

# Sabiduría



Dear Readers,

We are pleased to present the Spring 2016 edition of *Sabiduría*: The Dr. Floyd F. Koch Honors College Peer-Reviewed Journal. The selection process was rigorous, and the standard was high, but after a long process, we selected six manuscripts worthy of publication. We congratulate **Tanzina Chowdhury, Alexandra Rosas, Paul Lovelady, Raul Muniz, Mahalia Arizain LaFon** on being the selected authors.

We thank the authors who submitted their work and the peer-reviewers for their tireless work in reviewing the submissions. It is the Honors College students who make *Sabiduría* possible by getting involved in the peer-review process.

Our gratitude is also extended to Marcella Montesinos, and Dr. Matt Klauza, for their dedication and support.

As each issue of *Sabiduría* is published, we hope the publication continues to grow, improve, and represent the best that the Honors College has to offer. More importantly, we hope more students take advantage of this opportunity in the future.

Sincerely,

**Erin LaFon, Editor**  
**Fatih Salim, Editor**

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*In keeping with the mission of Palm Beach State College, the purpose of the Dr. Floyd F. Koch Honors College is to provide a challenging and supportive academic environment in which students are encouraged to think critically, demonstrate leadership, and develop ethical standards. The Honors College pursues an interactive learning experience where students acquire a creative and comprehensive understanding of concepts in an interdisciplinary and global context. Palm Beach State Honors students and faculty share a commitment and civic responsibility that extends beyond the classroom to local, national, and international communities.*

## The Influence of Pythagorean Mathematics in the Development of Music

*Tanzina Chowdhury*

The history of music cannot be told without including an account of its ancient Greek founder, Pythagoras (about 580 - 500 BC), who was known as the father of math and music, as he found out the basis of harmony in music lies in mathematical ratios. He started a tradition of using mathematics in representing the natural world. Kitty Ferguson noted that symphony, harmony, and concord were the central part of Pythagorean doctrine (40). He believed that music should never be seen as a form of an entertainment. Rather, it was an expression of the harmony in the divine principles that brings order to chaos (Bennett 195). Focusing on pure, mathematically precise tone, will help to purify and calm and illuminate the mind. He saw the world through mathematical precision and altered humanity ever since he discovered 'The Music of Spheres'. His music was used to heal the body and mind, which was called Harmonic alignments--soul adjustment. Primarily, Pythagoras was a philosopher and a religious teacher who started teaching within a fraternity that was regulated by strict moral and religious rules. The cult of Pythagoras, the Pythagoreans, was superior to any other system known to Greek society. Pythagoreans believed that the study of philosophy must be associated with applied and pure mathematics.

The name of Pythagoras is associated with early astronomy, geometry, music, algebra, and so on. He was a persuasive speaker and a nobleman in his society who was a prophet, statesman, philosopher, and a man of science. He acquired his education from the Ionian school of Samos, the College of Priests at Memphis in Egypt, and scholars in Babylon. His philosophy and teachings included religious philosophy, natural philosophy, belief in metempsychosis, or the immortality of the soul, politics through his political association *hetaireiai*, mysticism, mathematics, music, and astronomy. He started by teaching his cult, the Pythagoreans, which was a religious fraternity with expertise in science, mathematics,

education, social science, and ethics. One of the most important teaching of Pythagoras to his students was expressing the harmony of the universe in terms of numerical relations, which they claimed that everything can be associated with numbers. There were two groups of Pythagoreans: *Akousmatikoi* and *Mathematikoi*. *Mathematikoi*, meaning hearers, were recognized by their pursuit of philosophical, mathematical, and musical theories. As Pythagoras did not write anything by himself, his teachings, discoveries, and most of his works are known to the world from the later Pythagoreans like Philolaus and Nicomachus (Benward and Nadine).

Pythagoras transformed mathematics into the abstract philosophical discipline we see in pure mathematics today (Aczel 11). According to Pythagoras, "all things known have number - for without this, nothing could be thought of or known," which is one of his greatest discoveries on music (Papadopoulos 65). One of the first natural laws that was established mathematically by Pythagoras was the relationship between musical pitch and the length of a vibrating harp string. The earliest Pythagoreans worked on this theory and searched for the meaning of "pleasing" sound that was created by a certain length of string in a lyre. Ancient Greeks were thus able to understand why some lyre and harp make a pleasing sound due to Pythagoras' contribution.

In ancient Greece, music ranked equal in importance to arithmetic (specifically number theory), geometry, and astronomy. As such, these four subjects would become known as the 'quadrivium', the core curriculum every educated person was expected to master (Maor 19). Ancient Greeks and musicians used to think that pleasant music depends on the musician's instinct and skill. Therefore, the use of lyre did not have a lot of variety. It is assumed by historians that different notes were not sung together during that time. Lyre strings were not strummed together to make a chord but the notes sounded pleasing or unpleasant based on the combination of intervals in melodies (Ferguson 63). Again, as there were no use of chords, different pitches were heard at the same time which often created an echo. The human brain and ear has a memory of echo; even after the music is stopped, the various pitch

creates consonance or dissonance. According to the ancient Greeks and Pythagoras, harmony could be heard between pitches sounding in the same time or pitches sounding in succession (Ferguson 63). Pythagoras was able to explain why musicians needed to know the combinations of notes played in order to sound pleasing to the audience with different instruments.

Pythagoras played an instrument that was made of seven strings, called a lyre. He tuned it with four of the seven strings at fixed intervals. These intervals were known as harmony. He made an instrument with one string that was called “Kanon”, which he used to do his experiments on musical notes. He found out the scales of octave, thirds, and fifths by dividing the string in equal parts. Pythagoras’ finding on mathematical ratio of musical notes led him and his followers to think about a hidden pattern of beauty. They thought that there might be an order to everything in the universe and that an underlying pattern brought everything in order, making the universe beautiful (Benward and Nadine).

Pythagoras’ work during the sixth century B.C. is considered to be the origin of mathematics as a pure science. One of his major discoveries was the relation of musical intervals with the ratios of integers. According to Kitty Ferguson in “*The Music of Pythagoras*,” she wrote:

Pythagoras was passing by a brazier’s shop while he noticed that different sounds were produced with the hammer hitting the anvil. He heard the pitch or the musical note produced by a particular hammer depended only on the weight of the hammer and not on the particular place where the hammer hit the anvil, or on the magnitude of the stroke. He also realized that the weight of the different hammers that were producing pleasant sounds were in ratio of simple whole number.

For example, 1:2, 2:3, or 4:5. He tried to recreate these sounds and intervals using several different settings, such as water filled glasses, pipes, vases, and the like. He started further experimenting by building a monochord, which is a wooden box with a single string stretched across it and tried dividing the string at different points by a movable bridge. He discovered that vibrating

strings of different lengths produced a harmonic or pleasing sound when the lengths are in certain ratios. Consonance in this musical sound could be found when the length of the string on the monochord involved the number 1, 2, 3, and 4. This was based on mathematical ratios. He noticed that when two stretched strings were in the ratio 2: 1, it produced the same note an octave apart. Pythagoras postulated that the ratios applicable to the lengths of strings were also applicable to weights hanging on stretched strings (Benward and Nadine). Although he was successful in building a music theory based on these numeric ratios, he never wrote anything himself, however, he passed his ideas to his disciples which were later discussed by Plato. Pythagoras was greatly influenced by Jainism, one of the great oriental cults, who developed mathematics. Before the Jains people did basic accounting and bookkeeping but they never had an abstract or formula. Pythagoras’ teaching was not only similar to the mathematical discoveries but also in codes of conduct, beliefs and practices within the brotherhood. The story of Pythagoras passing by a blacksmith’s shop might have changed over time from how Pythagoras and the Pythagoreans conducted their real experiments, but the fact that Pythagoras discovered the unison between math and music will prevail.

Another experiment on musical ratio that coincided with the theory of Pythagoras was conducted by Hippasus, who was a Pythagorean contemporary. Hippasus made four bronze disks with the same diameter but different thickness and suspended them to swing freely (Ferguson). The thickness of the disks were  $\frac{4}{3}$  of the second,  $\frac{3}{2}$  of the third, and  $\frac{2}{1}$  of the fourth disk. When he struck them, it produced consonant intervals. This experiment proved the physical principle of vibration of an object was directly proportionate to its thickness.

