S., but with American economic recession of 2007-2009 the number of total immigrants

plateaued. Despite the number of total immigrants still rising, it is increasing at very low levels. The percent of undocumented Mexican immigrants in the U.S. (out of the 11.1 million undocumented immigrants in the country) has fallen from 52% to 49% in present day (Pew Research, 2016). From 2010 to 2012, GDP per capita in the U.S. experienced an average growth of 4.6%. Though growth has slowed down, GDP per capita in Mexico grew by 9.76% between 2004 and 2014 (author's own calculations). The standard of living in a country can be the most important factor in determining whether someone will leave their country of origin and settle in another one. The ability to purchase goods and services, attain an education, political stability, access to healthcare, and safety are some of the indicators contributing to a high standard of living.

This paper is organized in four sections. Section II discusses the areas where Mexican immigrants settle, language ability, economic sectors they are employed in, and analyzes the different factors leading Mexican immigrants to migrate in lower flows or return home. Section III presents the data and results found from a simple specification using various migration measures. Section IV restates the findings of this paper and looks at the future of the Mexican immigration in the U.S.

## II. Settlement, Language, and Employment of Mexican Immigrants in the U.S.

The majority of Mexican immigrants coming into the United States settle in the state of Texas or California (MPI, 2016). The Migration Policy Institute (MPI) found that the metropolitan areas of Houston, Dallas, Chicago, and Los Angeles hold 31 percent of the Mexican migration stock. As a percentage of the metro area population, the McAllen-Edinburg-Mission, Texas has the highest percentage at 27.1 percent (MPI, 2016).

Immigrant networks are key to sustaining immigration patterns. The majority of immigrants who make their way to the United States are sponsored by a family member (Painter and Qian, 2016). Once a relative makes the first move to leave for the United States, other family members are soon to follow as information about job opportunities, safety tips for crossing into the U.S., and housing options become available. These networks then reduce the costs and risks of migrating because they serve as a point of entry in the new country (Davis, Stampini, Secklov, and Winters, 2005). The sharing of information proves to have a big influence on finalizing the choice to migrate, in particular with immigration to the U.S. A sense of security is also fostered in those considering leaving Mexico if someone they know has previously made the journey to the United States. If strong immigrant networks are present, there is a higher probability for permanent settlement.

The networks of Mexican immigrants living in predominantly Spanish-speaking areas might be an attempt to avoid language barriers. The ability to become proficient in English depends on pre-migration characteristics, like education level held upon arrival and the job they will likely secure in the United States (Painter and Qian, 2016). MPI reported in 2016 that four percent of Mexican immigrants speak only English at home, compared to 16 percent of all immigrants residing in the U.S. Lack of English proficiency often creates conglomerates of Mexican immigrants in the United States.

The strong correlation between international migration and remittances also has a great impact on poverty reduction in the developing world. Remittances reinforce immigrant networks as money is sent from the United States to Mexico once Mexican immigrants are established in the country and experiencing some prosperity. Prosperity is experienced in terms of employment (Painter and Qian, 2016). As money earned in the U.S. by Mexican nationals begins to flow back into Mexico in the form of remittances, it assists

in reducing poverty in Mexico. A study found that increasing the share of international immigrants in a country's population by 10 percent causes the percentage of people living on less than \$1.00 a day to fall by 2.1 percent (Siddique, Shehzadi, Manzoor, and Majed, 2016). Additionally, remittances serve as evidence for family members who stayed back that economic conditions are relatively more stable in the U.S. than in Mexico.

Immigrants are a key component of the labor force supply in the United States. In 2014, 87 percent of the Mexican migration stock was part of the working age group. Mexican immigrants make up a large portion of the supply of workers in the civilian labor force; the Pew Research Center states 8 million unauthorized immigrants were in 2014 U.S. civilian workforce. The industries in which Mexican-born immigrants are often employed do not require higher education or to be highly skilled, particularly for undocumented immigrants. The legal standing of immigrants can either grant or remove certain resources to enable the success of immigrants. An undocumented status may restrict immigrants from certain jobs and public benefits, while a legal status may provide immigrants with more job opportunities and make them eligible for public benefits (Painter and Qian, 2016).

When compared to the total immigrant population in the United States and U.S. nationals, Mexican immigrants participate in the U.S. labor force at a 4 percent higher rate, but the number of U.S. born-workers is still greater in all industries (Pew Research Center, 2016). At 31 percent, the service industry employs the largest percentage of Mexican immigrants; employment in the natural resources, construction, and maintenance industry followed at 26 percent (MPI, 2014). Still, the native born population of the U.S. outnumbered the number of Mexican immigrants working in service and construction industries by 10 percent.

The standard of living of Mexican immigrants is mainly determined by the education and skills they bring into the United States. The industries where these immigrants are employed tend to be labor intensive, yet do not have a wage as high as the other sectors where the rest of the immigrant or native born population are working. These differences in employment are seen in the income earned by the Mexican immigrants, immigrants from other nationalities, and native-born U.S. citizens. Mexican immigrants had a median household of \$37,290 in 2014. This amount was over

\$1,000 lower than the whole immigrant population and almost \$20,000 under the native born U.S. citizens (MPI, 2016).

Differences in household income also exist between the legal and undocumented Mexican immigrants. Sixty percent of the total number of Mexican immigrants living in the United States did not hold a legal status in 2010 (Durand, Massey, Pren, and 2016). Undocumented Mexican immigrants in the U.S., are likely to hold limited to no English proficiency or education, have a low income, live in poverty, and not have health insurance. The 1993 drop in Mexico's minimum wage, compared to the steady wage rate of

## "Sixty percent of the total number of Mexican immigrants living in the United States did not hold a legal status in 2010."

the U.S., played a huge role in migration to the U.S. The year 2001 brought another drop in the Mexican minimum wage to 0.20 cents (in U.S. dollars), and also marked the year that Mexican undocumented immigration surpassed legal immigration into the United States.

However, the life of Mexican immigrants in the United States is not always filled with improvements or increases to their standard of living. There are multiple internal affairs in the United States impacting the success of Mexican immigrants and influencing them to return to Mexico. The decreasing annual rates of the Mexican immigrant inflow to the United States, while the total migration stock increases, is attributed to American economic conditions and the restrictive immigration laws. Before making note of the recent year's laws, it is important to understand how Mexican immigrants became a substantial portion of the U.S. labor force through laws allowing their employment.

Prior to the enactment of the Immigration Reform and Control Act of 1987 (IRCA), the Mexican nationals immigrating to the U.S. did so with intentions to remain there only temporarily. It was important for this law to allow temporary immigrants to become permanent U.S. citizens because more than two million Mexican immigrants were able to obtain legal status between 1987 and 1991 (COPA, 2013). This would allow for the newly legal immigrants to bring their family members who stayed in Mexico to the U.S., thus adding to the

migration stock.

Prior to the enactment of IRCA, Mexican migration flows were circular because many immigrants came to the U.S. for a short period of time and returned to Mexico after a couple of years. This law was meant to be restrictive through its sanctions against employers who hired undocumented immigrants, and its call for enforcing stronger border security. Despite IRCA, employers continued hiring undocumented workers in their respective sectors, causing the cheap labor to bring about a reduction in the industry's wages. The decrease in wages made employment in industries like farming or construction less attractive to U.S. nationals, giving rise to the dependence of Mexican immigrants in the labor force. These laws criminalizing the hiring of undocumented workers, in addition to the rise in the number of workers who are undocumented, have resulted in lower wages offered to both undocumented immigrants and all workers in the same industry (Durand, Massey, and Pren, 2016). Additionally, the stronger border security meant that Mexican undocumented immigrants no longer had the flexibility to return to Mexico.

