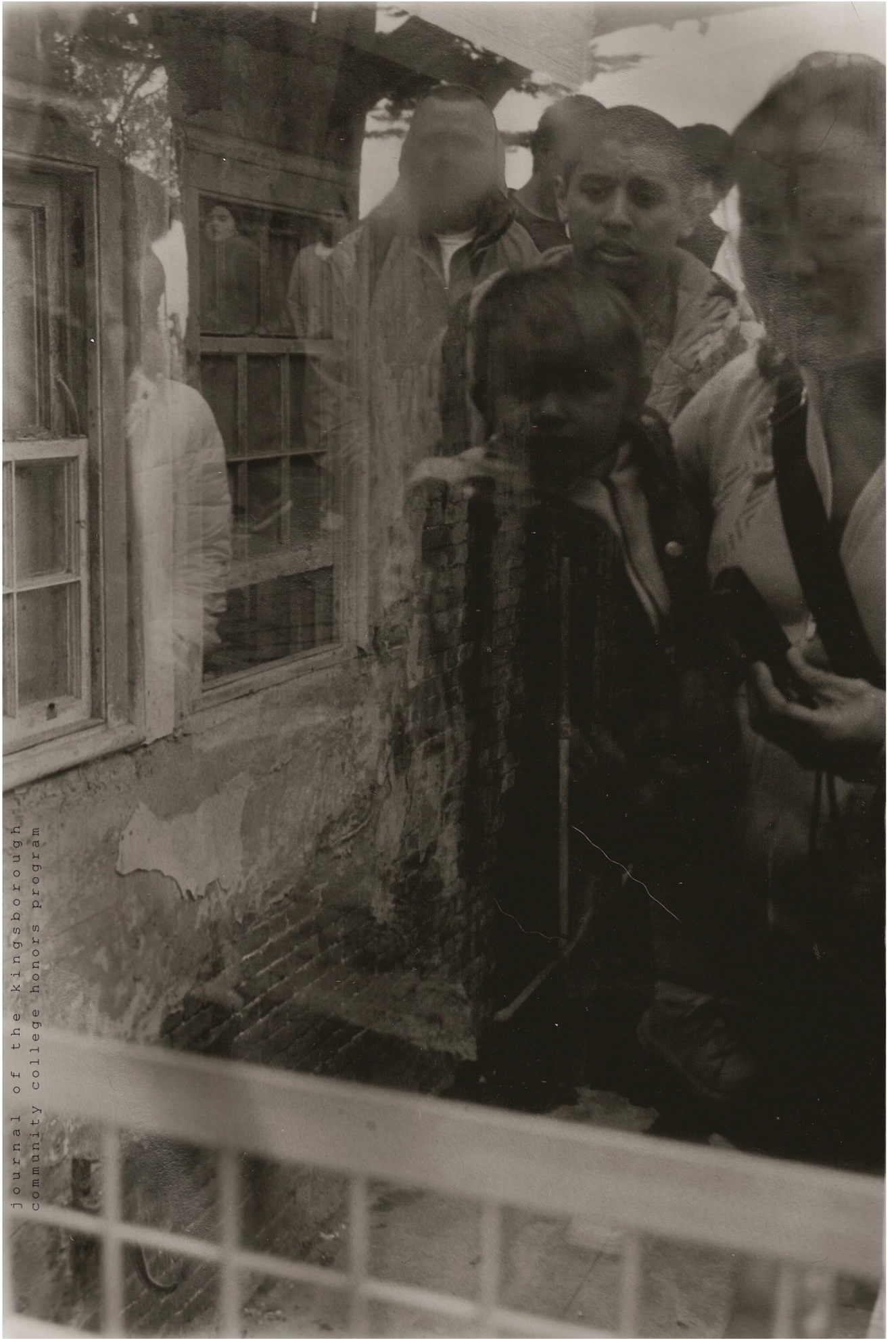


distinctions

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DISTINCTIONS

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EDITOR'S COLUMN

The Traffic Today is Terrible

This issue of *Distinctions* is dedicated to victims of slavery worldwide, some 27 million people—people who suffer in sex slavery, debt bondage, domestic servitude, agricultural slavery, as child soldiers... I have witnessed some of these slaves working in quarries in India. There are ten million people working in slavery there, but they also exist throughout the world and the majority are women and children. Approximately 14,000-18,000 people are trafficked into the United States each year to work in one of these forms of slavery. Fortunately, such statistics are finally becoming more common knowledge, at least in the United States, through foundations and accounts of slavery both foreign and domestic.

One of the most challenging contemporary accounts to read is Somaly Mam's *The Road of Lost Innocence*, her autobiography that traces her journey from child sex slave to founding shelters for rescued girls throughout Southeast Asia (AFESIP—Agir pour les Femmes en Situation Précaire) and her setting up the Somaly Mam Foundation in the United States (www.somaly.org). She describes girls showing up at the shelter who are six years old, who have been sold as virgins, tortured and raped by men who believe that sex with a virgin will cure them of AIDS, had their vaginas sewn up, and then re-sold as virgins—multiple times. I read this chapter of Mam's narrative while my seven-year-old daughter played happily in the next room and I tried not to cry too loudly for fear of being asked why I was upset.

In this issue of *Distinctions*, there is an article about the relationship between human trafficking and globalization. As I have worked on slavery and slave narratives with my students—from the British Barbary captivity narratives of the eighteenth-century, to the African-American slave narratives of the nineteenth, to those of the twenty-first like Mam's—the changes in economics have become more and more apparent to all of us. For after all, slavery is about money. This was made quite clear in a talk I recently attended by Kevin Bales, one of the founders of Free the Slaves (www.freetheslaves.net), a DC-based NGO seeking global eradication. But Bales also made clear the import of consumer choices and the fact that, through such awareness, eradication is possible. He highlights the steps that can be taken in his book *Ending Slavery: How We Free Today's Slaves* (University of California Press, 2008).

I hope that you will think about this and that you enjoy this issue of *Distinctions*.

Robert Cowan
Assistant Professor of English

PEDRO BERMEJO

Yesterday's Taboos, Today's Trends¹



A tattoo that demonstrates pride for Mexican culture. Photo by Gerardo Mendez.

¹ Completed under the mentorship of Professor Lela Nargi for Journalism 51: Feature Writing.

For many people in the Latino community, tattoos are no longer so scandalous. “The tattoos that my grandchildren have make them look like criminals. When I was growing up in the *Pueblo* fine young men did not have tattoos,” said 77-year old Celerina Gutierrez. “The only people who had tattoos were the soldiers and that was because they had earned them. Some of them carried the names of their *mujeres* on their arm to remind them what it was they were protecting. But nothing crazy like the things you see in this country.”

Celerina Gutierrez is a Mexican immigrant who came to live with her children and their families after she suffered an injury that prevented her from running her *cantina*. Except for four years she spent in the United States in the 1970’s, Celerina, or Tia Chely as she is known affectionately by her family, spent her entire life in her home town of Piaxtla in the state of Puebla. Tia Chely’s values are as ingrained in her as the ink in the tattoos is embedded under her grandchildren’s skin. She shares the view, held by many older people in the Latino community, that the growing trend of people getting inked is bad for the community.

“It’s not a good look, my mom says. She thinks that me having a tattoo will lead others to believe I’m in some sort of gang” said Gerardo Mendez. Gerardo is nineteen years old, a student at City Tech, and an immigrant from a small town in Mexico called San Juan De Ixgualco. He came to the United States as a toddler. “I got my first tattoo last year, it reads ‘Lucy Ford,’” he said referring to the tattoo. According to Mendez it represents the cruel intentions found in women. “There’s no gang involvement what so ever, but it does have a personal meaning to me” he said.