Pythagoras said, “There is geometry in the humming of the strings, there is music in the spacing of the spheres” (Crocker 325). Art, science, and religion were intertwined until the time of industrialization. Pythagoras and the Pythagoreans found a harmony between life and divine cosmos. They called this *harmonia*, which is unity fitting together within a scale higher than

natural instinct (Crocker 327). The Pythagoreans believed that the universe can be quantized because the arrangement of planets followed a musical progression where the ratio of their distance from each other can also be expressed in simple whole numbers. Pythagoras asked questions about the uniformity of the universe and he found out that all matter in the universe vibrates. He went so deep in discovering the unison that it is said that he could hear the music of the spheres (Crocker 335). According to the "Republic" by Plato, the Pythagoreans believed that the planets generated a sound as they moved around the sun along with the stars in the heavens, although people on the earth cannot hear them as their ears are used to the sound. The Pythagoreans also believed that only gifted individual like Pythagoras can hear the sound produced by the celestial bodies. Pythagoras and his followers thought and assumed that the universe is a huge lyre, where each planet is vibrating at a specific pitch in relationships similar to the stopping of the monochord string, harmonizing with other heavenly bodies to create a music of spheres. This concept remained viable for centuries. Pythagoreans thought that the motions of the orbiting planets produced sounds that had musical intervals in mathematical ratios that created such pleasant, harmonic sounds.

Even though the musical theory of Pythagoras was primitive, other Pythagoreans had experimented more on the notes and the scales later and came up with more modernistic musical theories. However, certain concepts remained the same since then as the basis of musical harmony. First, the factors in music that are the speed of vibration and the size of the sound producing body are regulated by a number. For example, modern instruments like bass are tuned to the lowest notes due to their size. Second, sound was said to be produced by the percussion or striking of an object followed by a vibration in the air, which was then received by the ear and connected by the body to the soul. In Plato's words, "the brain and the blood and transmitted to the soul" (Crocker 330). Third, the vibration frequency of a stretched string was inversely proportional to its length. Despite the fact that Pythagoreans had no methods of measuring the vibration of tones and their methods of assigning numerical values could not

be relied on, Pythagoreans laid the foundation for the development of the science of acoustical physics. By assigning mathematical data as a basis of harmonious sound, Pythagoras was going against the persuasion of the time that pleasing harmony was merely a matter of taste and instinct.

Pythagoras's first rule was about the relationship of a vibrating string of a certain length to our perception of its tone (Martinez). It was known that two or more sounds come in harmony when they were in a proportion of integers that were mostly from 1 to 1.67. In an octave, this ratio is 1:2; when the ratio is 2:3, it is called the dominant fifth. When the ratio is 3:5, it is called the major fourth. These are the building blocks of all classical music, and most of the folk, pop, and rock music encountered today. In Pythagoras's rule, the length of the string was called the effective length which actually vibrates. By clamping down the string at different lengths, the "dead zone" was created (Martinez). This perception of Pythagoras's harmony was reflected between all the relationships in the universe.

The second rule of Pythagoras was about the tension of the string. He derived that the tension of a string can be adjusted in a controlled and measurable way by putting different amounts of weight on the string (Martinez). The result of changing a string's tension with different weights was remarkable. If the different tensions were ratios of squares of small whole numbers, sound produced with such tensions or the tones were harmonic. The higher the tension of the string, the higher the pitch was. For example, string musicians tune their instruments by stretching or relaxing the strings prior to a performance, which was similarly done by the Pythagoreans (Riedweg).

The third rule of Pythagoras was the theorem on right angle triangles, which was true for all possible numbers. This was how Euclid stated it: "In all right angle triangles the square on the side subtending the right angle is equal to the squares on the sides containing the right angle" (Maor and Jost 13). This rule of right triangle and the two rules of musical consonance linked together to identify different shape, weight, size, and harmony, representing everything by numbers. The Pythagoreans anchored their worldview to this trinity of discoveries.

Pythagoras did not only contribute to mathematics but to music and philosophy, which later influenced great minds like Plato. Pythagoras' musical rules deserve to be considered as the first quantitative laws of nature ever discovered. His theory of music had three parts to establish the basis of harmony, which was a successful prediction in the early stages of perception. Such successful prediction was correlated with pleasure and beauty, while unsuccessful prediction was correlated with pain and ugliness (Skinner). We can now create and hear harmony more precisely, which was previously not possible, and can bring harmony to remove sources of pain.

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#### About the author -



#### Tanzina Chowdhury

Originally from Bangladesh, Tanzina Chowdhury started college right after migrating to the United States in 2015. She is currently an Honors student in her sophomore year, pursuing her Associates degree with a concentration in Computer Science. Along with her academic achievements, Tanzina enjoys volunteering for organizations like El Sol and the Disability Center. She is the President of 'Dream it, Do it', the Vice President of the Honors Student Advisory Council, an active member of Phi Theta Kappa, and an officer within Student Government. Tanzina was recently awarded the academic and service award, has been named to the president's list, and has been awarded multiple institutional and foundation scholarships. She loves traveling, cooking, and singing.

## The Possible Causes of Autism

*Alexandra Rosas*

Autism Spectrum Disorder (ASD) was introduced to the field of science in 1943 by Leo Kanner ("Leo Kanner Collection", n.d.). Autism is defined by Mayo Clinic as "a serious neurodevelopmental disorder that impairs a child's ability to communicate and interact with others. It also includes restricted repetitive behaviors, interests and activities" (2014). People with autism have difficulty communicating with others, such as expressing thoughts and feelings, inappropriate conversation, and misreading nonverbal gestures. A person who lacks experience with autism may misinterpret an autistic person as rude. The only treatments for autism are therapies which help teach people with autism to communicate and socialize better with others. One out of 68 children are diagnosed with autism. Boys are five times more likely to be diagnosed with autism than a girl ("Autism Spectrum Disorder," 2015). From 1943, when Kanner first identified a child with autism, until now, society has acquired and studied mass amounts of information about autism. Unfortunately, a cause of autism has not yet been found, but there is a possibility that an environmental, genetic, or a combination of both could be the cause. Autism is an epidemic which has appeared in children in all parts of the world, whether there was pollution or a clean environment and in every race, ethnic and socioeconomic group. Although some parents of children with autism reported that after a certain age, the children started to behave differently, and claimed an environmental cause of the disorder. According to many research studies, autism appears to be more of a genetic disorder.

Genes have the information needed to function properly, but when there is something not in order or missing, an abnormality can result in the way a human works. In the case of autism, there are missing connections in parts of the brain which causes children with autism to have problems communicating. Stoner et al. (2014) reported evidence that autism could start during prenatal development. During the second trimester of a

mother's pregnancy, the fetus' brain cells might have traveled to a part of a brain where they did not belong. Because brain cells are not able to connect properly to other parts of the brain, a child develops speech, language, cognitive, and behavior problems. Stoner et al. (2014) described the research:

We obtained 42 fresh-frozen postmortem cortical tissue blocks (1 to 2  $cm^3$ ) from the superior or middle frontal gyrus of dorsolateral prefrontal cortex, posterior superior temporal cortex, or occipital cortex (Brodmann's area 17) from children, 2 to 15 years of age, with autism (case samples) or without autism (control samples). We discovered abnormal expression of genes and gene pathways that govern cell-cycle regulation (and consequently the number of neurons), DNA integrity, cell differentiation, and cortical patterning in the prefrontal cortex in young children with autism. We also discovered that among children between the ages of 2 and 16 years, those with autism, as compared with unaffected children, had abnormally heavy brains and a relative increase of 67% in the overall number of neurons in the prefrontal cortex.

Children with autism have larger brains and more neurons. However, after birth the amount of neurons decreases. There are predispositions that people with autism are born with. As the child grows, parents notice that their child has speech and cognitive problems. "We identified discrete patches of disorganized cortex in the majority of postmortem samples obtained from young autistic children that we examined. These patches occurred in regions mediating the functions that are disturbed in autism: social, emotional, communication, and language functions" (Stoner et al., 2014). This research supports the genetic theory which could cause autism. The results that Stoner et al. (2014) observed were, "Samples obtained from a 9-year-old boy with autism (Patient 20) showed the clearest presentation of a patch phenotype, with reduced expression found across multiple independent markers within a 5.8-mm diameter patch of cortex." The patches showed a clear image of where there was a missing section between brain cells, which could connect

speech and language. Aksgoomoff, Pierce, & Courchesne (2002) explained, "The inferior olivary nuclei (which are developmentally, structurally, and functionally intimately involved with cerebellar Purkinje neurons) were maldeveloped. Neuronal migration errors also appeared in the inferior cerebellar peduncles. In one case, Purkinje neurons were irregularly aligned which cannot be caused by some later postnatal event." Lack of connections in the brain have to be formed during pregnancy and not after birth. These two theories occurred during prenatal development and abnormalities stay the same after the children are born. Children appear to be born normal. The signs of autism do not appear until they are toddlers.