President Clinton passed the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, which instituted an electronic verification of legal status known as E-Verify and was meant to dissuade employers from hiring undocumented immigrants. E-Verify is meant to decrease the employment opportunities for undocumented Mexican immigrants and increase the risks of deportation. Apprehensions of Mexicans at U.S. borders hit their peak of 1,637 apprehensions in the year 2000 (Pew Research Center, 2016). After the September 11 terrorist attacks in the United States, anti-immigration policies grew in scale. One of these policies is the Patriot Act, which was drafted to protect the country against terrorists but ended up applying to undocumented immigrants as well and enabled the mass deportation of undocumented Mexicans in the U.S. Economic recessions in the U.S. also significantly impact Mexican immigration patterns of undocumented Mexicans into the United States. Due to Mexican undocumented immigrants being employed in economic sectors highly vulnerable to changes in the economy, they are consistently one of the first groups to suffer from the unemployment accompanying recessions. According to the PEW Research Center, Mexican immigrants began returning to their country of origin at a faster rate than those coming into the country after the Great Recession (Pew Research Center, 2015). The

Bureau of Labor Statistics (BLS) states that between January 2008 and December 2009, nearly 2 million jobs were lost. Job losses were prominent in the service, manufacturing, and construction industries – the industries undocumented immigrants with low-skills or low-education participate in the most.

Those who had recently immigrated into the U.S. were the first to return to Mexico, but both undocumented and legal immigrants who had been in the country for more than ten years were far less likely to leave (Ornelas, Garcia, 2013). An exception can be made for those the Mexican immigrants who returned to Mexico with their U.S. born children, because of the falling economic conditions in the United States. Many found themselves returning to the central and southern Mexican states with high levels of poverty (Ornelas and Garcia, 2013). Without any employment opportunities available, earning a relatively low income in the U.S., and the stronger enforcement of anti-immigration laws, the costs of migrating to the United States increased.

Legal immigrants from Mexico in the United States, on the other hand, did not reduce their migration flows during this time period. In 2013, the number of legal immigrants surpassed the number of undocumented immigrants by 513,000.

The current rise in inflows of legal immigrants is testimony to the fact that restrictive immigration policies slightly affect individuals with a high level of skills and education. Legal immigrants mostly migrate if they have a secure job in the U.S. or if they become aware of their ability to attain a higher income. In 2014, only 10 percent of total stock of Mexican immigrants was working in the management, business, science, and arts industries (MPI, 2016). Immigrants working in these types of occupations have less chances of returning to Mexico because their employment is relatively more stable than that of undocumented immigrants (Ornelas, Garcia, 2013).

In 1992, the U.S. federal minimum wage was four times higher than that of Mexico's. The steady devaluation of the peso and the appreciation of the dollar also play a role in the purchasing power of Mexican citizens living in their country of origin, but regardless minimum wage rates in Mexico were unable to compete with those in the United States. The U.S. has an appeal to those considering leaving Mexico in search of not only better pay, but also an increased ability to consume.

## III. Data And Results On The Main Determinants Of Mexican Immigration

Before beginning to analyze the components affecting Mexican immigration into the United States, data on the following indicators of both countries was collected to determine the relevance of each indicator. Data from the World Bank Development Indicators, Central Bank of Mexico, Federal Reserve Bank of St. Louis, Migration Policy Institute, and the PEW Research Center was used to calculate the effects of Mexico's and the U.S.'s GDP per capita, unemployment, wages, remittances, and real economic growth upon migration. The dataset collected from these sources spans from 1990 to 2015.

The factors included in a simple regression were population, real GDP per capita, real economic growth,

## "The U.S. has an appeal to those considering leaving Mexico in search of not only better pay, but also an increased ability to consume."

inflation, unemployment, national minimum wages, remittances, and government spending on education. All these factors were used to explain the migration stock, annual flow of immigrants, undocumented immigrants, legal immigrants, and the percentage of the migrant population relative to the total population of Mexico able to migrate. Identifying the factors influencing Mexican immigrants will be used to understand the reasons behind migration movements into the United States.

The confidence level is the boundary stating the significance of a particular variable. The confidence level at the 10 percent is slightly significant; at 5 percent it is statistically significant; and at 1 percent it is highly significant. The level at which an economic indicator is significant at helps us understand its correlation to another variable. Migration patterns into the United States are examined in this paper using the following specification:

$$Migr_t = \beta_1 + \beta_2 RU_n + \beta_3 rGDP_{pc} + \beta_4 WageMX_t + \beta_5 USminw_t + \beta_6 RrGDP_{Pgr} + \beta_7 RelInfl_t + \beta_8 Rempc_t + \beta_9 Year + u_t$$

where  $Migr_t$  is the Mexican migrant stock living in the United States,  $RU_n$  is the relative unemployment rate (unemployment in the U.S. minus Mexico



unemployment). *RcGDPpc* is relative real GDP per capita. *WageMX* is the minimum wage in Mexico (in U.S. Dollars), *USminw* is the minimum wage in the United States (in U.S. Dollars), *RcGDPyr* is real GDP growth, *RelInf* is the relative inflation rate between the two countries (inflation in the U.S. minus Mexican inflation), and *Rempc* is remittances per capita being sent from the U.S. to Mexico. Time variation is controlled by the variable “Year” and the error term is given by “u.” The dependent variable *Migr* actually represents different measures to proxy for migration like the Mexican migrant stock, the annual flows of Mexican immigrants, undocumented immigrants, legal immigrants, and the percentage of the Mexican migrants out of the total Mexican population.

In order to better understand the determinants of migration, two tables are presented below. Table 1 analyzes the migrant stock, migration flows, and the percentage of the total Mexican population migrating. The dependent variables of Table 1 provide a general overview of the migration pattern of Mexican immigrants. The indicators that bring change to the migrant stock, flows, and percent migration of the total Mexican population able to migrate represent how the Mexican economy is doing relative to the U.S. economy. This specification provides insight on how the two countries are doing in comparison to one another and how that affects migration patterns. Table 2 analyzes the migrant stock, undocumented immigration, and legal immigration. Table 2 is meant to communicate

Table 1: Determinants of Mexican Migration in the United States

	Migrant Stock	Migration Flows	Percent of Total MX Population
Relative Unemployment	0.321*** (0.619)	0.02 (0.023)	0.066 (0.046)
Relative GDP Per Capita	0.348* (0.031)	0.182*** (0.001)	0.254*** (0.106)
Mexican Min. Wage in Dollars	-0.865* (0.445)	-0.256** (0.096)	-0.375 (0.338)
U.S. Min. Wage in Dollars	-0.115 (0.277)	0.161** (0.067)	-0.370 (0.211)
Relative Growth	0.054*** (0.019)	0.008 (0.004)	0.006 (0.015)
Relative Inflation	-0.0005 (0.024)	-0.010* (0.005)	0.0155 (0.018)
Remittances Per Capita	0.0005** (0.002)	-0.001 (0.001)	-0.004* (0.002)
Observations	20	16	20
R-Squared	0.9938	0.9794	0.9907
Adj. R-Squared	0.9893	0.956	0.9839

Note: Standard errors are in parentheses. Statistical significance is given by \* for 10% significance level, \*\* for 5% significance level, and \*\*\* for 1% significance level. The Year and constant were not reported for clarity.

with more precision the indicators affecting Mexican nationals’ choice to migrate to the United States.

In Table 1, the migrant stock is the indicator examined in column one. The results indicate that the total number of Mexican immigrants living in the United States is influenced by relative unemployment, relative real GDP per capita, wages in Mexico, real economic growth, and remittances per capita. The results indicate that a unit increase in relative real GDP per capita leads to a 0.35 unit increase in the migration stock, which is statistically significant at the 5 percent confidence level. The estimate suggests that the larger the gap in real GDP per capita between the two countries, the greater the flow of people from Mexico towards the U.S.