The Encyclopedia of Clothing and Fashion describes tattooing as “a process of creating a permanent or semi-permanent body modification that transforms the skin... Tattooing is a process of puncturing the skin and depositing pigments, usually indelible ink, by a variety of methods beneath the skin to create a desired design or pattern.” The Encyclopedia states that evidence exists that tattoos have been around for thousands of years. A pair of mummies dating back to 4160 B.C.E. was discovered in a temple near the ancient Egyptian city of Thebes. The temple was dedicated to the goddess Hathor, the cosmic mother in Egyptian mythology. Upon further examination it was revealed that these mummies had several marks made in a pattern along their lower abdomen indicating they had had tattoos.

The Encyclopedia of the First Amendment credits the eighteenth-century Polynesians with coming up with the word tattoo. The word is derived from the Polynesian word *Tatau* which means to be repeatedly stricken with a mallet called an *Au*. In Polynesian culture tattoos signified class, sexual maturity, achievements, and bloodlines.

According to the New York Times, tattoos are becoming more of a fashion statement than a refusal to conform to the standards society holds. In a section of its website called Times Topics, the paper describes tattoos in a current light. The brief description credits celebrities and athletes for having taken this once taboo practice and making it hip. They have brought tattoos out of the gutters and back allies, into our homes, and on to our skin.

Joey Wilson, 31, is a tattoo artist who based in Brooklyn and has been tattooing clients for fifteen years. He practices his craft at a parlor named Hand of Glory, located in Park Slope, Brooklyn. Wilson says that he has noticed a “definite” increase in the number of customers his shop has seen in the past few years. “We have probably about six artists [at this shop]. On a really good day we could each see about two or three people.”

Americans are embracing the movement by getting more tattoos than ever before in our history. An article published on Vanishingtattoo.com claimed that in 1936 only about 10 million people, or about six percent of our population had tattoos. That number more than doubled by 2003. Harris Interactive, a market research company, conducted several polls regarding tattoo statistics. One was conducted in 2003 and another in 2008. The 2008 poll revealed that about 14 percent of the population had at least one tattoo.

The Latino community in the United States is no exception to the trend, in fact, it is the ethnic group with the most tattoos in the country. The 2003 Harris Poll indicated that 18 percent of all adult Latinos have at least one tattoo. In the same poll it was found that only 14 percent of all African American adults have at least one tattoo and 16 percent of all white adults have one or more tattoos.

For decades, tattoos were associated with criminals and convicts. It was a way for outlaws to distinguish themselves from mainstream society. Several gangs also used the marks to identify its members and those of rival gangs. A 1994 article from the publishing, "The Observer" (from Los Angeles), speaks of the meaning of tattoos among gangs; "Tattoos are the storyboards of gang members' lives; they cannot be removed by the authorities and are thus a symbol of defiance. Some symbols have specific meanings: a teardrop may commemorate the death of a close friend; the masks of tragedy and comedy represent the philosophy at the heart of gang culture: 'Smile now, cry later.'" It is this precise sentiment that many of the older people in the Latino community find unsettling. For a large part of the Latino history in the United States, tattoos commonly affiliated a person with gangs. Anyone who had tattoos could fuel or fall victim to the vicious cycle that is gang life.

Often formed as alliances to protect the residents from other violent attackers, many of the Latino gangs that plagued headlines in the past, such as the Mexican Mafia and the infamous MS-13, have formed unbreakable ties between ink and criminal organizations in the minds of the older generation of Latinos. For the younger generations of Latinos however, looking like a Cholo (a Mexican street gangster) is fashionable and helps them feel connected to their roots. An article published in the New York Times in November 2003 discusses how pop icons are taking elements from Cholo culture and incorporating it into mainstream pop culture. Artists like Gwen Stefani and Christina Aguilera have had a hand in promoting Cholo style to a more mainstream audience by sporting typical Cholo attire such as plaid flannel shirts buttoned only at the top, slacks that are baggy, and bandanas.

Nineteen-year old Angel Garcia is a Mexican-American student at Kingsborough Community College. He is also a former gang member and an aspiring tattoo artist. Garcia has been practicing tattooing, without a license, for about two years. He works from the kitchen of his parent's apartment in Borough Park, Brooklyn. He said that even though he is an ex-gang member he doesn't do too many gang related tattoos; "Not too many [of my clients are] gang members because I don't like doing gang related tattoos."

The majority of Garcia's customers are Latino. He stated that his clients ask him for a lot of lettering and religious pieces, art forms that are traditional in Latin culture. Angel says that he tattoos between two and three people a week. To him tattoos are more than just a fad that is fashionable right now, "Tattoos are an everlasting dedication to something you truly believe in and by tattooing [people] I feel I'm helping them express whatever they're trying to show" said Garcia. He says that the majority of his family supports his practice, even saying the sometimes they ask him to tattoo them. "A lot of my aunts and uncles and cousins like it and [are] always asking me to tattoo them. My parents like the idea of tattooing other people if I enjoy it, but don't think it's [a] good [idea] to tattoo myself" said Garcia.

What was once a taboo form of self-expression and adornment in the Latino community is now becoming the norm among the people who make up the ethnic group. "I read somewhere that tattooing oneself is not the act of defiance and rebellion it once was" said Mendez.

GARVIN MING

Crucial Experiments in Modern Physics: An Historical Review¹

Abstract

The discovery of the “quantum” at the beginning of the twentieth century occurred at a time when physicists believed they had discovered all the known laws of motion. Only a few critical physical situations remained unexplained. The purpose of this paper is the exposition of the problems encountered by physicists attempting to bring completion to the laws of physics around the end of the 19th century. The phenomena of blackbody radiation, the photoelectric effect, and the structure of the atom will be examined, as will the discovery of the quantum as an explanation for the above phenomena.

I. Introduction: The End of Classical Physics

By the end of the 19th century, scientists had come to believe that they’d arrived at all the laws needed to explain the natural phenomena of the universe. These compiled laws, the laws of physics, were thought to have been complete because they neatly described the nuances of motion and forces that were observed by humanity at that time. Much as we do now, they believed that the only thing limiting their total understanding of the universe was sufficient technology and equipment with which to easily view particular phenomena. Many physicists were convinced that with better techniques and more refined tools they could get to the root of all extraneous problems inherent within the current model of the physical universe.

Among these problems, three phenomena in particular continued to defy understanding within the accepted rules. The first, blackbody radiation, referred to the thermal emission of objects, and could not be easily explained within the existing? “wave model” of light. The second, the photoelectric effect, was a phenomenon observed wherein light at the ultraviolet part of the spectrum could cause a current to flow in certain materials. Based on the known laws and calculations done by physicists, the photoelectric effect also defied explanation, casting further doubt on the wave model of light. Finally, there was the model of the atom, which should not have existed according to Newtonian motion and electrodynamics. The atomic structure, though supported by experimental evidence, could not be logically explained by the physical laws. These problems were unique because by their nature they should be simply explained by the concepts that physicists agreed governed universal motion. Particularly distressing was that they challenged long held assumptions, since many of these laws concisely and thoroughly explained the vast majority of other known physical phenomena.

¹ Completed under the mentorship of Professor Gregory Aizin for PHY1400.

II. Blackbody Radiation

Blackbody Radiation was among the anomalies that classical physics was incapable of sufficiently explaining. A “blackbody” is a theoretical object that would absorb all parts of the electromagnetic spectrum and, therefore, emit all such absorbed radiation. The conception of this idea has its origins in the known phenomenon of thermal emission of actual objects. It had been observed by scientists that materials will glow when given sufficient thermal energy. Hot iron is one such example, as it begins to glow red at extremely high temperatures. The universal nature of this property prompted further investigation, though until the electromagnetic nature of light was discovered, very little progress was made.

Once experimentalists like Thomas Young proved light to be an electromagnetic wave, the wave model of light was utilized to explain a whole host of phenomena. In addition, this allowed scientists to reach the conclusion that some sort of electromagnetic phenomenon was responsible for the emission of light from heated objects. It was assumed that there was an oscillation of charged particles that created the electromagnetic wave. The atomic theory and the developments surrounding it caused many physicists to hypothesize that the thermal energy was being converted to light on the atomic level. Since the kind of thermal emission is dependent on the material of the object, there were no actual “blackbodies” that could be found in the real world.