Over the past few decades, one theory was that vaccines caused autism. Parents were concerned that if they vaccinated their child, the child could develop autism. Some parents reported that there was a change in the child's behavior after receiving the vaccine. Researchers thought a vaccination activates autism. However, more research was conducted, and, according to Centers for Disease and Prevention, this additional research showed that vaccines were not the cause of ASD ("Autism Spectrum Disorder," 2015). Babies with autism will have autism regardless, whether they received a vaccine or not.

There are studies that have tried to prove that an environmental cause can cause autism. Philip Landrigan (2010) emphasized "current understanding of the exquisite vulnerability of the developing human brain to toxic exposures in the environment." This theory suggested that any harmful chemical can cause a newborn baby to be autistic. Some environmental chemicals might trigger autism more than others. Landrigan (2010) listed some chemicals which were thought to cause neurodevelopmental disabilities:

Lead, methylmercury, polychlorinated biphenyls (PCBs), arsenic, manganese, organophosphate insecticides, DDT, ethyl alcohol...High production volume chemicals are found in a wide array of consumer goods, cosmetics, medications, motor fuels and building materials. They are common in hazardous waste sites. They are routinely detected in air, food and drinking water.

These chemicals are used to make things in our everyday life. Many people and children are exposed to these chemicals, but it is highly unlikely that those children who encountered these chemicals will become autistic. One example is identical twins which share the exact genes, but later live in different environments. "Rates of autism in identical (or monozygotic) twins were much higher than rates in same-sex fraternal (or dizygotic) twins" ("The autistic spectrum from theory to practice", n.d.). Regardless of how the identical twins' environment and diet are after birth, if one twin is autistic, the other one has a very high chance of being autistic also. This shows that autism is not caused after birth from environment, but is a result of genetic makeup.

According to Landrigan (2010), "proof-of-concept studies that specifically link autism to environmental exposures experienced prenatally." An expecting mother who is exposed to a polluted and toxic environment will create the same environment for her baby in the womb. Autism could have been provoked by environmental causes which could alter a baby's brain functions and connections. During the prenatal stages of a human's life, a fetus is sensitive to any kind of environment. Mothers could have been living in areas highly polluted, and therefore, the baby they are carrying would also be contaminated by the air. This theory, however, does not explain why some mothers are prone to having a child with autism comparing to another mother who lived in the same environment as her, but did not get a child with autism. Also, autism is a world-wide spread epidemic which affects families from various environments.

Other genetic studies explained that autism has a chromosome which determines if the person has autism. Karen Exkorn (2005) noted, "Since boys only inherit one X chromosome from their mother, and girls inherit two X chromosomes from each parent, the hypothesis is that girls carry an imprinted gene from their fathers that may protect them from ASD...they have located the probable region of an autism gene on chromosome 17" (p.76). This explains why boys are more likely to have the disorder than girls. Volkmar Wiesner

(2009) suggested a similar theory in which there is a Fragile X chromosome that causes intellectual language problems. "It is called fragile X syndrome because the X chromosome was noted to sometimes break or be 'fragile' when examined. Because boys have only one X chromosome, they are more likely to have the disorder." The X chromosome theory means that the mother is the one who carries the autism chromosome. If the cause were to be the X chromosome, it would probably be incurable.

A third possible cause is a combination of genetics and environmental factors, which was first suggested by Philpot et al. (n.d), "a temporary exposure to a topoisomerase inhibitor in utero has the potential to have a long-lasting effect on the brain, by affecting critical periods of brain development. Of the more than 300 genes that are linked to autism, nearly 50 were suppressed by Topotecan." This theory suggested that gene changes could be caused by temporary environmental factors, which could eventually cause a baby a neurodevelopmental disorder. Chaste & Leboyer (2012) wrote, "Genetic heterogeneity can be one explanation for the absence of replication of association studies in autism. Epidemiological study on autism that included a comparison group of siblings, 96 unaffected siblings had fewer prenatal and perinatal complications than their affected siblings, but more than control subjects." Some theories are difficult to replicate and test, which is why autism is a complex disorder. An environmental factor could damage genes and cells of a human. Humans and human cells grow to adapt to the environment, and each generation can carry forward or inherit the disorder. An environmental factor, along with a genetic factor, could cause autism if the environmental factor alters the gene.

There is an abundant amount of research looking for an autism cause. Genetics obviously play a big part in all research. Children with autism share similar eccentric characteristics which defines them as autistic. Their behavior is unusual from the rest of their normal peers, but similar to those on the spectrum. The genetic theories explain that there are missing connections in the brain of a person with autism

which occurred caused during a mother's pregnancy. The lack of connections prevents a child from expressing needs (according to social standards) and causes them to be socially awkward. This research explained that brain cells traveled to an area of the brain which did not allow the proper connection. This can explain most of the symptoms of autism. Twin studies are helpful because identical twins are very likely to both be autistic as opposed to fraternal twins. The twin studies back the X chromosome theory, because their genetic component is identical. Therefore, fraternal twins lived in the same environment (womb) but may not share the "autistic" gene. The environmental factor is possibly a part of the cause of autism; however, it is not as important the genetic cause. Environmental factors may be the cause of the autistic genes or detour in brain cells in the first place. All of these causes are possible, but they are not proven.

Figuring out the cause of autism and how autism occurs would open a window for scientists, by informing parents to take certain precautions and look for early autistic traits in their child. Children and adults growing up with autism need to receive treatments and therapies. No two children with autism behave alike but they may have some similarities. Teachers, parents, psychologist, and doctors learn unique behaviors and stories from each family with an autistic member. From cognitive to behavioral, and from equine to surfing, therapies can vary depending on the child's abilities and skills. Children with better resources have a greater chance of receiving better treatments and education at their level. Also, parents who have better resources are able to seek help when they notice abnormal behavior. Some children are misdiagnosed for years and are not getting the proper treatments, which do not allow them to reach their full potential. The younger the child is, the more plasticity they have in their brain which helps them learn and develop successfully. According to many studies, autism appears to have a genetic cause rather than an environmental cause. Understanding the genetic cause would facilitate early treatment for the autistic child.



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## About the Author -



### Alexandra Rosas

Alexandra Rosas will graduate from the Dr. Floyd F. Koch Honors College, at Palm Beach State College, in spring 2016, and will transfer to the University of Miami to continue her education in the field of Psychology. Alexandra served as an officer and as a volunteer in several school and

community organizations. Her passion is to help others, and she created a business to employ young adults with disabilities and help them become more independent after they finish high school. Alexandra plans to earn a Ph.D. in Clinical Psychology and help families with children and young adults with disabilities.

## Female Genital Mutilation: A Practice That Must Be Eradicated

*Paul Lovelady*

In the Bible, man is described as “dominating man, to his injury” (NWT, Eccl. 8: 9). This is especially true in the case of man’s domination of women, which takes many forms; from seemingly “harmless” dress codes, to very serious crimes such as enslavement, verbal, physical or emotional violence, and sexual assault. But the worst form of abuse is surely an ancient ritual known as female genital mutilation (FGM). Those who practice this ritual claim it is morally and physically beneficial to girls and women, but this claim is absurd and impossible to substantiate. Therefore, without documented evidence of medical benefits, the U.N. should issue a worldwide ban on FGM and, more importantly, enforce its eradication.

Female genital mutilation (FGM), also known as female circumcision (FC), and female genital cutting (FGC), is a ritual whose history can be traced back thousands of years. It is practiced in many African, Middle-Eastern and Asian countries, and by migrants from these countries to Western nations. Although FGM has no religious basis, it is unofficially sanctioned by some religious groups as a moral protection for young girls and women. Circumcision deadens a girl’s libido, which is believed to protect a girl’s chastity and, as virginity is still valued in many cultures, this is essential for a girl to be eligible to marry. It is also claimed that circumcised girls are more attractive to their husbands.

According to the World Health Organization (WHO) Reproductive Health Fact Sheet No. 241 (updated February 2013), “FGM comprises all procedures that involve partial or total removal of

the external female genitalia, or other injury to the female genital organs for non-medical reasons.” It is classified into four major types:

**Clitoridectomy:** partial or total removal of the clitoris.

**Excision:** partial or total removal of the clitoris and the labia minora, with or without excision of the labia majora.