Wages are also important in influencing immigration into the U.S. If a higher wage is being offered in Mexico, it reduces the number of Mexican immigrants coming into the country. In fact, a unit increase in the Mexican wage leads to a 0.87 unit decrease in the migration stock, which is significant at the 10 percent confidence level. When the Mexican unemployment rate is higher than the unemployment rate in the United States, the results indicate the migrant stock in the U.S. increases. Meanwhile, the results also indicate a unit increase in relative unemployment leads to a 0.32 unit increase in the migration stock, which is statistically significant at the 1 percent confidence level. Statistically significant determinants on the migrant stock are attributed to the rise in the total number of Mexican immigrants living in the United States. This result can be counterintuitive

Table 2: Determinants of Mexican Legal or Undocumented Migration in the United States

	Migrant Stock	Undocumented Immigration	Legal Immigration
Relative Unemployment	0.321*** (0.619)	0.188* (0.090)	0.035 (0.079)
Relative real GDP per capita	0.071** (0.348)	0.161 (0.203)	0.183 (0.179)
Mexican Min. Wage in Dollars	-0.865* (0.445)	-0.430 (0.652)	-1.202** (0.569)
U.S. Min. Wage in Dollars	-0.115 (0.277)	-0.110 (0.466)	0.308 (0.354)
Relative Growth	0.054*** (0.019)	0.008 (0.029)	0.080** (0.025)
Relative Inflation	-0.0004 (0.024)	0.0176 (0.035)	-0.0217 (0.030)
Remittances Per Capita	0.005 (0.002)	0.010** (0.003)	-0.001 (0.003)
Observations	20	20	20
R-Squared	0.9938	0.9706	0.9271
Adj. R-Squared	0.9893	0.9492	0.8741

Note: Standard errors are in parentheses. Statistical significance is given by \* for 10% significance level, \*\* for 5% significance level, and \*\*\* for 1% significance level. The Year and constants are not presented for brevity.

because one would expect migration to slow down when the unemployment rate in the U.S. is higher than in Mexico. However, the sectors experiencing the higher unemployment are not necessarily indicative of the sectors in which immigrants are employed, so the overall unemployment measure is a bit misleading.

How much a person can earn in one country relative to another is also important, and the greater the gap in income, the greater the incentive to migrate. A unit increase in the Mexican minimum wage leads to a 0.16 unit decrease in the migration flow, which is statistically significant at the 5 percent confidence level. If employment opportunities at home are improving, Mexican nationals do not immigrate to the U.S. The results also found that a unit increase in the U.S. minimum wage leads to a 0.16 increase in the migration flow, which is statistically significant at the 5 percent confidence level. Immigration drops by a larger amount when the Mexican minimum wage increases in comparison to the increase in immigrants when the U.S. minimum wages increase.

Perceptions of the economy also play a big role on immigration. Mexican immigrants tend to leave for the U.S. if they perceive that its economy is doing well compared to their own. A unit increase in relative real economic growth (of the U.S. minus Mexico’s) leads to a 0.05 unit increase in the migration stock, which is statistically significant at the 1 percent confidence level. Mexican citizens compare the performance of their economies relative to that of the host economy since they face an opportunity to raise their well-being when it is higher in the U.S. The results also indicate a unit increase in remittances leads to a 0.005 unit increase in the migration stock, which is statistically significant at the 5 percent confidence level.

The findings of this quantitative analysis indicate that a unit increase in the relative real GDP per capita (of the United States compared to Mexico) leads to a 0.25 unit increase in the percent of the Mexican population that has migrated to the U.S., which is statistically significant at the 5 percent confidence level. This is consistent with previous results, indicating that larger number of the Mexican population will leave their country of origin for the U.S. when the difference in standard of living becomes larger. The portion of the Mexican population willing to migrate is interestingly found to decrease as remittances per capita decline (being statistically significant), perhaps because these monetary inflows reduce the incentive to migrate.

However, are these determinants of Mexican

migration affecting the migration patterns of immigrants under different legal status similarly? Do the main economic determinants migrating have a differential impact according to legal status of the migrants? To examine this potentially different effect we run our specification using undocumented and legal migration as our dependent variable (in columns 2 and 3), and compare the results to our baseline estimation for the total migrant stock (already examined in column one of Table 1).

Table 2 above presents the results for the specification of migration proxy with the migrant stock in column one, migration of undocumented immigrants in column 2, and legal immigrants in column 3. The coefficients of column one were already discussed, but column 2 communicates that a unit increase in relative unemployment leads to a 0.19 unit increase in the number of undocumented immigrants entering

**"Perceptions of the economy also play a big role on immigration. Mexican immigrants tend to leave for the U.S. if they perceive that its economy is doing well compared to their own."**

the United States; this is statistically significant at the 10 percent confidence level. Many undocumented workers who arrive in the U.S. migrate because they are unable to find a job in Mexico. As their unemployment transitions from temporary into permanent, migrating to the U.S. poses itself as a solution.

The results also indicate a unit increase in remittances per capita leads to a 0.1 unit increase in the number of undocumented immigrants coming into the U.S., which is statistically significant at the 5 percent confidence level. This increase can be seen in the overall case but with an effect twice as large. Understanding that undocumented immigrants come from low-income backgrounds and migrate to escape a poverty cycle correlates with the notion presented by the data, since relative unemployment and remittances per capita are what influence their migration. Remittances have become a financial source for families who are living in poverty in Mexico, and the data serves as evidence that for undocumented immigrants migrating to the United States is worth it. The need to better the living situations for family members who remain in Mexico

calls for additional family members to migrate to the U.S., until they can improve their lives back home or eventually bring the rest of their family members to the United States. We can then infer that undocumented immigrants in the U.S. are in search of a source of stable income to bring their standard of living above poverty levels.

When we turn to the factors that affect legal migration we also find interesting results. The results of column three indicate that a unit increase in the Mexican minimum wage leads to a 1.32 unit decrease in the legal immigration into the United States, which is statistically significant at the 5 percent confidence level. If an individual will be paid more in their country of origin, there is no need to leave Mexico. A higher wage in Mexico creates a situation in which highly skilled Mexican workers would leave to the U.S. and pass on the opportunity to increase their current wage and remain with their families. Economic standing for an individual is the product of the wages she/he earns. Regardless of the industry someone may be working in, the national wage gives people a good understanding of the goods, services, and standard of living they will be able to afford. In the case of undocumented Mexican immigrants, a rise in the Mexican minimum wage does not affect their decision because the majority of them are not employed to begin with.

The results also show that a unit increase in the relative economic growth (of the United States compared to Mexico) leads to a 0.08 unit increase in the number of

**"In the case of undocumented Mexican immigrants, a rise in the Mexican minimum wage does not affect their decision because the majority of them are not employed to begin with."**

legal immigrants coming into the U.S. This is statistically significant at the 5 percent confidence level and it is a larger than the effect found for the overall migration.

This result suggests that people who have a high skill-set are likely to be earning a decent wage in Mexico, but if moving to a better performing economy can improve their wage, they will probably do so. These individuals holding a high-level of skills and education have more opportunities to work where they will be paid more.

Their migration pattern is based on the opportunity cost of where they can earn a higher wage. Skilled workers want to be employed in a country where they can get the most out of their capabilities.

#### IV. Conclusion

Immigration into the United States is a topic of debate not only because of its effects on politics and policy, but also in economics. The arguments made against the inflow of people seeking an opportunity to increase their standard of living have remained the same throughout U.S. history: immigrants take jobs away from American citizens. A sentiment of nationalism arises when U.S. citizens fear their skills will not be enough when foreigners with a greater skill set arrive in the country. However, this is not always the case because most immigrants are undocumented and willing to take any job that requires a minimum skill-set.

The shared border between Mexico and the United States has allowed Mexican nationals to immigrate to the U.S. if the economic conditions in their country are not favorable. Through the quantitative analysis performed in this paper we were able to show the main determinants of migration that influence immigration of Mexican nationals into the U.S. This paper found that undocumented immigrants migrate to the U.S. in greater numbers even if the Mexican unemployment rate is higher than in the U.S. This is somewhat counterintuitive but can still be rationalized. Though there is a high probability these individuals will face low wages and struggle to find a job because of their legal status, they will still be in a better socioeconomic standing than in Mexico because at least they are employed. Legal immigrants from Mexico, on the other hand, remain in Mexico if the wage in their country increases because their migration pattern is dependent upon where the higher wage is. These individuals want to be able to be in the country that is experiencing higher economic growth rates because they understand this is where their skills and education will give them greater returns.

Restrictive immigration laws can also be considered a reason why undocumented Mexican immigration is falling and legal immigration is rising. As the United States continues to experience its need to supply jobs demanding a high level of skills and education, Mexican legal immigrants migrate into the country. During the Bracero program the U.S. needed low-skilled workers to employ their agriculture industry. Today, the U.S. offers jobs found in a booming knowledge economy. The shift

in the U.S. dominant industries might also help explain the Mexican immigration flows in the United States.