A method to simulate the blackbody needed to be found for further investigation into the phenomenon to continue. Gustav Kirchhoff, a physicist of the era, proposed the idea of approximating a blackbody by utilizing the fact that a hole in the side of an object will perfectly absorb all radiation that enters it. This simulation of blackbody emissions was dubbed “cavity radiation” for the hole from which the radiation escaped. Kirchhoff stated his belief that analysis of this radiation would reveal the mechanism by which material objects convert their thermal energy to electromagnetic waves.

Among the physicists to examine cavity radiation, Jozef Stefan, along with Ludwig Boltzmann, determined a relation between the power emitted by a cavity and the absolute temperature of the enclosure. Known as the Stefan-Boltzmann Law it states:

$$P = \sigma T^4$$

P being the total power emitted, T being the absolute temperature and σ being the Stefan-Boltzmann constant, which is:

$$\sigma = 5.67 \times 10^{-8} \text{ Js}^{-1} \text{ m}^{-2} \text{ K}^{-4}$$

Boltzmann theoretically derived the relationship that Stefan had arrived at analyzing experimental data from a thermodynamic interpretation of the problem.

Wilhelm Wien, conducting his own research into cavity radiation and using Boltzmann’s thermodynamic interpretation, arrived at the conclusion that the wavelength at which the most thermal radiation is emitted is directly proportional to the inverse of the absolute temperature of the enclosure. This became known as Wien’s Displacement Law, stated:

$$\lambda_{\max} = \frac{b}{T}$$

λ_{\max} is the wavelength at which most emission occurs, T is the absolute temperature of emission and b is the Wien Displacement constant:

$$b = 2.90 \times 10^{-3} \text{ mK}$$

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The Wien Displacement Law led to an approximation for the curve plot for blackbody radiation at short wavelengths and low temperatures. A more complete version of this relation, derived later became:

$$u_\nu = \frac{8\pi\nu^3 a'}{c^3} \cdot e^{-\frac{a\nu}{T}}$$

For u_ν being the emitted electromagnetic energy per unit frequency interval and per unit volume. There are constants a and a' , ν is frequency and c is the speed of light. However, it was found that at lower frequencies the approximation failed and couldn't accurately describe the values for the intensity of radiation at these wavelengths.

In another attempt to arrive at a proper mathematical descriptor, Lord Rayleigh, a British physicist, approached the problem of cavity radiation from the standing wave view, deducing that if an enclosure with completely electrically conductive walls were utilized, standing electromagnetic waves would be formed in the enclosure. This would result in modes of resonance for the cavity radiator. The formula Lord Rayleigh derived, based on Boltzmann's theory, is the following:

$$u_\nu = \frac{8\pi\nu^2 kT}{c^3}$$

Here k is Boltzmann's constant.

However, calculations showed that this new relation, called Rayleigh-Jeans Law, also failed to accurately predict the values of intensity at wavelengths that were very short (large frequencies) whereas the Rayleigh-Jeans Law predicts infinite intensity, known as the Ultraviolet Catastrophe (seen below).

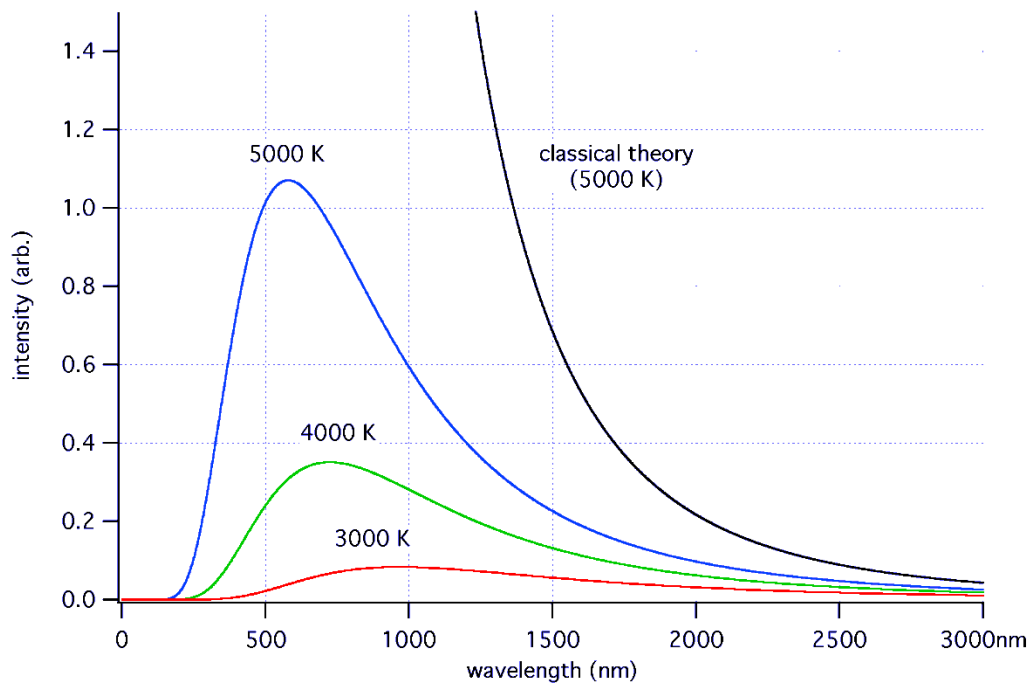


Figure 1 taken from "Wien's Displacement Law", Wikipedia

A comparison of Wien's and Rayleigh's results and what would soon be the results of Planck's derivation are seen below.

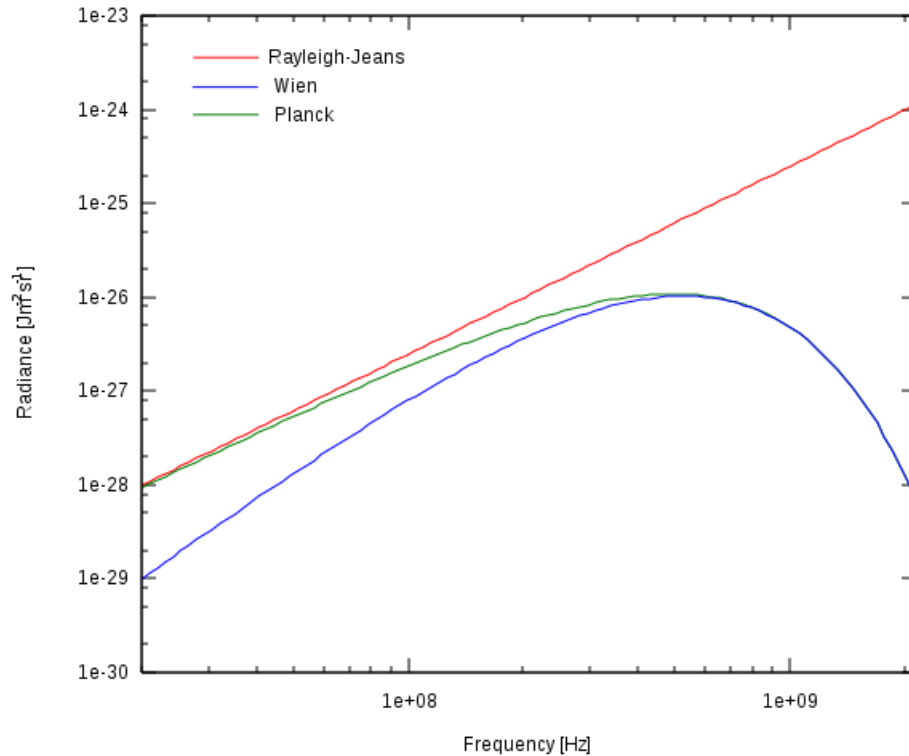


Figure 2 taken from "Rayleigh-Jeans Law", Wikipedia

Around the end of the 19th century, Max Planck, a German physicist, had taken to examining the problem of finding the radiation law from Wien's Displacement Law. In May of 1899, Planck presented the following equation, which he had derived from Wien's equation and an assumption similar to Lord Rayleigh's that the walls of the cavity radiation enclosure were ideal and perfectly reflecting:

$$u(\nu, T) = \frac{8\pi\nu^2}{c^3} U$$

U being the mean value for the energy of the linear oscillator, as the radiation was independent of the type of oscillator. The only real difference between this equation and Rayleigh's is that Planck didn't substitute for the classical equipartition of energy. Equipartition of energy in classical statistical mechanics states the average energy for each degree of freedom as $\frac{1}{2}kT$, and a simple oscillator has energy kT .