**Infibulation:** narrowing of the vaginal opening through the creation of a covering seal. The seal is formed by cutting and repositioning the inner, or outer, labia, with or without removal of the clitoris.

**Other:** all other harmful procedures to the female genitalia for non-medical purposes, e.g. pricking, piercing, incising, scraping and cauterizing the genital area (Reproductive Health Topics).

The same report goes on to say that “Immediate complications can include severe pain, shock, bleeding, bacterial infections, urine retention, open sores in the genital region and injury to nearby genital tissue.” The report does not mention how many girls die from shock, or bleed to death. Serious long term physical and emotional complications are also experienced.

The practice of FGM is largely unknown in Western nations, so in an attempt to gauge public awareness, I conducted an informal survey of one hundred friends, acquaintances and family members living on different continents. Sadly, only two had any knowledge: a female cousin living in Morocco and a female friend from Zimbabwe, yet according to The Female Genital Cutting Education and Network, there are currently at least 29 countries where FGM is still being performed (FGC around the World). These are mostly in Africa, but the practice is also common in parts of the Middle East and Asia. According to several estimates, there are over 140 million survivors extant, and at least three million girls are at risk annually.

FGM is most commonly performed on girls ranging from 5 to 15 years of age, but is increasingly being done to infants in order to hide the procedure from the authorities in the few

countries where the practice has been banned. FGM is not usually performed in a hospital by doctors using sterilized instruments and anesthesia; rather, it is commonly performed in the girl's house by a village woman who cuts the girl's genitals using unsterilized blades or a pair of scissors. Because of the intense pain, many women are required to restrain the girl. They ignore her screams of agony. Why? Because every woman has already been through the ritual and they know that it is "best" for her.

FGM is undoubtedly a barbaric ritual, but should it be banned by the West? Should the West be allowed to practice "cultural imperialism" by imposing its standards on the rest of the world? Should ancient cultural practices be respected, even if those practices are distasteful, or are not fully understood by the wider global community? Is it possible for citizens of Western nations to understand this practice, or to find any positives in it, so that it might be considered acceptable?

In a *New York Times* article titled "A Cutting Tradition," Sara Corbett approaches this very delicate subject in a balanced and sensitive way. When reporting on a "circumcision event" in Bandung, Indonesia, she reflects on the seemingly caring attitudes of the women performing the procedure. Corbett describes the girls as being handed over to a group of women who, "swiftly and yet with apparent affection, remove a small piece of the little girls' genitals." While being sensitive to this traditional ceremony, Corbett does not in any way condone it.

Corbett quotes Lukman Hakim, the chairman of the Assalaam Foundation, which runs several schools and a mosque in Bandung. According to Hakim, there are three benefits to circumcision: "One, it will stabilize her libido. Two, it will make a woman look more beautiful in the eyes of her husband. And three, it will balance her psychology." Corbett then makes the comment that FC in Indonesia is "less extreme" than the kinds practiced in other countries, especially countries in Africa. But does that justify allowing it to continue?

In 2006, *Women's Health* published an article titled "Female Genital Mutilation Can Be a Safe Cultural Rite of Passage," in which Dr. Richard A.

Schweder presents the idea that FGM can be a positive thing. He cites the experience of Fuambai Ahmadu, a young woman from Sierra Leone, who grew up in the United States, but voluntarily returned to Sierra Leone at the age of twenty-two to be circumcised. Schweder relates that on November 18, 1999, he watched Ahmadu present a paper at a meeting of the American Anthropological Association in Chicago, in which she said that the oft-repeated "claims regarding adverse effects [of female circumcision] on women's sexuality do not tally with the experiences of most Kono women," including her own (Ahmadu). In fact, according to Ahmadu, most Kono women approve of the practice and even feel "empowered" by it.

Schweder goes on to say that in Kenya, where circumcision is commonplace, the adolescent girls look forward to it as a rite of passage into womanhood. He says that African parents love their children; they do not want to hurt them. They feel they are doing the best for their daughters, and the event is celebrated.

Schweder accuses Americans of taking the moral high-ground concerning FGM, without having considered all the facts. But, if he considers himself to be in full possession of the facts, one has to wonder if he would allow any of his female relatives to undergo this "rite of passage."

Soraya Miré is a Somali woman who does not share Schweder or Ahmadu's upbeat view of FGM. She was an unwilling victim and is now a spokeswoman against it. She wrote, directed and produced *Fire Eyes*, a hard-hitting film about FGM (after which she received death threats). In 2011, she published the book "*The Girl with Three Legs: A Memoir*," in which she chronicles her experiences.

Miré grew up in a relatively wealthy family, and her childhood was full of excitement, joy, and beauty. That is, until she was thirteen, when her mother gave her her "gift." What follows is a harrowing description of her infibulation. From that day forward she had nightmares, and suffered from depression and stomach cramps due to menstrual problems. A few years later, she was taken to Europe and forced to marry an abusive

cousin. His “wedding gift” was her virginity, as evidenced by the scar tissue covering her vagina. His repeated attempts at intercourse were painful and unsuccessful, as he could not break through the scar tissue. Miré was still a virgin when she ran away from his violence.

Miré goes on to relate that later, while in New York interviewing some Somali men for her film *Fire Eyes*, one of the men said regarding his woman, “While she’s my property, she is private.” “Circumcision has been with us for such a long time,” said the second, “what amazes me is that women, like you, have begun to complain and refuse the continuation of this practice.” Finally, the third man said, “I only want a woman who’s stitched. I want the pain and suffering of women to continue” (310-311). These vile expressions demonstrate how ingrained FGM is in the male psyche of certain cultures.

“*Cutting the Rose. Female Genital Mutilation: The Practice and its Prevention*” by Efua Dorkenoo contains descriptions of the procedures along with diagrams, and a photograph of an infibulated vagina. She discusses the practice, the wider issues, some case studies, international initiatives, and proposals for the future. Interestingly, she also mentions how FGM affects men. She describes the difficulty and pain associated with intercourse after infibulation, (because the penis has to break through the scar tissue, or it has to be cut away) and the sexual dysfunction that often results for both husband and wife. If a woman tries to speak to her family or someone in the community about her sexual difficulties, or decides to seek professional help, she risks being shunned by them. So no one speaks about it (23-24).

“But,” one might ask, “is FGM not just a ‘Third-World’ problem?” The grim reality is that many “at-risk” girls live quietly in American towns and cities, perhaps attending school with you or your children, but even here they are not safe. Many of these girls are in danger of being taken overseas to undergo what has been termed “vacation cutting.”

A similar problem exists in Europe and elsewhere. In 2010, *The Guardian* newspaper published a video interview on their website,

titled “*Summer holiday circumcision: girls’ bodies at risk*,” which exposes the problem of vacation cutting in the UK (where FGM has been illegal since 1985). Two young girls from London, “Jamilia” and “Miriam,” who had been taken back to Somalia during the school summer vacation are interviewed. They describe their experiences at the hands of the “cutter,” and their on-going physical and emotional problems. The report goes on to say that, because of recent financial difficulties, many families cannot afford to travel back to Africa, so they pool their resources in order to pay for a “cutter” to travel to the UK, so that large numbers of girls can be cut at the same time (Summer Holiday Circumcision).

In response to growing international pressure, on December 21, 2012, the United Nations passed an “historic” resolution calling on countries to eliminate FGM (Ban Welcomes UN). Despite the resolution, only a few nations have enacted laws banning FGM and, even in those countries where the practice has been “banned,” it continues unabated. For some reason, the U.N. is not enforcing the resolution, and the penalties are derisory, so change will come very slowly, if at all. As is often the case, the U.N. is like a toothless lion: able to roar, but powerless to effect any real change.

FGM is child abuse, and a crime against all women -- not just those who are mutilated. It is clearly a human rights issue, and those who practice it, or seek to justify it, are a disgrace to society. The victims’ physical scars may heal with time, but the mental and emotional scars will remain forever. Despite the fervent protestations of those societies who practice FGM, there is no evidence of any medical or psychological benefits. In fact, there is a large body of evidence to the contrary.