The economic indicators behind each of these two groups can help these individuals pre-determine if they will be able to increase their standard of living and provides a measurement for their successes in the country. The actual success can be seen if they have resented permanently, returned back home, or measured by the income they generate in the industry where they are employed. Root causes for Mexican undocumented immigration in the United States are based on poverty, thus it is not as important to them if the U.S. is experiencing real growth. As long as undocumented immigrants are aware the living situation is better in the U.S. than in Mexico (in terms of GDP per capita for example), they will make the difficult journey to the U.S. Regardless of the immigration debate, one thing remains certain: the United States depends on immigrants (i.e. Mexican immigrants) to supply its labor force just as much as immigrants (i.e. Mexican immigrants) depend on the United States.

#### References

- Adams, Richard H. Jr., and John Page. 2005. "Do International Migration and Remittances Reduce Poverty in Developing Countries?" *World Development*, 33(10): 1645-1669.
- Boor, Brett, Burzynska-Hernandez, Olivia, and Windell, Jennifer. 2012. "New Trends in Mexican Immigration: Root Causes and Policy Prescriptions." *Institute for Global and International Studies, The George Washington University*, 2-13.
- Chiquian, Daniel, and Salcedo, Alejandrina. 2013. "Mexican Migration to the United States: Underlying Economic Factors and Possible Scenarios for Future Flows." *Migration Policy Institute*, 3-17.
- Cortes, Kalena E. 2004. "Are Refugees Different From Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States." *The Review of Economics and Statistics*, 86(2): 465-480.
- Davis, Benjamin, Marco, Stampini, Guy Stecklov, and Paul Winters. 2005. "Do Conditional Cash Transfers Influence Migration? A Study Using Experimental Data from the Mexican Progresa Program." *Demography*, 42(4): 769-790.
- Durand, Jorge, Douglas S. Massey, and Karen A. Pren. 2016. "The Precarious Position of Latino Immigrants in the United States: A Comparative Analysis of Ethnoscience Data."
- Gindling, T.H. 2008. "South-South Migration: The Impact of Nicaraguan Immigrants on Earnings, Inequality and Poverty in Costa Rica." *World Development*, 37(1): 116-126.
- Instituto Nacional de Estadística y Geografía. 2016. "Información de Migración Internacional con Datos de la ENOE al Tercer Trimestre de 2015." *Instituto Nacional de Estadística y Geografía*, 1-6.
- Migration Policy Institute. 2016. Migration Policy Institute. <http://www.migrationpolicy.org/article/mexican-immigrants-united-states> (accessed October 30, 2016).
- Ornelas, Aguado Daniel, and García, Ramirez Teleforo. 2013. "Determinantes de la migración de retorno en México, 2007-2009." *Consejo Nacional de Población*, 176-182.
- Painter II, Matthew A., and Zhenchao Qian. 2016. "Wealth Inequality among New Immigrants." *Sociological Perspectives*, 59(2): 368-394.
- Pew Research Center. 2015. Pew Research Center. <http://pewrsr.ch/1NHbYEu> (accessed October 19, 2016).
- Portes, Alejandro and Ruben G. Rumbaut. 2006. *Immigrant America: A Portrait*. Berkeley, CA: University of California Press.
- Schaeffer, Peter. 2009. "Refugees: On the Economics of Political Migration." *International Migration*, 48(1): 1-21.
- Siddique, H. A., Shehzadi, I., Manzoor, M. R., & Majed, M. T. 2016. Do International Migration and Remittances Reduce Poverty in Developing Countries? *Science International*, 28(2), 1519-1523.
- Durand, Jorge, Douglas S. Massey, and Karen A. Pren. 2016. "The Precarious Position of Latino Immigrants in the United States: A Comparative Analysis of Ethnoscience Data."

# From French Revolutions to Gaullist Weekends: The Films of Jean-Luc Godard and the Discontent of May '68

By: Rudy Martinez

Jean-Luc Godard's filmmaking career completed its first phase after the events of May 1968, when millions of laborers and students went on general strike and shut down France. Young people revolting on the streets brought into question every aspect of conventional life just as the filmmaker had been questioning the very notion of cinema for the better part of a decade. May '68 would have occurred without Godard, and the director would have been at the forefront of any film conversation had the events never occurred, but there is much to be said about the effects one had on the other. The argument to be made is that Godard, as a celluloid essayist and philosopher,

and the French people came to mirror one another by the time events were hinting at a massive revolt. Godard's works provided audiences with snapshots of society in the years leading up to May '68. Examples of this include capturing an aloofness found amongst French youth coming of age during the post-war boom in *Breathless*, introducing us to angst-ridden would-be intellectuals in *Masculin Féminin*, and then allowing us a peek into the world of a Maoist cell comprised of frustrated students who believe the only way to bring about change is through terroristic action in *La Chinoise*. This essay paves parallel roads between Godard's work and the events of May '68.

## The Post-War Recovery, *Breathless*, and Godard's Early Career

At the end of World War II, European countries, including France, saw their economies in shambles. By 1947, however, many western European countries began to witness a period of growth that would persist well into the 1960s. This was in no small part due to the Marshall Plan, the American initiative to oversee the rebuilding of European economies, of which France received a large portion of the funds. Every year from 1960 until the early 1970s saw France's gross domestic product rise by an average of six percent (Liebertal). It seemed as if capitalism and post-war economic cooperation was going to work.

This post-war comfort in France also saw the birth of what François Truffaut, a *Cahiers du Cinéma* (Notebooks on Cinema) critic alongside Godard, and later a major figure in the French New Wave (or Nouvelle Vague), described as the cinema du papa, or grandfather's cinema. There was a certain bourgeois tradition to be followed by filmmakers in France in the late 1950s and early 1960s, one that included "the formulaic repetition of genres" incapable of "attracting new audiences into the cinemas" (Nowell-Smith 146). The pre-Nouvelle Vague French cinema saw filmmakers shooting in studios with elaborate sets, complicated technologies, authoritarian producers who almost always had the last say, and high production values (Kline 3). The *Cahiers*, which also included Claude Chabrol, Jacques Rivette, and Jacques Doniol-Valeriz among its ranks, would radically alter the film scene in Europe in the late 1950s. After spending the better part of a decade criticizing most conventional western cinema, Truffaut and Godard delivered their respective feature-length debuts in 1959 and 1960. *Les quatre cents coups* (The 400 Blows) debuted at the 1959 Cannes Film Festival and found universal acclaim, much to the chagrin of those in attendance who wanted to see the young Truffaut fail due to his reputation as a fierce and unrelenting critic (Kline 5). Godard's *A bout de souffle*, or *Breathless*, blazed its way into the cultural zeitgeist the following year, beginning a dialogue whose synthesis was to be the uprisings of May '68.

Godard and his crew, it could be argued, sowed the seeds of discontent that would define nearly every forthcoming Nouvelle Vague film from 1960-1967. This was accomplished, in part, due to a nuanced approach that presented a new relation between the visual aspects of film and the attitudes embodied by its protagonists. One could read *Breathless*' Michel Poiccard (Jean-Paul

Belmondo), the gun-toting, Humphrey Bogart-idolizing gangster, as a representation of how the youth in France felt at the time. As Geoffrey Nowell-Smith explains in *Making Waves: New Cinemas of the 1960s*, the term Nouvelle Vague was originally used by journalist François Giroud for an investigation into the attitudes of 18 to 30-year-old French citizens in 1957 (143). This generation is best summed up by Jean Seberg's character of Patricia Franchini when she notes "I don't know if I'm unhappy because I'm not free, or if I'm not free because I'm unhappy." Generation Giroud, as I will refer to them, had no existential conflict with an obvious villain to fight like the Third Reich in the Second World War. The Algerian War for Independence, a conflict widely discussed amongst the French citizenry, was an ambiguous colonialist conflict that saw France attempting to grasp onto a fading old world. Jean Collet, in Jean-Luc Godard: *An Investigation into His Films and Philosophy*, articulates the sort of ennui a generation feels when they are "born into a world too full, too complete" when he states the fathers of Giroud's generation had destroyed and rebuilt the world, leaving the youth with nothing (5). Michel and Patricia were left to aimlessly wander the Champs-Élysées with "everything to consume and nothing to conquer" (Collet 5). Poiccard serves as a nihilistic antithesis, and arguable victim, to these conditions as he lives his short life as freely as possible, resulting in his violent death in a Paris backstreet. In his last moments, he reveals to Patricia, and his generation at large, just exactly how he feels by muttering "C'est vraiment degueulasse," poplarly translated to: "Makes me want to puke."