Planck's background in the study of entropy and more accurate derivations of Wien's Displacement and the Stefan-Boltzmann Law ultimately led him to his introduction of the quantum to the blackbody problem. After his initial determination, he used Wien's law to derive the energy of the resonator:

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$$U = a' \nu e^{\frac{-a\nu}{T}}$$

Where a and a' , Planck realized, were physical constants. Here he found that $a' = 6.885 \cdot 10^{-27}$ and $a = h/k$ where k is the Boltzmann constant.

Eventually, he derived the following:

$$U = \frac{h\nu}{e^{\frac{h\nu}{kT}} - 1}$$

So the total formula becomes

$$u(\nu, T) = \frac{8\pi\nu^2}{c^3} \cdot \frac{h\nu}{e^{\frac{h\nu}{kT}} - 1}$$

However, when Planck attempted to explain this relationship, he encountered difficulty. Finally, through no reason other than what he described “desperation,” he utilized a statistical distribution method. Here he assumed that the oscillator energy was divided into sections, meaning only discrete values can be absorbed

$$\varepsilon_n = nh\nu$$

where ε is the energy and n can only be integer numbers. Then, using Boltzmann distribution he obtained

$$\bar{\varepsilon} = \frac{\sum_n \varepsilon_n e^{\frac{-\varepsilon_n}{kT}}}{\sum_n e^{\frac{-\varepsilon_n}{kT}}}$$

Here, the partition function is the denominator. Summing it we find

$$Z = \sum_{n=0}^{\infty} e^{\frac{-\varepsilon_n}{kT}} = \sum_{n=0}^{\infty} e^{-nx} = \frac{1}{1 - e^{-x}}, x = \frac{h\nu}{kT}$$

leading to the value for the numerator

$$\sum_{n=0}^{\infty} nh\nu e^{-nx} = h\nu \left(-\frac{dZ}{dx} \right) = \frac{h\nu e^{-x}}{(1 - e^{-x})^2}$$

Then the average energy per oscillator is

$$\bar{\varepsilon} = \frac{h\nu}{e^x - 1} = \frac{h\nu}{e^{\frac{h\nu}{kT}} - 1}$$

making energy per unit volume

$$u_\nu(T) d\nu = \frac{8\pi}{c^3} \frac{h\nu^3}{e^{\frac{h\nu}{kT}} - 1} d\nu$$

And the total energy per unit volume is

$$u(T) = \frac{8\pi h}{c^3} \int_0^{\infty} \frac{\nu^3}{e^{\frac{h\nu}{kT}} - 1} d\nu = \frac{8\pi^5 (kT)^4}{15(hc)^3}$$

With this, Planck had finally given sufficient theoretical explanation for his cavity radiation formula. He had determined that there were discrete values of energy, for which the oscillations must correspond to. Planck's constant, h , and the idea of a discrete energy values known as the "quantum" would allow for breakthroughs in other areas.

III. The Photoelectric Effect

Another anomaly that was challenging classical physicists was a phenomenon dubbed the photoelectric effect. As Henry Hertz discovered, a negatively charged electroscope discharged when lit by ultraviolet light. Physicist J. J. Thomson proposed that this was due to the ultraviolet light causing the electroscope to emit its negatively charged particles. By conducting experiments, Thomson found that these particles were likely electrons.

Phillip Lenard, a student of Hertz, conducted an experiment in an attempt to ascertain how the photoelectric effect precisely worked. His experimental setup is seen below

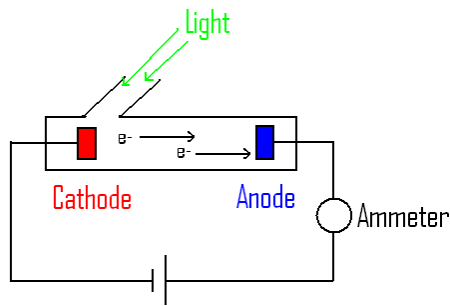


Figure 3 taken from "Case Study: Photoelectric Effect"

Utilizing a vacuum tube, Lenard found that shining an ultraviolet light on the cathode caused a steady counterclockwise current to flow through the circuit. This meant that electrons were moving through the space between the cathode and anode. Since there was no current when the light was not shining on the cathode, the emission of electrons had to be caused by light. Using a battery to create a potential difference between the two electrodes, Lenard discovered a number of properties:

- The current is directly proportional to the intensity of light.
- No appreciable delay takes place between the moment of time the light is applied and the moment the current starts to flow. Current flow begins almost instantly.
- The electrons are only emitted when the frequency of the light shone on the cathode exceeds some threshold frequency.
- For a positive potential difference ΔV (positive anode, negative cathode) no change in current occurs as ΔV increases. For a negative potential difference ΔV (negative anode, positive cathode) the current decreases till it finally stops at a potential difference $\Delta V = -V_{\text{stop}}$. V_{stop} is known as the stopping potential (assume V_{stop} to be positive).

Stopping potential V_{stop} is independent on the intensity of the light. No matter how intense or weak the light, the current will not flow when

$$\Delta V = -V_{\text{stop}}$$

Another attempt by classical physics to explain the photoelectric effect was through a process known as thermal emission, wherein electrons are emitted from a material at very high temperatures. Physicists hypothesized that light was somehow causing thermal emission of electrons without heating the metal to a high temperature.

The maximum kinetic energy of an electron emitted due to the photoelectric effect (known as a photoelectron) can be found by using the stopping potential. Since the negatively charged anode will repel all photoelectrons emitted, conservation of energy will allow us to determine the kinetic energy of the photoelectron. Here, the cathode is assumed to be a point of zero potential energy, giving us

$$E_i = K_i + U_i = K_i + 0 = K_i$$

The anode is at ΔV potential relative to the cathode, so

$$U = q\Delta V = -e\Delta V$$

Where final total energy is

$$E_f = K_f + U_f = K_f - e\Delta V$$

Conservation of energy states

$$E_f = E_i$$

$$K_f = K_i + e\Delta V$$

For any $K_f > K_i$, ΔV must be positive, and $K_i < K_f$, ΔV must be negative. However it will still reach the anode if the initial kinetic energy is large enough. In order to determine maximum kinetic energy, one should use

$$V_{stop} = \frac{K_{max}}{e}$$

According to the above relationship and the wave model of light, the more intense the light the more kinetic energy an electron should have. Experimental data obtained by physicists proved this to be false, as no matter what the intensity of the light was used, the electrons always ceased to flow at the same stopping potential. Furthermore, electrons only began flowing when the appropriate threshold frequency had been reached or surpassed. No electrons flowed at any frequency below that of the threshold, no matter how intense the light.

Albert Einstein, after reviewing Planck's work on the emission of cavity radiation and his proposal of the existence of a quantum, put forward the idea that electromagnetic radiation might also be quantized. Using this, he stated that

$$E = hv$$

where E is the energy of a light quantum, v is the frequency of the light, and h is Planck's quantum constant. Then light would transfer energy in the discrete quantities observed. Since the amount of energy delivered arrives as a discrete quantity, then it must be that light is a flow of particles. Einstein called them photons. He hypothesized that an electron absorbed one photon at a time, and, since the energy of the photon was dependent not on the intensity but on the frequency, the threshold frequency for the photoelectric effect was based on the energy delivered by that photon.