So is there anything that can be done about this blight? In the short term, probably very little, but concerned citizens should write to the U.N. Secretary General demanding that this barbaric practice be completely eradicated. Those nations who do not demonstrate immediate compliance with the resolution should be subject to economic sanctions and expulsion from the U.N. Compliance with a total worldwide ban should be closely monitored by the U.N., the Red Cross and Red

Crescent, Médecins Sans Frontières (Doctors without Borders), and other NGOs.

Female Genital Mutilation is a barbaric practice that offers absolutely no benefits to the victims; it causes only pain and suffering. It must be eradicated within our lifetime. If you care about the rights of women and children, get involved and do your part!

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After graduating from PBSC, Paul intends to transfer to Florida Atlantic University where he will pursue a Bachelor's in Education followed by a Master's in TESOL. He plans to travel the world teaching English.

## Civil Disobedience Regarding Unjust Laws

### Raul Muniz

Since the inception of humanity, there have been just and unjust laws. Cultures in society determine the values of right and wrong. The role of government is to establish laws that represent what the population perceives as a right, or a rule that must be abided by. However, there have been moments in history where governments fail in fulfilling this duty. Therefore, civil disobedience is necessary to eliminate unjust laws, to create a fair justice system, and to establish laws that are upheld by the Constitution.

The *Britannica Concise Encyclopedia* defines civil disobedience as “refusal to obey government or commands and nonresistance to consequent arrest and punishment” (“Civil Disobedience,” *Britannica Concise Encyclopedia*, para 1). This action occurs when a group of people believe a law established by the government is unjust, therefore, justifying the reason for breaking it. With that being said, breaking the law and taking full responsibility for any type of punishment will be considered as civil disobedience. Civil disobedience can only be effective when citizens approach the issue at hand correctly. A rational plan must be formulated to eliminate an unjust law. This rational plan is necessary when the government fails to help fix an unjust law, causing citizens to turn to civil disobedience “where all other means of remedy have been exhausted” (“Civil Disobedience,” *Bloomsbury Guide to Human Thought*, para 2).

To begin, many members of society try to be courteous and take a legal approach when dealing with unjust laws. However, as stated before, when the government fails to take full responsibility, peaceful civil disobedience becomes the next necessary step. The complexity of what is considered an unjust law has been an argument of when and where civil disobedience is considered moral. David Lyons, a Boston University Law Professor, explains the complexity of theorists’ view of when civil disobedience is morally allowed:

Theorists might think they have a reason for placing special emphasis on disobedience to law. They might believe there is a general obligation to obey the law but no general obligation to comply with social norms that are not backed by law... Disobedience must be justified, but not easily. (para 8).

The Civil Rights movement, led by Dr. Martin Luther King, Jr., is the perfect example of when civil disobedience is justified and why it is necessary to eliminate an unjust law. Dr. King’s campaign to end segregation caught national attention when police attacked nonviolent protestors in Birmingham, Alabama, where King was later jailed for leading the protest (“King,” *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*, para 2). Due to the

protest receiving national attention and shocking viewers of the hypocrisy of American government, it has been considered a successful event which led to the evolution of the abolishment of Jim Crow laws. Muirhead, an Associate Professor of Government at Harvard University also considers this incident a successful one. Even though it led to King’s wrongful arrest, “Martin Luther King, in some sense wanted thousands of protesters to go to jail since this would bring publicity to the protest” (para 3). When King and other protesters were jailed and abused by higher authority, the movement achieved three of the main goals of civil disobedience: to bring national attention to an issue, prove wrong the established law and give less power to government while representing the disobedient in a positive manner (“Civil Disobedience,” *Bloomsbury Guide to Human Thought*, para 1). Only through civil action were the protesters able to make a significant impact while making a bold statement requesting equality.

The Civil Rights Movement in America is considered successful because it spread awareness throughout the entire United States about Jim Crow laws and racial segregation. It proved that the laws were immoral, it put pressure on the government to act, and it portrayed the protesters as innocent due to their peaceful approach. Peaceful demonstrations led to the abolishment of Jim Crow and racial segregation in the South. Civil disobedience is acted out peacefully to let government officials as well as law enforcement know laws established by the government are immoral, which can lead to the destruction of an unjust law. In order for this destruction of a law to occur, civil disobedience is necessary to bring the needed attention to the public and overwhelmingly prove the immoral aspects of a law.

Furthermore, civil disobedience is necessary to create a fair justice system because it peacefully demands for society to be represented by the majority and minority. Civil disobedience makes the government aware of the concerns of citizens and creates a need for understanding or for voices to be heard. Once again, David Lyons of Boston University continues to explain the conditions of an unjust law and what could happen if an unjust

law is enforced: “It is not a moral obligation to fight against an unjust law but it is the duty of citizens to make sure the government does not enforce these unjust laws, potentially destroying a fair justice system” (Lyons para 2). When an unjust law is enforced with insignificant pressure coming from citizens, it allows the government to attain too much power: power to become corrupt and manipulate others. A fair justice system can be considered as a very broad term -- however, one must take a look at the duty of laws, government, and their role in a justice system. The law’s goal is to “set norms and standards of behavior” (Viens para 1). It is important to state that these laws cannot favor one group of people over the other; a law of this type would be considered unfair because it does not represent citizens equally. In addition, the government’s role is to evaluate laws to determine what is moral according to society (Nagel para 100). This is where citizens’ involvement in government is essential. If citizens can express the concerns and demand society to become more equal, a fair justice system will become more likely attainable. Each act of law must be evaluated to determine if it is considered a just law - one that is to be of a fair justice system (“Justice” para 4). A fair justice system is one where there is “Personal and social harmony” represented by the citizen population (“Justice” para 4). This is where society, culture, religion and moral values take a very important part of establishing laws to create a fair justice system.

For example, when dealing with civil rights, Mahatma Gandhi’s campaign to end racism had three aspects with the purpose of creating a fair justice society: “Persuasion,” “suffering,” and “nonviolent measures” (“Civil Disobedience” para 3). Clearly, the first goal is to convince the government of the effects that specific laws are having on the government’s justice system. It has to be shown that the government is making others suffer in a way that should not be allowed. Lastly, the emphasis on nonviolence is essential because it creates a demand that the government could not consider as harmful or inconsiderable. There are different aspects to a fair justice system, but it mostly has to do with whether or not all different groups are being represented equally. When the minority or any group of constituents feels like

they are not being treated fairly under the law, civil disobedience allows citizens to peacefully demand for equal representation.

Civil disobedience is necessary to establish laws that are upheld by the Constitution. The Founding Fathers of the United States created the Constitution to protect the unalienable rights of United States’ citizens. However, in the nation’s past, there has been hypocrisy and complete disregard towards slaves and other minority groups. For example, the Founding Fathers believed that every human is equal, which gave them unalienable rights that could not be taken away by the government. With that being said, slavery was still permitted and women were not able to vote. These are two examples of unjust laws in society which have caused harmful effects even in today’s society. Dr. Martin Luther King, Jr. intentionally broke specific laws because he believed in the philosophy of a “Moral Law” (McLaughlin). Dr. King, being a Christian minister, believed as long as he was not directly harming a person, it was his right to stand up and protest for the rights of Black America. He was not like his counterpart, Malcolm X, an extremist, who believed in doing anything necessary to achieve Constitutional rights, including using violence. Dr. King knew these unjust laws contradicted the Constitution of the United States, therefore making his actions justified. Being arrested for giving a speech to a crowd, he knew he had the First Amendment right to petition and freely express his views and opinions on Civil Rights. Dr. Cary High, the Director of Paralegal studies at Palm Beach State College, acknowledges this struggle of “equal representation under the law once the Constitution is violated” (Interview Dr. High). Once a law contradicts the Constitution, civil disobedience is necessary to make sure it is upheld in society.

In addition, King understood the Constitution was derived from the concept of natural law or “fundamental moral principles” (“Natural Law”). These principles are “derived from nature and the teachings of God” (“The Natural Law Is the Foundation of Human Law:” para 2), which has led the United States to base its laws around the Ten Commandments of the Bible and other Judeo-Christian principles. Religion has played a huge

role in what is considered moral and immoral therefore legal and illegal. However, the core of the Constitution provides that no man made law should disable natural rights given by the document ("The Natural Law Is the Foundation of Human Law:" para 2). Therefore, justifying any law or act that would take away natural rights given to humans would be violating the Constitution of the United States. In this scenario, if any law takes away the natural rights of citizens, civil disobedience must be acted out to demand the Constitution is upheld. One way that civil disobedience is justified is by whether or not it is in accordance with the Constitution, where the citizens can overrule the government.