Le Petit Soldat, Godard's highly political sophomore film, finds its protagonist Bruno Forestier confronting similar disenchantment with early-60s France. He muses whether "the time for action has passed" and whether "the time for reflection has come." Forestier echoes Danish proto-existentialist philosopher Søren Kierkegaard's influential essay "The Present Age," in which he states that the age of passion, found in the time of the French Revolution, has glossed over the present. Citizens, faced with a society with a democratized press and certain social liberties, find solace in the act of reflecting over their own lives and the great issues of their time. Commitment no longer finds itself necessary in an environment in which forming opinions is more than enough (Dreyfus 1). These sentiments of disillusionment displayed by the characters in Godard's early films, essentially the young people of the day, turn into anger in his later projects.



## The Children of Marx & Coca-Cola, the Aden Arabie Cell, and May 68

In 1966's *Masculin Féminin*, Godard introduced us to Paul, an ex-army recruit played by Jean-Pierre Léaud, and Madeline, a young woman yearning to be a pop-star played by Chantal Goya. The film's two protagonists represent disparate ends of the societal spectrum found amongst French youth at the time: those riding the wave of pop culture and those whose bourgeois class consciousness had taken them hostage. Paul and Madeline are essentially the "children of Marx and Coca-Cola," a term coined by Godard that was first used in the film. Its usage paints a portrait of a culturally savvy, youthful generation who retains an understanding of the era they live in, an era whose backdrop was the war in Vietnam, the Cold War, and countless social movements.

At one point in the film, upon their meeting one another, Madeline asks Paul if his military service was "fun." His response is as follows: "...twenty-four hours a day to unbridled authority, 16 months of struggle a young Frenchman must endure to win relative freedom from authority...it can become a life of submission, because the military and industrial complex coexist well, as the logics of money and order." This film, sees Godard taking a stance against what western society had to offer French youth—a life rife with service, military or otherwise, to an oppressive capitalist system. Anger was building among youth who felt they had no other choice but a life of subservience to the world their parents built.

In March of 1967, just over a year before the events of May 1968 would rock western society, Godard presented the world with his most radical film to date, *La Chinoise*. The film is set in Paris and follows five young Maoists who aim to put their theory into practice to bring the world closer to resembling a Marxist-Leninist commune. Collet argues that the five characters the film follows "represent five different strata of society" (138). We are introduced to Veronique (Anne Wiazemsky), a philosophy student at Nanterre; Guillaume (Jean-Pierre Léaud), an aspiring actor who aims to consolidate the teachings of Mao Tse-Tung with his passion for theater; Henri, a scientist; Krilov, who, as a painter, draws political slogans in the apartment the youth share; and Yvonne, a part-time prostitute. The film, and the increasingly radical political sentiments found within France, were in part inspired by the Chinese Cultural Revolution. The Cultural Revolution, which began in 1966, found

Chairman Mao desperately trying to avoid a turn to soviet-style communism (Liebertthal). Providing Chinese youth with revolutionary experience would serve as one of the pillars for his ends. Mao's radical sentiments ring very strongly among this group of Parisians, as they believe that assassinations and kidnappings will further their cause. The group decide that they will name their collective The Aden-Arabie Cell, a reference to the novel of the same name by Paul Nizan, a prominent 20th century French philosopher (Collet 140).

One might find it prophetic that the bourgeois couple Godard follows in *Weekend* are presented with the question: "Are you in a film or in reality?" Roland, played by Jean Yanne, claims he and his partner Corinne, played by Mireille Darc, are in a film and is subsequently accused of lying. The film's release came just six months before the events of May '68, with Godard portraying the stagnation of western civilization in the form of a black comedy. In one particularly memorable scene, Roland and Corinne find themselves in a seemingly endless traffic jam in the French countryside, the modern machines stuck in traffic as they attempt to cross over into a postmodern world. It's a scene that lasts nearly 12 minutes and encapsulates the pause in societal norms that France would experience during the events of May '68; both the film and the muted revolution were a retort to an increasingly globalized and capitalist world. Godard used shots of overturned cars in the countryside as representative of a disillusionment with modern society, which had been hinted at as early as 1960. His message became, not only more overt, but radical as well. If one can picture May '68 as a powerful, albeit brief, fire in the history of social upheavals, then the clashes between students and police in the lead-up to the strike can be labelled as the volatile fuel at the source of it.

A Godardian scene would erupt in the first couple of weeks of May, with students and police violently clashing in the Latin Quarter of Paris. The clashes resulted in the arrests of hundreds of students and an almost daily increase in public sympathy (Wolfin). Seeing students and professors on the streets would inspire nine million workers to go on strike, prompting President Charles de Gaulle to make plans to militarily defend Paris from a revolutionary takeover. Though this takeover would never come to fruition, de Gaulle was forced to call new elections in June. De Gaulle, in a premediated political move, correctly assumed that

a desire for stability amongst the French people would ensure his victory (Wolfin).

The fatally inquisitive and rebellious youth of Godard's films, representative of widely held sentiments among actual French youth, became increasingly radical throughout the 1960s. Events the world over including, but not limited to, American involvement in the Vietnam War, the assassination of Malcolm X, the Chinese Cultural Revolution, the Civil Rights movement, and the formation of the Black Panthers, created a dire situation that threatened the stability afforded to the west after the end of World War II.

### Dziga Vertov and Final Reflections

As Donato Totaro explains in his article "May 1968 and After: Cinema in France and Beyond, Part 1," Godard made a conscious decision after the events of May '68 to turn away from what he deemed "bourgeois filmmaking" (5). Godard, alongside activist Jean-Pierre Gorin, founded the Dziga Vertov Group in 1968.

The group's name was a direct reference to the father of surrealist Soviet filmmaking Dziga Vertov, best known for his kino-glaz theory which states that the camera "is an instrument, much like the human eye" (Liebertthal). The group would go on to release a total of nine films from 1968-1973, with only one of them, *Tout va Bien*, ever screening in mainstream theatres (Totaro 6). This period of Godard's films is defined by a strong desire to "make political films politically" (Totaro 6), with the use of montage becoming integral to the group's output and his decision to not have his name placed on any project.

I can only imagine, with much envy, how one must have felt watching *La Chinoise* or *Weekend* in the immediate aftermath of May '68. The anger and wit found in nearly all of Godard's films in his first career arc (1960-1967) spilled onto French streets and occupied the universities, "realty set about aping a Godard film" (Collet 1). What then does it say about the work of an artist when their work only becomes more prescient over time? Some of the most influential philosophers of the last several hundred years, such as Karl Marx and Søren Kierkegaard, developed criticisms that helped shaped political and postmodern thought, their words ringing with truths that become increasingly defining by the day. The same will be true with Jean-Luc Godard, a man whose work can only be understood backwards but forces us all to continue to live forward.