Einstein's conclusions as follows:

- Light is made up of discrete quanta called photons. Each photon of light with a given frequency v , has an energy $E = hv$.
- A photon is completely absorbed and emitted. No fraction of a photon can be absorbed or emitted, and so an electron can absorb only an integer number of photons.
- A photon, can only be absorbed by one electron and therefore delivers all its energy to one electron.

Using Einstein's formula for energy based on frequency

$$E_{elec} = hv \geq E_0$$

where the E_{elec} is the energy of an electron that has absorbed just enough energy to escape the metal with surface potential barrier E_0 .

If so, then

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$$\nu_0 = \frac{E_0}{h}$$

which gives us the threshold frequency required to emit that electron.

$$K_{\max} = E_{elec} - E_0 = h\nu - E_0$$

States that the kinetic energy of the electron is determined by the photon and

$$V_{stop} = \frac{K_{\max}}{e} = \frac{h\nu - E_0}{e}$$

This shows that the stopping potential and kinetic energy of the electron are dependent on the frequency of light impacting the metal.

The theoretical evidence was convincing, but Einstein's model of light also made a prediction

$$V_{stop} = \frac{h}{e}(\nu - \nu_0)$$

This meant that the stopping potential is a linearly increasing function of the frequency of light. Experimental data, confirmed this prediction, a graph of which is shown below.

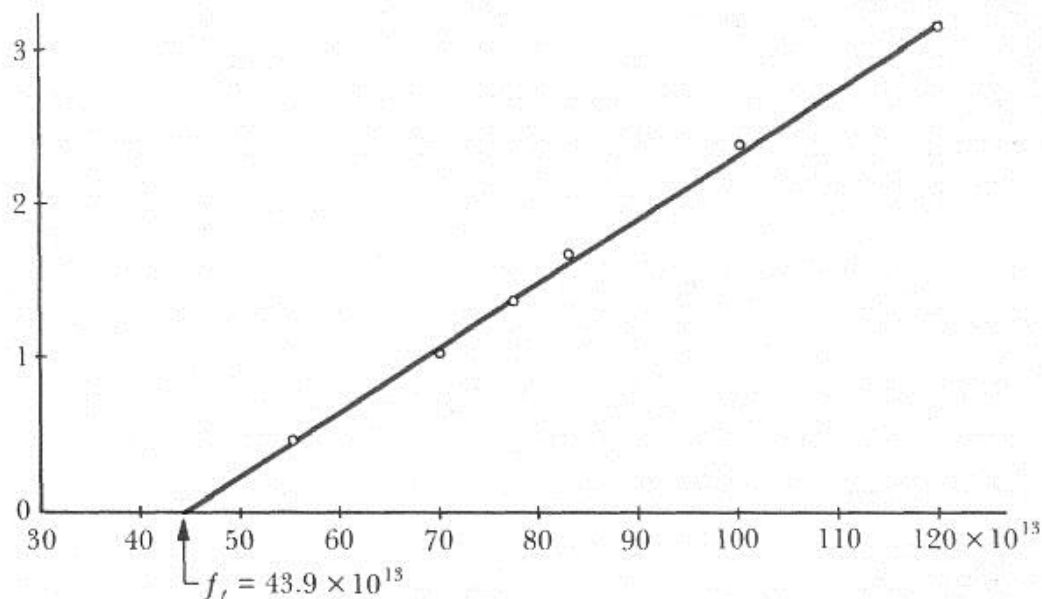


Figure 4 taken from “The Photoelectric Effect: The Quantization of Energy and Light”

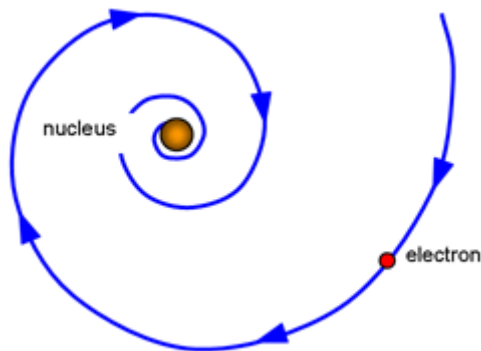
By explaining the photoelectric effect using Planck's quantum hypothesis, Einstein furthered the case for the existence of the quantum as a fundamental entity of physical law. In addition, the concept of the photon once more brought into question the nature of light. After centuries of debate, electrodynamics had declared light to be a wave. This new quantum mechanical explanation provided by Einstein, however, meant that light could be looked at as a particle. The only satisfactory explanation was that

light was somehow both a particle and wave. The particle-wave nature of light, known as duality, set the stage for yet another phenomenon to be explained.

IV. The Structure of the Atom

The new phenomenon requiring explanation was of the nature of the atomic structure, wherein negatively charged electrons orbit protons in a positively charged nucleus. Experiments had shown that the model of the time, developed by Ernest Rutherford, was accurate, but because charged oscillations were known to create electromagnetic waves, a very strange theoretical scenario resulted.

Since according to the model, the electrons orbited the nucleus and protons and electrons attract each other, theoretically the electron should spiral into the nucleus, constantly losing energy and emitting a continuous spectrum of electromagnetic radiation. The calculations dictate this should occur within a microsecond, and so atoms should self-destruct and be inherently unstable. This can be seen in the image below.



How can an atom be stable in this configuration? This was the question Niels Bohr asked when he began working at Rutherford's laboratory. Einstein's concept of the photon led Bohr to make his own hypothesis about energy in the atom. According to Einstein's description of the photoelectric effect, electrons absorbed only discrete amounts of energy. Since this was true, Bohr proposed the following:

- Negatively charged particles called electrons orbit a positively charge nucleus in the atom
- There are stationary states that atoms can only exist in. These are distinct states, with numbers $n=1, 2, 3...$ for each electron orbit around the nucleus. These are known as quantum numbers.
- The stationary state has a defined energy, E_n , numbered in increasing order.
- The ground state is the lowest energy state of the atom. Higher energy levels are called excited states.
- To change states, the electrons of an atom may absorb or emit energy from a photon via the frequency

$$\nu_{\text{photon}} = \frac{\Delta E_{\text{atom}}}{h}$$

This change of state can be called a transition or quantum jump

- Collisional excitation is the inelastic collision between an atom and another atom or electron that causes a change in energy state.
- All atoms seek the ground state. If an atom is undisturbed in an excited state, it will jump to lower states till it reaches the ground state.

These rules implied that the radiation emitted by atoms could only be done so at certain wavelengths, that matter can be stable, that collisions could cause the emission of radiation and that absorption is a

subset of emissions. As a result, all elements have their own emission spectrum, based on the specific states that their electrons are in.

The idea of energy states had not been accounted for in classical physics, so proof of them had to be found. Bohr used the hydrogen atom to provide proof for energy states since its simple nature made it the easiest to provide an argument for. Later on, Bohr's conclusions could be verified by the work of Prince Louis-Victor de Broglie who hypothesized the nature of matter waves based on the concept of Einstein's dual nature of light. He found the wave of a material object could be described as

$$\lambda = \frac{h}{p} = \frac{h}{mv}$$

so that the wave function of matter is based on its momentum. This became known as the de Broglie wavelength. The analysis of electron orbit of a hydrogen atom using the De Broglie wavelength tells us that the radius of the orbit is based on the standing wave of the electron at that orbit

$$r_n = n^2 a_B$$

where $n = 1, 2, 3, \dots$ and a_B is a combination of constant's called the Bohr radius.

The above function means the electron can only be found in any one orbit, and verifies Bohr's original hypothesis using a property of matter discovered some years after his proposal of quantum states for the atom. Bohr's model finally brought clarity to the apparently impossible model of the atom, and was the last stepping stone in the beginning of a new brand of physics based on Planck's idea of the quantum.

V. Conclusion: The New Quantum Mechanics

Ultimately, it was seen from numerous experimental and theoretical conclusions that the quantum was real. What Planck initially believed to be nothing more than a mathematical manipulation became recognized as a real physical constant, a constraint through which much of the natural world's behavior was determined. It affected the transmission of energy from one point to another, the properties of elements and the nature of light. The quantum became the basic building block for almost all discoveries in physics following its conception.