As stated earlier, civil disobedience places a demand on the government to act. When a large amount of citizens come together and peacefully resist the restraints that a law has placed, especially when a law violates the Constitution of the United States, it makes the government act or react specifically. Aldo Beltrano, a business attorney in Florida, states "the power of numbers is an essential aspect of civil disobedience because it establishes credibility" ("Unjust Laws - Aldo Beltrano"). Once civil disobedience is successful, the government can then adjust the law to make sure it is in accordance with the Constitution and does not violate a citizen's right. In a democracy, civil disobedience is critical because it makes the government accountable and makes sure the Constitution is being upheld.

As a final word, civil disobedience has played an essential role in democratic governments. Civil disobedience has allowed citizens to create change for the greater good and ensure their human and civil rights have not been violated. If a law is unjust according to moral values or violates a country's constitution, civil disobedience creates a path for constituents to take action. If a government fails to fulfill its duty of protecting the rights of citizens and create a sustainable society, then peaceful civil disobedience is an effective approach to eliminate an unjust law, create a fair justice system, and to establish laws that are upheld by the Constitution.

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Raul Muniz will graduate from the Dr. Floyd F. Koch Honors College in Fall 2016. An amateur boxer, Raul will turn professional after seeking his degree in Political Science and aspires to eventually graduate from law school.

## Anti-Immigrant Sentiments in America

### *Mahalia Ariza*

"Welcome to the United States of America" are the words all immigrants wish to hear as soon as they arrive in the land of opportunity. Immigrants are no different from anyone else; they usually come from a lot of poverty and work very hard to create a better life and future for themselves and their families. Many Americans see immigration as a problem, not realizing that many countries have been built on immigration. Numerous unfounded

attitudes have led to growing anti-immigrant sentiments that are causing far more harm than good in America.

Several of these attitudes are created by influential leaders and a misinformed public who further influence the next generation's thinking toward immigrants. Politicians and media records have only stimulated this environment by spreading incorrect information that blames immigrants for our nation's problems and by passing discriminatory laws that defame them according to the Southern Poverty Law Center. Immigration should be dealt with by examining the facts so that Americans can inform themselves before generating negative feelings. Three main reasons drive anti-immigrant sentiments in America: that immigrants divide the country, that immigrants hurt the economy, and that immigrants break the law.

Many fear that immigration will divide the country, especially when they hear Florida being called Little Havana because of Cuban immigrants in Miami, or when California is described as a little Mexico because of all the Mexican immigrants. However, immigration should not create fear among Americans. People who are Hispanic, European, Asian, African or a Pacific Islander, just to name a few, and immigrate to the U.S. are not any less American than someone who was born on American soil. Many immigrants—legal or illegal—live in this great country and work very hard every day to provide for themselves, their families, and other fellow Americans by providing their services to them. What creates division is America's misinformed mentality that is closed minded, not the immigrants who essentially contribute to the health of America.

Generalizing is never a good idea. It usually means that a person judges someone else by actions from the larger "group" to which that person belongs. In his essay "E Pluribus Unum: Immigration, Race and Other Deep Divides," Stephen Legomsky declares that the U.S. is not the only country accepting immigrants and refugees, noting that by worldwide standards the U.S. is still considered to have a liberal immigration policy. Legomsky also mentions that as immigrants "We celebrate our immigrant ancestry. We are proud

of it. It is a part of our emotional, and even our spiritual, makeup” (106). What Legomsky states is very true because every country on all seven continents has been built on immigration. This is something Americans have to welcome with open arms, because, if it were not for immigration, many Americans would not know life as it is experienced today. Celebrating other cultures has been a feature of American life for many years. For example, the Hispanic heritage is widely celebrated from September 15<sup>th</sup> to October 15<sup>th</sup>, which is better known as the Hispanic Heritage month. Stereotyping many of America’s diverse cultures creates an unwarranted hatred that is at war with America’s foundational values.

Many Americans are now against bullying because of recent media attention to the matter, but why are Americans not equally against anti-immigrant hate groups? According to the Southern Poverty Law Center, in general there were 784 active hate groups in 2014 in the United States which demonstrates that there are indeed hundreds of nativist groups that have emerged since the late 1990’s in America. This has created anti-immigration xenophobia that has risen to levels not seen in the U.S. since the 1920s because the anti-immigrant hate groups are the most extreme. The top three states with the highest amounts of hate groups are California with 57 groups, Florida with 50 groups, and New York with 44 groups. These statistics make perfect sense, because it is to these states that immigrants immigrate the most. In the period between 1995 and 2012, 3,979 of the hate crimes reported per year were race incidents; 951 were caused by ethnicity/national origin according to the FBI uniform crime reports (Federal Bureau of Investigation).

These numbers should make people think. Do we not realize that telling someone to “go kill yourself, nobody loves you anyway” and attacking an immigrant on the streets just because one is angry that he or she was not born in America or that he or she is undocumented are equally wrong? What makes one an American is not that one was born in America. It is that one is kind to anyone and everyone in the United States. It is that one pays taxes—whatever kind it might be. It is that one abides by the law. It is that one helps the

community in any way possible. In short, it is being a good citizen of the United States that makes one an American. After all, everyone that has ever immigrated to a country, whether it be the United States or somewhere else, has done so because he or she saw a light offering many possibilities in that country that could not be obtained in his or her own country. Our current President stated the following in his national address:

My fellow Americans, we are and always will be a nation of immigrants. We were strangers once, too. And whether our forebears were strangers who crossed the Atlantic, or the Pacific, or the Rio Grande, we are here only because this country welcomed them in, and taught them that to be an American is about something more than what we look like, or what our last names are, or how we worship. What makes us Americans is our shared commitment to an ideal - that all of us are created equal, and all of us have the chance to make of our lives what we will. That’s the country our parents and grandparents and generations before them built for us. That’s the tradition we must uphold. That’s the legacy we must leave for those who are yet to come.

Obama understands this issue better than anyone. He himself comes from generations of immigration, and when running for the presidency, many held that against him. However, he did not let that break him. He kept fighting for what he believed in and that is what brought him to where he is today, a second term of presidency of the United States of America.

Another contributing factor to anti-immigrant sentiment is the view that immigrants are limiting job opportunities in America. Many Americans are quick to judge immigrants, pointing fingers at them for allegedly taking away their jobs. However, as the Southern Poverty Law Center points out, “What Americans do not realize is that immigrants perform some of the hardest, most dangerous jobs in our economy -- for the least amount of pay. But they’re routinely denied basic protections in the workplace.” Luckily, institutions like Southern Poverty Law Center (SPL) exist to fight against injustice towards immigrants and other groups. Right now they are working to

help immigrant children gain access to quality education across the Deep South. This should not be a privilege. Every child, whether an immigrant or not, should be entitled to quality education because no matter where these children come from, they are our future. Also, when vicious anti-immigrant laws were passed across the Southeast, SPL and other civil rights organizations successfully fought them in multiple states. Their lawsuit, for example, gutted Alabama's law. According to an article written by David Wiegel (a national political correspondent covering the 2016 election and ideological movements) on *The Washington Post*, the law was passed in 2011 by a new Republican legislature and governor. They enacted HB56—the Alabama Taxpayer and Citizen Protection Act. The undocumented people were warned by chief sponsor, Micky Hammon, that he would “make it difficult for them to live here, so they will deport themselves.” This law made renting a house or giving a job to an “illegal” a crime. The police were also authorized to demand proof of citizenship from anyone who looked like they did not possess it. This could be compared to how the police dealt with the Jews during World War II when they were just walking around without a star and had to show an ID to prove they were not Jews. Even school administrators were instructed to ask children for documentation, which is why the law was widely considered to be the harshest in the nation (Wiegel, n.d.). SPL has successfully fought for immigrant workers that were cheated out of wages as they helped the people of New Orleans clean and rebuild their city after Hurricane Katrina had hit. This organization has also won justice for immigrant workers from India who were deceived and exploited in a labor trafficking scheme. The SPL has also uncovered the unsafe and exploitive conditions within the poultry industry, which relies on immigrant workers, blocking changes within this industry that would have worsened conditions for these immigrants.