### Works Cited

- Atack, Margaret. *May 68 in French Fiction & Film*. New York, Oxford UP, 1999. Oxford Studies in Modern European Culture.
- Chung, TK. "Economic Recovery and Economic Cooperation 1945-1960." *Funfont*, Dec. 1979, [www.funfont.net/hsit/europe/econ-coop.htm](http://www.funfont.net/hsit/europe/econ-coop.htm). Accessed 4 Dec. 2016.
- Collet, Jean. Jean-Luc Godard: An Investigation into His Films and Philosophy. Translation, 1970. ed., New York: Crown, 1970.
- Dreyfus, Hubert L. (1999). "Kierkegaard on the Internet: Anonymity vs. Commitment in the Present Age." *Kierkegaard Studies Yearbook* 1999 pgs. 96-109. Accessed 17 Apr. 2017.
- Godard, Jean-Luc. director. *A bout de souffle*. Les Productions Georges de Beauregard, 1960.
- director. *La Petit Soldat*. Les Productions Georges de Beauregard, 1963.
- director. *Masculin Féminin*. Anouchka Films, 1966.
- director. *La Chinoise*. Anouchka Films, 1967.
- director. *Weekend*. Comaccio, 1967.
- Kline, T. Jefferson. "The French New Wave." *European Cinema*. Edited by Elizabeth Ezra. Oxford University Press, Oxford, 2004.
- Liebertthal, Kenneth. "Cultural Revolution: Chinese Political Movement." *Encyclopedia Britannica*. Encyclopedia Britannica. [www.britannica.com/event/Cultural-Revolution](http://www.britannica.com/event/Cultural-Revolution). Accessed 5 Dec. 2016.
- Luzi, Evan. "The French New Wave: A Cinematic Revolution." *Theblackandblue*. Jan. 2010. [www.theblackandblue.com/2010/03/29/the-french-new-wave-a-cinematic-revolution/](http://www.theblackandblue.com/2010/03/29/the-french-new-wave-a-cinematic-revolution/). Accessed 5 Dec. 2016.

# St. Mary's Caries: A Comparative Study of Dental Caries Occurrence in the Burial Sites of St. Mary Spital and St. Mary Graces Cemeteries

By: Samantha White

Dental caries is a pathological condition common to post-agricultural populations and often used in bioarchaeological studies to assess levels of human health and nutritional status. This study compares caries rates from two Medieval cemeteries from London, England: St. Mary Spital and St. Mary Graces. St. Mary Spital served as a church priory and hospital complex with adjacent cemetery sites to accommodate deaths from the sick and poor. St. Mary Graces cemetery was established in association with the Cistercian Abbey of St. Mary Graces and served mostly common Londoners. Caries prevalence data from both cemeteries were compared to seek differences between

the two populations and between sexes, both within and between cemeteries. Adult individuals of known sex and at least one dental caries were utilized as a sample ( $n=122$ ). Analysis resulted in a statistically significant ( $t=-11.454$   $df=120$   $p=.000$ ) difference between the two cemeteries, with St. Mary Spital having significantly higher overall rates of dental caries, and no significant difference between sexes ( $t=-1.167$   $df=120$   $p=.246$ ). The ill health and likely poor nutrition of those buried at St. Mary Spital should have predisposed them to greater dental caries rates than higher status Londoners buried at St. Mary Graces, and this is reflected in the results of the analysis.

**O**ral and dental health often speaks a great deal about the overall health status of an individual. As the primary point of entry for the body, the mouth serves as a harbor for many food and waterborne pathogens, as well as frequently reflecting the effects of suboptimal nutritional status, congenital conditions, and infectious conditions of the individual. Tooth enamel (the hardest substance found in the human body) along with dentin and cementum comprise tooth structure, and these three dental tissues preserve the dentition of deceased individuals extremely well, often surviving for millennia. This naturally preservative quality makes dentition a rather reliable resource in the archaeological record, often surviving decomposition, burial, and weathering when other osteological material does not.

Though they are rather impervious to damage once the soft tissue has decomposed, in life, teeth are susceptible to a variety of diseases and can subsequently be damaged or lost for a number of natural and cultural reasons. Because adult teeth are permanent and develop in the craniofacial bones during childhood, an individual's dentition carries a permanent record of their life in their jaws, from childhood through death. Dentition, therefore, is used in many bioarchaeological studies to assess the general health and nutritional status of past populations, as well as to reconstruct dietary patterns and even some cultural patterns and practices.

Of the many afflictions that teeth are vulnerable to during their development and use during life, perhaps the most common and potentially most damaging is dental caries. Hillson (1996), a leading expert in dental anatomy and biology, presents dental caries as an infectious and transmissible disease that can affect any part of the dentition, and as having potentially devastating effects. According to Hillson, caries occurs when bacteria from sugary carbohydrates, such as maize and other agriculturally developed grains, gets lodged in spaces on or around the teeth. These bacteria then begin to ferment, feeding on the residues from food intake that stick in the mouth. As they ferment, the bacteria produce corrosive acids that progressively wear away the enamel surface. Once it pierces all the way through the enamel, this acid can then corrode the dentin and pierce the pulp chamber of the tooth, causing pain and difficulty eating for the affected person. This destructive disease can eventually lead to complete destruction of the tooth if left untreated and is a prominent cause of antemortem tooth loss due to disease. Because caries is caused by bacterial infestation, caries is transmissible throughout the mouth; so one instance of caries in a

mouth often correlates with multiple caries within the same mouth. Caries can affect any tooth position, but is most common in the posterior dentition, and primarily on the first molar of both dental arches (Hillson 1996). Caries can range from nearly imperceptible brown or white "pinprick" spots to complete destruction of the tooth crown, though there are many different methods and scales for grading caries size and severity.

Dental caries is a disease that leaves a permanent mark on the dentition of an affected individual, which makes it relatively easy to identify in the archaeological record. Because caries is a disease that results primarily from dietary factors, it is extremely useful for reconstructing the dietary intake of past populations, in conjunction with any kind of written records, food-related artifacts, and stable isotope analysis of tooth and bone tissue. Nutrition is a highly important variable in overall health, and analysis of dental conditions linked to dietary intake and nutrition can be very informative about the general health of past populations.

## The Data Sets: A Brief History of St. Mary Spital and St. Mary Graces Cemeteries

Medieval England was a period of great historical significance that occurred roughly between the end of the 5th Century through to the end of the 15th Century. Marked by the development of the feudal system and the classical depictions of castles, knights, and a primitive struggle for peasant life, this time period encapsulates a long and varied archaeological record of disease and injury. From this time, two cemeteries – St. Mary Spital and St. Mary Graces – serve as excellent snapshots of life and death in medieval England. Both cemeteries contain many significant markers of disease and injury, spanning nearly all ages and including many different social classes and occupations. By examining these two gravesites, it is possible to find patterns of pathology and trauma that can aid in reconstructing the life and health of populations that lived and died while these cemeteries were in use.

The work of Connell et al. (2012) indicates that St. Mary Spital was a priory and hospital established in about 1197 by a group of wealthy merchants from London. St. Mary Spital was created to aid the enlarging population, to extend much-needed aid to the increasing elderly, sick, and injured, and also offered charity to the poor or those otherwise in need, such as pilgrims and women in childbirth. The priory itself was established first, with the hospital not developed or built for roughly another 40 years. At its peak, the hospital at St. Mary

Spihal had 180 beds, making it the largest infirmary in all of London. After Henry VIII became king, the priory was dissolved in 1539, and the area was slowly repurposed for housing of the minor aristocracy as well as an artillery ground. (Connell et al. 2012)

Within the site of St. Mary Spihal, there are multiple cemetery sites – one an earlier cemetery near a 12th-century building, another made later near a 13th-century building, and the main cemetery that is to the south and east of the church. This main cemetery was the subject of large-scale excavation between November 1998 and August 2001 by the Museum of London Archaeology. The site, having been used and occupied for many years, was assigned time periods and phases by archaeologists when collecting data, and these along with demographic data were used to assess and categorize the individuals recovered. (Connell et al. 2012)

St. Mary Graces cemetery in London was built in association with the Cistercian Abbey of St. Mary Graces. This abbey was established shortly after the end of the Black Death swept through England and was used until the time of the Reformation in the 16th century. While monks and important lay people were buried within the church and chapels on the grounds, the general cemetery at St. Mary Graces was used for the general population – containing individuals of all ages, both sexes, and of both high and low socioeconomic status. Excavation of this site by Museum of London Archaeology in the 1980s revealed the remains of over 300 lay people, in addition to over 100 monks and important people buried in the church and chapels (DeWitte and Bekvalac 2010).