Quantum physics revolutionized many of the sciences, and much of our current technological prowess is due to the many processes it allows scientists and engineers to predict. The quantum, which is a discrete measure of energy, described the behavior of blackbody radiation, the photoelectric effect, and helped give much needed detail to the structure of the atom. Three different problems for which classical mechanics and electrodynamics had no answer were explained by this idea. Physicists, and scientists in other fields, had to acknowledge the importance of its influence and it caused them to look at the world they believed they understood in a different light. Quantum physics showed the scientific community of that era that the smallest inconsistencies could yield unexpected results and change the entire basis of physics' logic for generations of scientists afterward.

Works Cited

- Hermann, Armin. *The Genesis of Quantum Theory*. Cambridge: The MIT Press, 1971.
 Knight, Randall D. *Physics for Scientists and Engineers*. San Francisco: Addison Wesley, 2004.
 Larsen, D. "Case Study: Photoelectric Effect" *UCDavis Chemwiki* 12 Jun 2010, UCDavis, 3 Dec. 2010, http://chemwiki.ucdavis.edu/Physical_Chemistry/Quantum_Mechanics/Photoelectric_Effect

“The Photoelectric Effect: The Quantization of Energy and Light” *Rutgers Physics & Astronomy* 9 Mar. 2005. Rutgers, 3 Dec. 2010, <http://www.physics.rutgers.edu/ugrad/205/photoelectric.html>

“Wien’s Displacement Law” Wikipedia 9 Dec. 2010, Wikipedia, 11 Dec. 2010, http://en.wikipedia.org/wiki/Wien%27s_displacement_law

“Rayleigh-Jeans Law” Wikipedia 9 Dec. 2010, Wikipedia, 11 Dec. 2010, http://en.wikipedia.org/wiki/Rayleigh%E2%80%93Jeans_law

JOANNA FRANCIS CROCKETT

Living with Scars: The Impact of Childhood Sexual Abuse on Adult Relationships¹

Abstract

This is an examination of the psychological ramifications that childhood sexual abuse has on a victim's adult relationships. More often than not, when you talk about the psychological effects, the focus is often placed on the female victim. Even though I have highlighted their struggle and the transformational effect that childhood sexual abuse has on the psyche, I give equal focus to male victims. Both victims can experience bouts of promiscuity and struggle with an inherent lack of trust in their partners. My target demographic will be African American males and females between the ages of 25-35. The questions I address in my essay include: Does the relationship with the perpetrator affect the severity of psychological change? Are the effects worse when it's the victim's close relative? Does being open about your past help in the recovery process? How have partners reacted and do the reactions help or worsen the situation? To supplement my library research I conducted and included interviews with victims in my target demographic, for insight into their own personal struggles. In addition to the interviews I utilized statistics from articles found in the Gale Virtual Reference Library to support my findings.

Harry Crews, famous American novelist, declares “There is something beautiful about all scars of whatever nature. A scar means the hurt is over, the wound is closed and healed, done with.” For the 7.6% reported child abuse victims who carry the repercussions of their trauma into adulthood, this statement couldn't be further from the truth. With the extreme and somewhat unexpected difficulty I found when attempting to write this paper, I can admit that no beauty lies in these scars, only strife and shame. For many victims of childhood sexual abuse, like myself, these struggles are externalized daily in the relationship with your partners and, more important, with oneself.

Child sexual abuse is defined as the use of a child for the gratification of another being through sexual touching, intercourse, incest, sexual battery, genital exposure, voyeurism, or the use of child pornography. Statistics illustrate that girls are three times more likely to be abused than boys. Moreover, one in four women was abused as children while one in six men experienced similar abuses. However, many of the abuses against men go unreported. In an article by David France (2010), Gail B. Slap, attributed the lack of reporting to the fact that “some may not recognize their early encounters with older men or women as abuse; others blame themselves.” (p.3) Slap also goes on to acknowledge that “75% of male victims reported being ashamed that they had failed to fend off the perpetrator” and that “they don't

¹ Completed under the mentorship of Professor Lesley Broder for English 24.

want people to think of them as easily coerced or forced.” (p.3). More so, due to denial, some don't view what happened to them as a legitimate form of sexual abuse; instead it's viewed as them getting an early start in their sexual lives. Perpetrators of sexual abuse against children can be an immediate family member, a cousin, uncle, a friend of the family or anyone in a position of authority. According to Esther Deblinger (2009), in an interview with The National Child Traumatic Stress Network, the majority of perpetrators are male with a small percentage of them being female. The American Bureau of Justice statistics places the figure at 96% of male perpetrators with 80% of victims knowing their abuser. Deblinger supports the latter statistic when she details that more often than not they are well known by the victims and are not the proverbial dirty old man or someone who lurks in a dark alley. In the case of the people I interviewed coupled with the truth of my own abuse, the perpetrators were mainly men and people we were acquainted with.

Victims of childhood sexual abuse (CSA), without the intervention of effective psychological care, deal with long term impacts of the abuse well into adulthood. The impact is both physical and psychological including inability to focus, timidity, low self-esteem, mistrust in other individuals, poor decision making in relationships, issues with sexual intimacy, engaging in sexually risky behavior, truancy, promiscuity and a predilection towards aggressiveness and violence. These issues not only affect us, but our partners as well. The degree of the emotional fallout varies based on the nature of the relationship between the victim and the abuser, the age when the abuse occurred and the frequency of its occurrence. Additionally the type of abuse, sexual contact versus nonsexual contact, plays a role as well. The source of these self destructive behaviors is the development of low self-esteem in victims of childhood sexual abuse. As described in the article “Child Sexual Abuse Victims' Perception of Paternal Support as a Significant Predictor of Coping Style and Global Self-Worth” by Jennifer W. Guelzow, Patricia F. Cornett and Thomas M. Dougherty “damage to self-image or perception and symptoms of sexualized behavior are more common in sexually abused children than in other clinical groups” (p. 2). They go on to explain that “studies of sexually abused children under the age of eighteen years and found that abused children were more likely to have behavior problems, poor coping skills, poor parental relationships, and poor self-esteem than non abused children” (p.3). Once you have a low sense of self, you don't feel as though you are worth much. Therefore, it becomes increasingly difficult to accept love from others, or accept that their feelings are genuine. Amid my periods of uncertainty in any given relationship, I would always ask myself, “What's so good about me, that he would want to be with me?” Even though there is a misconception that the relationship between low self-esteem and CSA is overstated, how could you expect that a victim of CSA could develop a healthy sense of self worth if they were violated at such a young age? Not to mention if the abuser was the person that you looked to for protection and love. Low self-esteem and insecurity go hand in hand. Insecurity and relationships are never good bedfellows. Out of insecurity comes clinginess which is due to the inherent fear of being abandoned.

Growing up, I knew that my attitude towards sex and men wasn't what was considered normal. Even though I abstained from sex for some time, later than my counterparts, I remember being what I can only describe now as hyper sexualized. For me sex, well into my adulthood, had nothing to do with love and mutual affinity but something you did to hold on to or please someone else. It started in my pre-teen years and carried itself well into my twenties. This isn't surprising since a study completed by Candice Feiring, Charles M. Cleland and Valerie A. Simon (2009) reported that “CSA involves the unilateral imposition of adult sexual desire on children. For these children, intimacy becomes associated with shame and fear rather than warmth and caring and with concerns about dominance and submission rather than mutuality” (p. 1). This is the most injurious message that is inadvertently relayed to a victim of childhood sexual abuse, the inability to distinguish between sex and love; sex is simply viewed as a symbol of acceptance and love. I think back to 1999 when the new person I was dating, Bobby, left me feeling rejected and unworthy, for reasons that would be considered uncommon. We met at Pergament as he was a coworker of my sister. Mutual interest was communicated and he asked me out on a date. The date went well being that we had a delightful time. We returned to my sister's apartment but to my dismay he was not interested in having sex with me. I was confused, upset and hurt and he was puzzled by my reaction.