Steven A. Camarota and Karen Zeigler wrote a piece for Center for Immigration studies in which they state that another thing that many Americans might not realize is that the American economy is dynamic. The fact that Americans forget about this helps create the fear of losing their jobs to immigrants. It is, therefore, a mistake to think

that every job taken by an immigrant is a job lost by a native. In *The New York Times*, David Kallick explains that the number of jobs held by U.S-born workers between the ages of 25 and 54 are declining because most of them are retiring. The numbers went down by 1.9 million between 2007 and 2014, yet thanks to immigrants the job market did not experience a great downfall because 1.7 million immigrant workers were qualified and able to fill those positions. It is also good to keep in mind that immigrants are both employers and employees and they frequently contribute to the economic growth locally (Dyssegaard Kallick, *New York Times*, 2015). In addition, the report “*Bringing Vitality to Main Street: How Immigrant Small Businesses Help Local Economies Grow*,” written by David Dyssegaard Kallick, takes an in-depth qualitative look at immigrants as small business owners, the economic growth, and neighborhood revitalization in three specific areas of the United States. For example, in Philadelphia and the Twin Cities, immigrant businesses have played a substantial role in reversing decades of population decline and helped restore a commercial base for neighborhoods that needed an economic boost. Another example is seen in Nashville, where the constant growth in population helped immigrants transform neighborhoods and sustained the economic revitalization enjoyed by the city as a whole (Dyssegaard Kallick, *Americas Society Council of the Americas*, 2015).

Furthermore, accepting immigrants into our states and cities is most likely to be one of the best decisions taken. In *Infographic: Immigration and the Economy*, Rachel Glickhouse for Americas Society Council of the Americas states a few facts that will open many American's eyes on the “immigrants hurt the economy” issues. Glickhouse states that immigrants started 28 percent of all U.S. businesses in 2011, which granted employment to 1 in 10 U.S. workers. She adds that immigrants founded 18 percent of 2010 Fortune 500 companies which created jobs for 3.6 million people. She also states that for every 1,000 immigrants living in a county, 46 manufacturing jobs are created or preserved that would otherwise not exist or would have moved away.

Regarding taxes, many Americans are quick to say that immigrants do not pay their share of taxes. However, Glickhouse points out that on average, immigrants pay 1,800 dollars more in taxes than they receive in benefits. She also writes that households headed by undocumented immigrants paid 11.2 billion dollars in state and local taxes in 2010 alone, making it clear that if undocumented immigrants had been granted legal status and citizenship in 2013, over the next 10 years their tax contribution would have been 184 billion dollars in revenue, which is a significant amount. The misconception about immigrants hurting the American economy is immediately put to rest thanks to the facts and numbers given by Glickhouse. This information shows that accepting immigrants and granting them status in the U.S. actually helps the American economy and does not hurt it.

With the presidential elections coming up next year, the candidates have been campaigning for several months now. It is no secret that immigration is a very important topic when campaigning. One of the presidential candidates, Mr. Donald Trump, has been very open about his beliefs concerning immigrants in America. One would think that because his current wife, Melania Trump, originally from Slovenia, and one of his former wives, Ivana Trump, originally from Czech Republic, were both immigrants, he would approve of the immigration reform and would actually want to help immigrants. However, Trump has not held back on his anti-immigration beliefs and his plan for immigration reform, publicly stating that he wants to build a wall across the southern American border and make Mexico pay for it because “A nation without borders is not a nation” (“Immigration Reform That Will Make America Great Again”). He added that when Mexico sends their people, they are not sending their best people but people that have “lots of problems,” who bring drugs and crime into the United States and even commit rape. Then he tries to make it better by saying, “and some I assume are good people” (CNN). With this statement, Trump shows anti-immigrant sentiments by making assumptions and generalizing. Mexicans are known for crossing the border illegally, but that does not mean that they are not good people. Furthermore, according to Josh Sanburn, a study by Pew Research

shows that in the years from 2009 to 2014 America had a net loss of 140,000 Mexican immigrants. This data is based on Mexican survey data and U.S. census data (Sanburn, 2015). Moreover, this speech given by Trump also shows his anger towards illegal immigration.

These are not the only things Trump has been saying about immigrants. With the Syrian refugee crisis growing, he tweeted on November 19, 2015: “Eight Syrians were just caught on the southern border trying to get into the U.S. ISIS maybe? I told you so. WE NEED A BIG AND BEAUTIFUL WALL!” This tweet about the refugees also shows Trumps prejudice against immigrants. After Trump made this hateful remark, several major brands, companies, and broadcast platforms cut ties with him, stating that they do not agree with Trump’s views on the immigrant issues. Macy’s was among the first ones to “dump Trump” after a petition was signed with almost 700,000 votes. After making this big decision, Macy’s released a statement to MJ Lee for *CNN* saying, “We are disappointed and distressed by recent remarks about immigrants from Mexico. We do not believe the disparaging characterizations portray an accurate picture of the many Mexicans, Mexican Americans and Latinos who have made so many valuable contributions to the success of our nation.” Macy’s called Donald Trump’s statements and beliefs regarding this issue “inconsistent with Macy’s values” (Lee, 2015). *NBC* and *Univision* are also among the ones that broke ties with Donald Trump. They refused to broadcast the Miss Universe/Miss U.S.A. pageant of which Trump owns half of the organization.

On the other hand, our current president Mir. Barack Obama wants to give the illegal immigrants a chance to get good with the law. In his address to the nation on immigration, Obama explained his deal to the illegal/undocumented immigrants, stating, “If you’ve been in America for more than five years; if you have children who are American citizens or legal residents; if you register, pass a criminal background check, and you’re willing to pay your fair share of taxes – you’ll be able to apply to stay in this country temporarily without fear of deportation. You can come out of the shadows and get right with the law. That’s what this deal is.” This shows that instead of promising America something impossible – deporting all illegal immigrants – the Obama administration

wants to give these immigrants an opportunity. It shows that Obama understands these immigrants, knowing that they are hard workers rather than having hateful feelings towards them because they entered the U.S. illegally. Yet, because most representatives are against immigration, Congress did not pass the bill which in turn means that Obama's plan was not passed as a law. Seung Min Kim, a writer for *Politico*, explains that Jeff Sessions, a very conservative Alabaman, is one of the senators who makes his views against Obama's plan and against immigration very clear. Sessions is in contact with U.S. born workers who have lost their jobs to immigrants and thus he wants to hold oversight hearings on H-1B visas. Earlier this year, however, Senator Orrin Hatch, a Republican from Utah, introduced the so-called Immigration Innovation – or "I-Squared" – which would increase the number of H-1B visas issued each year to as high as 195,000. Currently, the H-1B limit is set at 65,000 annually, though an extra 20,000 visas are set aside for immigrants with a master's degree or higher from a U.S. school. The measure is supported by a handful of Senate Democrats and key Republicans, including Senators Marco Rubio of Florida (who comes from immigrant parents), John McCain of Arizona, and Jeff Flake of Arizona. Additionally, he writes, "Sessions has long been a critic not just of legalizing undocumented immigrants but also of allowing more immigrants into the United States at all" (Kim, 2015). Sessions is a former federal prosecutor and Alabama attorney general who has gravitated to immigration issues since he arrived in Congress in 1997. What used to be just an interest grew to an obsession in 2006 and 2007 when Sessions helped destroy comprehensive reform in the Senate during George W. Bush's presidency. Ever since, he has been working to stop immigration concepts from the left and right.

If we look at our government and do background checks on everyone, we will realize that even our government consists of immigrants or people who come from immigrant families even if they themselves were born in the United States. Immigrants are found from our president's heritage to the heritage of even senators. The truth is that the U.S. constitution does not discriminate against any race or nationality. According to the White House, the Constitution

states that members of the House should be a U.S. citizen for at least seven years which demonstrates that to run for a position in the House, a person needs only U.S citizenship (this means the person running for office could also be an immigrant) and the same goes for members of the Senate. The Constitution also states that to run for the presidency, one must have been born in the U.S. (this means that one's parents could have been immigrants) and must have lived at least fourteen years in the United States.

Many have observed how amusing it is to see Americans discriminate against immigrants yet they vote for these immigrants to represent them in the U.S. government. Moreover, the American people are not well informed because of the media, parental influence, education, and culture. It is easy to just take someone's word instead of doing one's own research, a sad approach which has helped create a world that is full of hate today. Anti-immigrant feelings arise because we generalize, because we do not inform ourselves well enough, and because our leaders instigate hate by misinforming the country. We need to open our eyes and realize that immigrants are just as human as we are. Americans need to realize that immigration is very natural and that every country deals with it instead of looking at the downside of it. Americans need to look at the bright side of immigration and understand that in reality immigrants contribute in many significant ways to the American community.