Both of these burial sites contain large and representative samples of the people that they served. However, it is important to note that these two institutions were established and used for very different purposes, and so their respective burial populations may show variation in a number of biological markers because of that. St. Mary Spihal was explicitly used as a hospital, and as a charitable housing for the poor and infirm, while St. Mary Graces was simply a burial site for the general lay population. Because of this, it is reasonable to expect a high concentration of disease and injury at St. Mary Spihal as compared with St. Mary Graces, consistent with its use as a burial site for the diseased and injured. However, dental caries has no explicit biological predilection toward individuals with other co-infections or concurrent injuries, generally speaking, and can be used as a means to compare the two burial sites without the high probability of spurious

relationship or confounding variables.

## Methods

Full data sets from the excavations at St. Mary Spihal and St. Mary Graces are open sourced and available to the public both in print and as digital copies. The Museum of London Archaeology maintains these data sets on their website through their Centre for Human Bioarchaeology (WORD database 2015, available at <http://archive.museumoflondon.org.uk/Centre-for-Human-Bioarchaeology/>). By utilizing these rich datasets which contain information about dental pathology, specifically dental caries as well as demographic data, it is possible to make a statistical comparison within and between these two burial populations. These comparisons enable investigation into patterns of dental health and disease, and can allow for estimation of health and nutrition in these people.

From within this large population dataset, individuals were chosen for inclusion in this project if they had at least one or more caries present in their dentition (N=122). In selecting the sample, subadults, individuals of undetermined sex, and individuals with no caries present were eliminated from the total population. Because caries can only be detected by examining the teeth left in the jaw and skull at the time of death, this selection and overall counts from this sample likely underestimate true prevalence due to antemortem tooth loss.

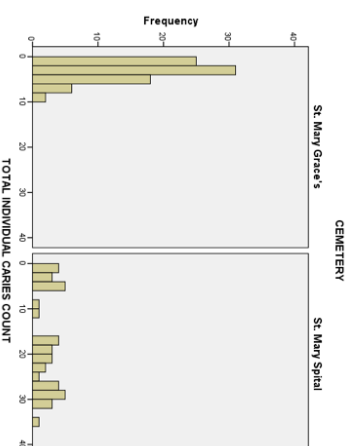
For the purposes of this study the variables sex, cemetery, mandibular caries count by individual, maxillary caries count by individual, and total caries count by individual from each data set were used in independent sample T-tests of means for significance, seeking the strength and direction of any existing relationship between them. Because some statistical testing within the sites is already given in Museum of London Archaeology's published material about the two sites, when available this information was used as provided in conjunction with independent testing.

Primarily, this study seeks to examine differences between sexes, both within each burial site as well as between the two as separate and aggregate categories. Additionally, this study will look to find differences between the two cemeteries overall, to determine whether there were significantly greater or fewer incidences of dental caries between two burial populations from comparable time periods and very similar locations, though used in different ways.

## Results

Of the total population (N=122), 82 individuals were buried in the cemetery of St. Mary Graces and 40 were from St. Mary Spihal. Of the aggregate number of individuals, 84 were male (68.9%) and 38 were female (31.3%). All individuals had at least one caries in the permanent dentition that remained intact within the mandible or skull. The mean number of maxillary caries and mandibular caries was roughly similar (3.66 mean maxillary caries and 3.84 mean mandibular caries). Of the whole mouth, the mean total individual caries count was 7.48, with a median of 3.00. Total caries counts ranged from 1 to 35 per individual. For more detailed information about the frequencies and descriptions of the sample, see Appendix A.

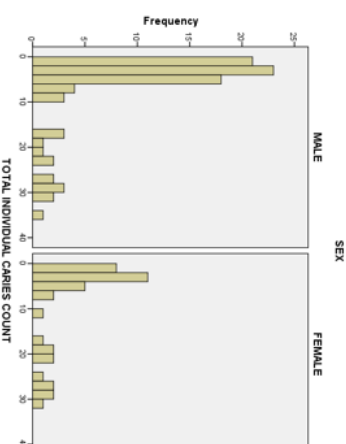
An initial T-test sought to find a relationship between total individual caries count and cemetery location. The results ( $t = -11.454$   $df = 120$   $p = .000$ ) showed a strong negative relationship between these two variables. That is, an individual was much more likely to have a higher incidence of dental caries if they were found in one cemetery over the other. In this case, individuals buried in St. Mary Spihal had significantly higher caries counts per individual, as shown in the histogram below. For full statistical information, see Appendix B.



A secondary pair of tests looked for differences between the cemeteries within the maxillary or mandibular arcades separately. In concordance with the prior results of total caries counts per cemetery, each dental arcade also showed significant differences. In both instances, individuals from St. Mary Spihal had significantly higher rates of maxillary and mandibular caries. (Mandibular caries  $t = -10.358$   $df = 120$   $p = .000$ ;

maxillary caries  $t = -10.337$   $df = 119$   $p = .000$ ) Full testing information can be found in Appendix C.

Another T-test looked for a similar relationship, if any, between total individual caries count and the sex of the individual. The results ( $t = -1.167$   $df = 120$   $p = .246$ ) showed no significant relationship between sex and total caries count. Additional testing compared maxillary and mandibular counts to sex to see if there were significant differences between the different arcades based on sex. Maxillary caries counts showed no significant relationship ( $t = 1.238$   $df = 120$   $p = .218$ ), and mandibular caries counts failed to produce any kind of relationship as well ( $t = 1.107$   $df = 120$   $p = .270$ ). The graph below displays a comparison of frequencies of total caries counts between males and females. For further detail on these tests, see Appendix D.



## Discussion & Conclusion

Considering their respective histories, it is unsurprising to see that St. Mary Spihal had significantly higher caries rates than St. Mary Graces. St. Mary Spihal was used explicitly as a hospital and charitable shelter for the poor and infirm, whereas St. Mary Graces was simply a burial site for lay people. In a locale with highly concentrated amounts of disease and poverty, it would only make sense to see higher rates of illness and malnutrition left on skeletal remains, and this is exactly the kind of record that individuals from St. Mary Spihal show. Caries rates at St. Mary Graces are comparable to other similar burial sites of the Medieval period. (DeWitte and Bekvalac 2010) Knowing this, it is reasonable to assume that St. Mary Spihal, having significantly higher caries rates than St. Mary Graces, is also likely to have significantly higher rates of dental



caries than most other typical Medieval burial sites.

In their work on St. Mary Graces, DeWitte and Bekvalac utilize Usher's multivariate model of morbidity and mortality to determine that individuals suffering from dental and periodontal diseases, such as caries, are more likely to die than their unaffected peers (DeWitte and Bekvalac 2010, Usher 2000). If this model holds true, then individuals at St. Mary Spital would have been more likely to die than individuals from other sites because of their high rates of dental and periodontal disease or because of co-infections and conditions associated with dental and periodontal diseases.

Future research examining the association of caries with mortality rates should be conducted. Similar comparison studies could be undertaken on other burial sites, in an effort to identify areas of high mortality risk. These areas of high risk likely represent regions of great poverty, due to the likelihood of the poor having inadequate access to nutrition and suffering more often from disease and injury. Knowing this, it is possible to examine different burial sites for the standard of living and socio-economic status of the burial population during their lifetimes. This aids in the reconstruction of past societies and furthers knowledge about historical and pre-historic populations, adding to the growing body of knowledge about health and the human past.

Ultimately, statistical testing can only provide information on the population, not the individual.

Compelling information can be garnered from a case study of individual remains from within these two populations, as well as historical and cultural research about the kinds of people who would have lived and died in these places.

Dental caries is one of the most common dental afflictions, but it is by no means the only one. Dental calculus, enamel hypoplasia, periodontal diseases, other dental and oral lesions, dental wear or modification, and antemortem tooth loss are all valid alternatives that can speak a great deal about the health and nutrition of an individual long after their remains have been buried.

Further study of these factors in a similar way as given in this study could potentially provide a great deal of useful comparative information about these past populations.

Both the St. Mary Graces and St. Mary Spital cemeteries contained unique and varied burial populations that displayed a range of dental and skeletal afflictions specific to their individual health, nutrition, and life experiences. Common Londoners buried at St. Mary Graces, though affected by dental caries, had much lower rates of affliction than the poor and

infirm buried at the hospital at St. Mary Spital. These differences are statistically significant and can be used to differentiate between these populations in terms of the diseases and illnesses they suffered during life.