To me sex was my show of gratitude and was the only way to keep him interested. Sex would validate me and his interest in me. His refusal sent me into a mental tailspin. This was supposed to be what all men wanted, and he didn't. Was I so worthless, so undeserving that you didn't want this *gift*? Another female victim of CSA shares the same sentiment. I surveyed seven subjects who dealt with the issue of sexual predators, six of whom were actually victimized. One of them in particular described herself as having very low self-esteem. She believes that sex is the only way that she can be close to and hold onto someone. Unfortunately for victims of childhood sexual abuse, sex becomes the focal point of relationships and the only form of communication they know.

Sex to some victims of CSA can be used in the same vein as a handshake is non victims. The constant need for this type of validation often leads victims of childhood sexual abuse into a promiscuous lifestyle. Theresa E. Senn, Michael P. Carey, Peter A. Vanable, Patricia Coury-Doniger and Marguerite A. Urban (2006) highlighted that:

CSA has been associated with a variety of adverse sequelae, including engaging in risky sexual behavior. Individuals who were sexually abused as children report an earlier age of first consensual intercourse (e.g., Wilsnack, Ogeltanz, Klassen, & Harris, 1997), more episodes of unprotected sex (e.g., Lodico & DiClemente), and a greater number of sexual partners. (p. 1)

On a groundbreaking episode of the Oprah show, 200 men came forward to admit that they were molested as children. One of those men was Gregg, who acknowledged the effect his abuse had on his life. He admits to the audience that “As a teenager and into my twenties, I became incredibly promiscuous. I couldn't last in a relationship very long, or I had multiple relationships going on at the same time” (p.4). This was an emotion echoed by some of the men during the same episode. The tendency of CSA victims to lean towards these varying sexual patterns can be due in part to being exposed very early on in life to sexual behavior. Additionally, as a consequence of the abuse there are no perceived boundaries, as it pertains to sex. The learned concept of being in control of one's body and showing respect for oneself is absent. Statistics show that one-third of the men in Sex Addicts Anonymous have reported being abused as children. This is just one type of sexual dysfunction that affects victims of child sexual abuse.

In a personal interview with another victim of CSA, she relayed that she has never been able to orgasm from sex with men throughout her life. She is a forty-something year old woman with three children who admits that she can never fully relax with a partner. She attributes this inability to her experience of being sexually abused by her father at the age of 16. “He ruined my life forever.” she suggests. “I am so disconnected from men sexually that I don't care if they come or go.” This victim admittedly has had a series of many unsatisfying relationships. Sentiments such as these are not uncommon among female victims of CSA. Cindy M. Meston, Alessandra H. Rellini and Julia R. Heiman (2004) attempt to explain this phenomenon when they assess that:

In CSA victims, low levels of romantic/passionate sexual self schema may mediate negative sexual affect during sexual arousal above and beyond the effect of depression and anxiety. The reason why romantic/passionate sexual self-schemas may be altered among women with a history of CSA is unclear. One possibility is that women may be linking feelings of romance and passion with intimacy needs—a domain of sexuality that has long been shown to be adversely affected among CSA victims (Merrill, Guimond, & Thomsen, 2003). (p. 7)

As a result of CSA, one cannot fully enjoy the sexual experience as there is a disconnection between sex and romance. The negative perception that is attached to sex is due in part to the area of sexuality that is adversely affected by CSA.

Furthermore some victims of CSA have no interest in sexual activity due to their difficulties in bonding emotionally with their partners. During the period when I was undergoing therapy, I had no interest in engaging in sexual activity. At that time I was not in a relationship but I had a friend with whom I hung out on a regular basis. I gave in one night to his advances and experienced something that I

have gone on to experience twice since then. I suffered though what is called reexperiencing or flashbacks. Reexperiencing is defined as the reliving of some aspects of the abuse while awake or during sleep in the form of a nightmare. As the website *Surviving to Thriving* defines it:

After a traumatic experience, it is not unusual for us to block part of the memory, banish it from consciousness. Sometimes a forgotten memory of rape or abuse will resurface in the form of a flashback, which can be particularly terrifying and confusing. Often, flashbacks have something to tell us and they present themselves to let us know that part of the trauma is waiting to be resolved. (p.2)

A flashback is not simply a memory of the abuse, but the feeling as though one is actually reliving the abuse. Re-experiencing for a victim of CSA is similar to a veteran of war experiencing PTSD. Triggers for flashbacks can originate from any thing, person, or even a smell and are unique to each person. Triggers often occur during sex, when a partner may move or do something that similar to that of the abuser. I can't isolate what caused my trigger, but I had a mental picture of my abuser in my mind and all I could do was cry and quietly ask him to stop. For men there is another dimension to intimacy problems.

If a man has been abused by a woman he may be ashamed that he was controlled by a woman. He may manifest his resentment by always wanting to be in control sexually. Additionally if he exhibits similar behaviors to his perpetrator, he may shut down entirely and reject you in order to finally exercise the control he wasn't able to during childhood. If he experienced various erections and ejaculations during the periods of his sexual abuse, he may actively attempt to avoid those feelings again, during intimate moments with his partner. Since he has already lost what he views as control over his body during childhood, he is eager to gain that control at any moment he can. France (2010) references a theory by Mic Hunter, a therapist, which states that "some withhold or avoid physical intimacy because they come to think of sex as a disgusting act that people inflict on one another" (p.3) . This is a typical reaction to any trauma that affected someone during childhood. The reaction is no different from that of an adult who refuses to get into a pool because of a previously traumatizing experience with water during childhood. In addition to being sexually and emotionally withdrawn, men or women who self medicate with alcohol and drugs would subject their partners to various abuses. They might become physically abusive or self medicated to the point of isolating themselves from their partners.

A re-occurring theme in the survey I conducted was the admission by the victims that they lacked the ability to trust others. It has also been a reoccurring theme in my life. Robyn L. Gobin and Jennifer J. Freyd (2009) reason that "Betrayal trauma theory predicts that experiencing traumas high in betrayal (such as incest) may result in damaged trust mechanisms. Such damage may lead a survivor to be overly trusting, insufficiently trusting, or unable to accurately identify betrayal and respond in a self protective manner" (p. 2). Because 80% of abusers know their victim, the act involves a betrayal of the victim's trust. Who can you trust, when your own father, uncle, mother or brother was the one who violated you? This is all too familiar for me. Everyone's motives are questioned. Every compliment is scrutinized and overanalyzed because for people such as myself, nothing is as it seems. The point of view that everyone has an ulterior motive is commonplace and is very detrimental to a relationship. Since acknowledging the effects that CSA has had on my life, improving my self-esteem and learning to trust are the two areas I focus hard on improving.

The lack of trust and insecurity as illustrated in the short story "Jealous Husband Returns in the Form of Parrot" by Robert Butler, the parrot's behavior reflected a lot of my past ones. Checking cell phones, creating fake email accounts, patrolling MySpace pages of female friends, I've been there and done that whether or not I had a reason to. No partner wants to be questioned about their comings and goings. It creates unnecessary tension and without trust you have nothing. The flip side of the Betrayal Trauma Theory is that if the abuser is one that you need to rely on for survival, such as a parent, the victim may become "blind to betrayal" (p. 2), and become unable to classify a relationship as abusive. It is reported that victims of CSA are 5.44 times more likely to be re-victimized in adulthood. Gobin and Freyd assert that "their inability to label someone as untrustworthy and a damaged 'cheater detector,' sexual abuse victims are often more susceptible to exploitation later in romantic partnerships." Therefore, victims of CSA are likely to remain in abusive relationships. Partners can also be very instrumental to your healing. Knowing the issues that I am faced with, being open with my partner has helped me

tremendously. I have someone to turn to when I am struggling with my feelings towards myself and my relationship. I no longer have to suffer in silence, pretending that everything is fine when I know it's not. By talking about it with him, it's made this journey easier.