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## Colony Collapse Disorder: The Demise of Bees

### Erin LaFon

Many people eat fruits and vegetables on a daily basis, but what most do not know is that without bees, these foods will no longer be readily available for the human population to consume. According to *Vanishing of the Bees*, one out of every three bites of food has been placed on our table due to the pollination of honey bees. Pollination is dependent on the wind and insects. Honey bees are pollinators, meaning they transfer pollen from a stamen to a pistil to start the production of seeds. A bee colony helps pollinate approximately 132 varieties of wild plants, fruits,

and vegetable trees each year. If people want a diet that is more than wheat, oats, corn, rice, and pork, preserving this insect will allow for a wider variety of choices among the food groups. A single honey bee can visit more than one hundred thousand plants each day. Some crops include onion, strawberry, lemon, cucumber, cocoa, and apple. People will also lose many dairy products due to loss of nutrients cows need to produce milk. Without these crops the economy will decline and many people will not have jobs; farmers, landscapers, and many biologists will be laid off.

Between 2006 and 2007, the United States experienced large losses of managed honey bee colonies; these losses are not new to beekeepers:

In fall of 2006, some beekeepers in the US reported losing 30-90% of their colonies and the symptoms associated with the dead colonies did not match those produced by known bee pests/pathogens. Although annual losses above 30% are not uncommon for beekeepers in the US, the number of beekeepers reporting elevated losses appeared alarming as did the unique symptoms associated with the colony losses. Consequently, the apiculture community in the U.S. called the new phenomenon of elevated colony losses “Colony Collapse Disorder” or CCD. (James Ellis)

David Hackenberg was the first person to show scientists the bees were disappearing. “The scientists studied colonies that were suspected to have the symptoms of CCD which are: failing colonies that have no dead bees, no mites or pathogens to explain the phenomenon, and hives where only the queen and the babies remain after the worker bees, guard bees, and nurse bees have abandoned them. Bret Adey, the world’s largest beekeeper, lost forty-thousand hives in a matter of weeks. Forty-thousand hives is approximately two billion honey bees” (Vanishing of the Bees).

Colony Collapse Disorder has been documented in thirty-five states, including California and Florida. According to *Colony Collapse Disorder: A Descriptive Study*:

Since 1869, there have been at least 18 discrete episodes of unusually high colony

mortality documented internationally. There have been many suspected causes of Colony Collapse Disorder; however, little or no evidence or data has been presented. Some of these theories include: pathogens, micro-parasites, pesticides, and genetics (vanEngelsdorp).

Without honey bees to pollinate there will be less global biodiversity. Global biodiversity is the measure of the variety of life in the world in a habitat or ecosystem. According to *Global Pollinator Declines*, pollinators are a key component of global biodiversity, providing vital ecosystem services to crops and wild plants. Honey bees promote ecosystem vitality through services that provide pollination and help maintain genetic diversity by enabling reproduction of a wide variety of plant species. Biodiversity is important in an ecological system because it allows for natural selection and competition among different plant species, reducing the risk of diseases. Honey bees provide services that support a large range of ecosystems, while also indicating the health of the environment around them. They are able to show the condition of the environment and serve as indicators for contamination. The significant decline of honey bees suggests that there is an imbalance in the environment that needs to be addressed. This is important to humans because, similar to honey bees, people require a healthy environment to remain viable.

Each year beekeepers lose about 30% of hives. Pollinator declines will result in loss of pollination services, which have important negative ecological and economic impacts that could significantly affect the maintenance of wild plant diversity, wider ecosystem stability, crop production, food security, and human welfare. Honey bee loss will impact two groups of pollinator-dependent flowering plants: wild flowers and cultivated crops. According to *Global Pollinator Declines: Trends, Impacts, and Drivers*:

The decline in pollinator diversity and abundance can bring with it a decline in pollination services for wild plant populations, potentially affecting populations of animal-pollinated plants. Most wild plant species (80%) are directly dependent on insect pollination for fruit and seed set, and many (62-73%) of the plant

populations investigated showed pollination limitation. Local extinction of the super generalist honeybee as a result of disease is not unlikely and could lead to considerable species loss of plants. Insect pollination, mostly by bees, is necessary for 75% of all crops that are used directly for human food worldwide. Fruit crops are potentially vulnerable to declines in apiculture and wide pollinator stocks. The global economic value of insect pollination was estimated to be €153 billion (USD 140,489,431,740.00) during 2005 (Potts).

An economic impact is also another factor of the bee colony collapse. According to the *CCD Steering Committee*, honey bees are economically worth \$15 billion to the US economy annually though the enabled production of food. Due to the yearly decline of the pollinator colonies, commercial beekeeping is struggling to remain in business (Schacker 2008). Since bees are increasingly declining every day, this affects the number of crops being pollinated each year. CCD will also affect the livelihoods of beekeepers and farmers. Families who have farmed their land for centuries will be forced out of business, causing the unemployment rates to increase. Beekeepers provide bees for two services: to provide pollination and to produce honey. With these losses, the cost to keep bees will increase causing the prices for honey bee rentals to increase. "Currently, beekeepers spend between \$15-\$20 per queen bee. Labor costs of beekeepers is about \$12 per hour, making each colony roughly \$4. This means that the total cost for one colony is \$15 + \$4 = \$19. Assuming these beekeepers lost 16 percent of their bees to CCD on average, the estimated CCD cost per beekeeper was  $0.16 \times 2,484 \times \$19 = \$7,551$ " (Rucker). Due to these prices, effects will be apparent throughout the entire food industry. "Grocery stores and restaurants will experience increased prices, scarcity of crops for food, and a diminished consumer base" (Berenbaum 2007). "With 11.2 million people working in the food service industry and four hundred thousand people working in the agricultural industry in the United States, a loss of honey bees will have significant repercussions" (Bureau of Labor Statistics 2010). This causes a chain reaction to occur in which farmers are not being able to produce a high yield since their crops are not being pollinated. Therefore, they have to

spend more money in order to produce for their buyers causing prices to inflate for the consumer. "These price increases will severely impact many agricultural industries, including the California almond growers who rely on the colonies to support the \$2 billion almond industry" (Sumner 2006). This affects many agricultural industries:

Dairy and beef farmers will also be affected because their livestock depends on clover and foraging crops for food. Due to the loss of honey bees in the US, bees and food will need to be imported from foreign countries. Within the last three years, almond farmers were approved to import bee colonies from Australia because there were not enough American bees. Each year bees travel from Australia to San Francisco in order to pollinate almond trees; however, the bees are being transferred in the complete opposite season from their working season. Importing these pollinators and food could cause higher prices and the US will face an increased trade deficit (Berenbaum 2007).

Another major effect bee colony collapse has on the world is the health of the human race. "If colony collapse continues to worsen and crops that depend on pollination become increasingly scarce, it is possible that middle and low class families will be forced to pay three to four times more than what they already pay for food" (Schacker 2008). After years of prices increasingly rising for oil, electricity, and healthcare; these added food expenses will be detrimental and could potentially limit access to nutritional foods. "If families do not receive food with nutritional value, health problems such as obesity and diabetes will most likely increase and further raise the price of healthcare" (Schacker 2008). Thirty-five percent of all fruits and vegetables are imported each year. The reason these insects determine the health of people is because according to *Vanishing of the Bees*, one-third of the production of food comes from honey bees. Considering the amount of food people ingest every year, not having enough of these producers will cause scientists to further manufacture genetically modified organisms into a human's every day diet. With this being said, eating these genetically modified foods can have a tremendous effect on the human body.



Young children are affected more by foods that contain genetically modified organisms. For instance, female babies will be subjected to eat genetically modified foods that will cause their breasts to mature at a younger age. These foods can also cause increased hormone levels at younger ages in males. "The United States currently imports manufactured honey from China. These barrels of honey blends are imported at \$18/pound. These barrels are also filled with ingredients such as high fructose corn syrup, lactose syrup, and chloramphenicol, which is an antibiotic to treat eye infections" (Vanishing of the Bees). Importing and creating these genetically modified foods will have a negative impact on society, and the only way to prevent that from happening is to save honey bees.

Colony Collapse Disorder has many effects environmentally, economically, and socially. Without honey bees in our environment, humans will lose many wild plants and cultivated crops, and our global biodiversity will decrease. Economically, prices and taxes will be increased due to the high demand of these crops but not enough supply which will force the US to import from other countries. Socially, children and families will be forced to eat genetically modified foods and the health of our population will be affected by these changes.

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