Literature Cited

Cornell B, Jones AG, Redfern R, Walker D. 2012. A Bioarchaeological Study of Medieval Burials on the Site of St. Mary Spital: Excavations at Spitalfield Market, London E1, 1991-2007. London: Museum of London Archaeology.

DeWitte, SN, Bekvalac, J. 2010. Oral Health and Frailty in the Medieval Cemetery of St. Mary Graces. *American Journal of Physical Anthropology*. 142(3):341-354.

Hillson S. 1996. *Dental Anthropology*. Cambridge: Cambridge University Press.

Usher BM. 2000. *A Multivariate Model of Health and Mortality for Paleodemography*. Tripp Cemetery. Dissertation, Pennsylvania State University.

WORD database. Museum of London. Accessed 11/24/2015. (<http://archive.museumoflondon.org.uk/Centre-for-Human-Bioarchaeology/Resources/>)

Appendix A. Frequencies

Statistics			CEMETERY	SEX
N	Valid	Missing	122	122
Mode			0	0
			0	0

SEX				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid MALE	84	68.9	68.9	68.9
Valid FEMALE	38	31.1	31.1	100.0
Total	122	100.0	100.0	

CEMETERY				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid St. Mary Grace s	82	67.2	67.2	67.2
Valid St. Mary Spital	40	32.8	32.8	100.0
Total	122	100.0	100.0	

Statistics				
	N	Valid	MAXILLARY CARIES COUNT	MANDIBULAR CARIES COUNT
		Missing	121	122
			1	0
Mean			3.66	2.84
Median			2.00	1.00
Std. Deviation			4.400	5.288
Range			16	21
Minimum			0	0
Maximum			16	21
Percentiles			1.00	.00
	25		2.00	1.00
	50		2.00	1.00
	75		4.00	5.00

TOTAL INDIVIDUAL CARIES COUNT				
N	Valid	Missing	121	
Mean			0	
Median			7.48	
Std. Deviation			3.00	
Range			9.218	
Minimum			34	
Maximum			1	
Percentiles			35	
	25		2.00	
	50		3.00	
	75		7.25	

TOTAL INDIVIDUAL CARIES COUNT				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	29	23.8	23.8	23.8
2	19	15.6	15.6	39.3
3	15	12.3	12.3	51.6
4	15	12.3	12.3	63.9
5	8	6.6	6.6	70.5
6	5	4.1	4.1	74.6
7	1	.8	.8	75.4
8	2	1.6	1.6	77.0
9	1	.8	.8	77.9
10	1	.8	.8	78.7
16	1	.8	.8	79.5
17	3	2.5	2.8	82.0
18	2	1.6	1.6	83.6
19	1	.8	.8	84.4
20	1	.8	.8	85.2
21	2	1.6	1.6	86.9
22	1	.8	.8	87.7
23	1	.8	.8	88.5
25	1	.8	.8	89.3
26	2	1.6	1.6	91.0
27	2	1.6	1.6	92.6
28	3	2.5	2.5	95.1
29	2	1.6	1.6	96.7
30	2	1.6	1.6	98.4
31	1	.8	.8	99.2
35	1	.8	.8	100.0
Total	122	100.0	100.0	

MAXILLARY CARIES COUNT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	16.4	16.5	16.5
1	31	25.4	25.6	42.1
2	24	19.7	19.8	62.0
3	9	7.4	7.4	69.4
4	9	7.4	7.4	76.9
5	4	3.3	3.3	80.2
6	1	.8	.8	81.0
7	2	1.6	1.7	85.1
8	1	.8	.8	85.5
9	2	1.6	1.7	85.1
10	1	.8	.8	83.5
11	5	4.1	4.1	90.1
12	2	1.6	1.7	91.7
13	1	.8	.8	92.6
14	4	3.3	3.3	95.9
15	3	2.5	2.5	98.3
16	2	1.6	1.7	100.0
Total	121	99.2	100.0	
Missing System	1	.8		
Total	122	100.0		

MANDIBULAR CARIES COUNT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	33	27.0	27.0
1	29	23.8	23.8	50.8
2	22	18.0	18.0	68.9
3	5	4.1	4.1	73.0
4	2	1.6	1.6	74.6
5	3	2.5	2.5	77.0
6	2	1.6	1.6	78.7
7	2	1.6	1.6	80.3
8	1	.8	.8	81.1
10	1	.8	.8	82.0
11	2	1.6	1.6	83.6
12	2	1.6	1.6	85.2
13	4	3.3	3.3	88.5
14	5	4.1	4.1	92.6
15	4	3.3	3.3	95.9
16	3	2.5	2.5	98.4
17	1	.8	.8	99.2
21	1	.8	.8	100.0
Total	122	100.0		

Appendix B: T-Test

Group Statistics

	CEMETERY	N	Mean	Std. Deviation	Std. Error Mean
TOTAL INDIVIDUAL CARIES COUNT	St. Mary Grace's St. Mary Spital	82 40	2.94 16.98	1.809 10.916	.200 1.726

Independent Samples Test

TOTAL INDIVIDUAL CARIES COUNT		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Equal variances assumed	166.257	.000	-11.454	120	.000	-14.134	1.234	-16.577	-11.691	
Equal variances not assumed			-8.135	40.048	.000	-14.134	1.737	-17.645	-10.622	

Appendix C: T-Test

Group Statistics

	CEMETERY	N	Mean	Std. Deviation	Std. Error Mean
MANDIBULAR CARIES COUNT	St. Mary Grace's St. Mary Spital	82 40	1.32 9.03	1.481 6.423	.164 1.016

Independent Samples Test

		t-test for Equality of Means								
		Levene's Test for Equality of Variances								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MANDIBULAR CARIES COUNT	Equal variances assumed	216.402	.000	-10.358	120	.000	-7.708	.744	-9.181	-6.234
	Equal variances not assumed			-7.493	41.037	.000	-7.708	1.029	-9.785	-5.631

Group Statistics

	CEMETERY	N	Mean	Std. Deviation	Std. Error Mean
MAXILLARY CARIES COUNT	St. Mary Grace's St. Mary Spital	81 40	1.54 7.95	1.295 5.286	.144 .836

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MAXILLARY CARIES COUNT	Equal variances assumed	169.648	.000	-10.337	119	.000	-6.407	.620	-7.634	-5.180
	Equal variances not assumed			-7.554	41.327	.000	-6.407	.848	-8.119	-4.694

Appendix D: T-Test

Group Statistics					
	SEX	N	Mean	Std. Deviation	Std. Error Mean
TOTAL INDIVIDUAL CRIES COUNT	MALE	84	6.82	8.777	.958
	FEMALE	38	8.92	10.098	1.638

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
TOTAL INDIVIDUAL CRIES COUNT	Equal variances assumed	4.255	.041	-1.167	120	.246	-2.100	1.800	-5.663 1.463
	Equal variances not assumed			-1.107	63.318	.273	-2.100	1.897	-5.891 1.692

Group Statistics					
	SEX	N	Mean	Std. Deviation	Std. Error Mean
MAXILLARY CRIES COUNT	MALE	84	3.33	4.272	.466
	FEMALE	37	4.41	4.652	.765

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
MAXILLARY CRIES COUNT	Equal variances assumed	1.279	.260	-1.238	119	.218	-1.072	.866	-2.787 .643
	Equal variances not assumed			-1.197	63.893	.236	-1.072	.896	-2.861 .717

Group Statistics					
	SEX	N	Mean	Std. Deviation	Std. Error Mean
MANDIBULAR CRIES COUNT	MALE	84	3.49	5.029	.549
	FEMALE	38	4.63	5.814	.943

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
MANDIBULAR CRIES COUNT	Equal variances assumed	4.821	.030	-1.107	120	.270	-1.143	1.033	-3.189 .902
	Equal variances not assumed			-1.048	63.060	.299	-1.143	1.091	-3.324 1.037



TEXAS  STATE  
UNIVERSITY<sup>®</sup>

*The rising STAR of Texas*

MEMBER THE TEXAS STATE UNIVERSITY SYSTEM