Healing broken relationships must start with healing oneself. Victims need to know that healing can be a lengthy process, but it's one you must commit to. There is no hard and fast formula to healing, but there are some basic things that can be done to set you on your way. You must know that you are not alone and there is no shame in your experience. The biggest lesson I learned while writing this paper was the burden of this experience was not mine to bear, as it wasn't my fault. Also, you must talk about it! Victims often times feel as though they are the only ones going through difficult times psychologically. How good it must have felt for that one man on Oprah to know that 199 more could understand and sympathize with what he was going through. Partners play a big role and having someone to talk to at a moment's notice is invaluable as well. Trust can be developed through this supporting act alone. Nothing can prove to be more of a set back than having a partner doubt what you are saying and experiencing is true. If your partner is male, don't chastise him for not being man enough to seek help in overcoming his demons, as he's already coping with the stereotype that he was sexually abused because he failed to be man enough. Learning to forgive yourself and the abuser is an important part in healing. No longer should you give the abuser control over your life and relationships. You cannot simply acknowledge your behaviors, you must commit to getting help.

Annotated References

Deblinger Esther, P. *Questions and answers about child sexual abuse*. Retrieved November 27, 2010, from www.nctsnet.org

Feiring, C., Simon, V. A., & Cleland, C. M. (2009). Childhood sexual abuse, stigmatization, internalizing symptoms, and the development of sexual difficulties and dating aggression. *Article of Consulting and Clinical Psychology*, 77(1), 127-137. doi:10.1037/a0013475

This article examines the development of intimacy issues among 15 year olds. It's a study of 160 youth, which highlights the early manifestations of issues that adversely affect victims of childhood sexual abuse. The issues that it focuses on are ones related to intimacy and dating aggression. I will utilize this article for its statistics and to show the genesis / early signs of these issues that go on well into adulthood.

France, David, *Love Among the ruins*. Retrieved November 27, 2010, from www.oprah.com

This article, examines the impact that male childhood sexual abuse has on the victim's future relationship. It strictly focuses on the male point of view and the male experience.

Gobin, R. L., & Freyd, J. J. (2009). Betrayal and revictimization: Preliminary findings. *Psychological Trauma: Theory, Research, Practice, and Policy*, 1(3), 242-257. doi:10.1037/a0017469

The authors examine the likelihood of women who were victims of childhood sexual abuse (CSA) to succumb to adult abuses. It examines how childhood sexual abuse victims are often rendered vulnerable to unhealthy interpersonal relationships. I will use the research found to supplement and support my argument that the feelings of betrayal that evolve out of CSA, leads to unhealthy adult relationships.

Guelzow, J. W., Cornett, P. F., & Dougherty, T. M. (2002). Child sexual abuse victims' perception of paternal support as a significant predictor of coping style and global self-worth. *Journal of Child Sexual Abuse, 11*(4), 53-72.

This article examines the relationship between paternal support of victims of childhood sexual abuse and its impact on the victim's self-worth. I will use this article to for its mention of theory related to CSA and the negative impact it has on self-esteem.

Jes (2002) "Triggers, Panic Attacks and Flashbacks." *Surviving to Thriving*. Retrieved September 13, 2010. <http://www.survivingtothriving.org/triggers>.

This website is dedicated to providing alternatives to healing for survivors of sexual violence. They section on flashbacks help me define to how it relates to my experience and the experience of others.

Meston, C., Rellini, A., & Heiman.,R.,J. (2006). Women's History of Sexual Abuse, Their Sexuality, and Sexual Self- Schemas . *Article of Consulting and Clinical Psychology, 74*(2), 229-236. doi: 10.1037/0022-006X.74.2.229

This article examines examine whether differences existed between women with and without a history of CSA in the way that they viewed themselves as a sexual person and, if so, whether such differences mediated the link between early unwanted sexual experiences and later adult sexuality.

Senn, T. E., Carey, M. P., Vanable, P. A., Coury-Doniger, P., & Urban, M. A. (2006). Childhood sexual abuse and sexual risk behavior among men and women attending a sexually transmitted disease clinic. *Article of Consulting and Clinical Psychology, 74*(4), 720-731. doi:10.1037/0022-006X.74.4.720

This article is based on a study of adults (21 and over) in a STD clinic in Rochester NY. They present willing participants with a questionnaire and then examine the relationship between those who have been victims of abuse and their noted sexual patterns. I will use this article to supplement my research about the high incidence of promiscuity and risky sexual behavior in victims of childhood sexual abuse.

NELLI SIDOROVA

Sex Trafficking as a Result of Globalization¹

Abstract

Understanding human trafficking involves detailed analysis of various factors that make a certain group of people vulnerable. A combination of several factors contributes to supply and demand in the sex industry and sex trafficking. The most important ones include the history of certain countries, including military conflicts; economic and political breakdowns that result in social instability and poverty; government and legal corruption; biased perception of gender roles; lack of governmental control that lead to profitability and low risk of and for sex trafficking. These factors differ from country to country but they are all considerably exacerbated by globalization, which can be called the driving force behind sex trafficking. This project gives a detailed overview of the sex trafficking phenomenon in the context of globalization and focuses on the question of how globalization has affected the development of this process.

The sex industry has become so diversified that it caters to all tastes and meets any demand of consumers from the First World countries, who have access to a wide variety of “exotic” women from all over the globe (from Brazil, Cuba, Russia, Kenya, Sri Lanka, Philippines, Thailand, Malaysia, Nicaragua and others). The selling of women into sexual bondage and exploitative labor has become the fastest-growing criminal business in the global economy (3)[I’ve added another reference at the end] [ed: can you site this? I find very similar wording in The Internet and Sex Usage, as well as on Wikipedia]. The demand for these services is so high worldwide that the total annual number of individuals trafficked for sexual exploitation is between 500,000-600,000 women. This horrifying business is able to generate billions of dollars (\$39.7 billion profit in 2007 (4:19)) which makes the problem of human sex trafficking one of the most frustrating and discouraging phenomena in the present global society. In fact, it can be viewed as one of the gruesome results of globalization. With the Internet available to everyone and brand new technology used for fraud (for example, for printing fake passports), the number of humans who have been sex trafficked has significantly increased all over the world, affecting mainly people from developing countries.

Although the definition “trafficking in persons” (or “human trafficking”) has been subject to a significant debate, the generally accepted meaning is taken from the 2000 UN Protocol to Prevent, Suppress and Punish Trafficking in Persons. It defines human trafficking as “the recruitment, transportation, transfer, harboring or receipt of persons, by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over

¹ Completed under the mentorship of Professor Robert Wilkes for SOC 03100 D26G: Introduction to Sociology.

another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of prostitution of others or other forms of sexual exploitation, forced labor or services, slavery or practices similar to slavery, servitude or removal of organs” (7).

Although the above-mentioned definition was designed to remove all the uncertainty about the issue, it does not specify what exactly constitutes “the exploitation of prostitution of others or other forms of sexual exploitation”. For this reason, in this paper I will use the definition of human sex trafficking given by Siddharth Kara, who has described the phenomenon in more detail. According to Kara, all sex trafficking crimes have two components:

1. *Slave trade* which includes “acquiring, recruiting, harboring, receiving, or transporting an individual, through any means and for any distance, into a condition of slavery and slavery-like exploitation” (4:5).
2. *Slavery* which can be defined as “the process of coercing labor or other services from a captive individual, through any means, including exploitation of bodies or body parts” (4:5).

The slave trade represents the supply side of the business, whereas slavery corresponds to its demand. In between these two components there is acquisition, movement and exploitation. Especially significant is the fact that girls can be transported “for any distance,” which means that sex trafficking occurs not only within the borders of a particular country, but internationally – between countries – as well. Although the issue of domestic sex trafficking presents an interesting topic in itself, this paper is focused on the international/global aspect of the phenomenon.

Acquisition of sex slaves can occur in five ways: deceit, sale by family, abduction, seduction/romance or recruitment by former slaves. Deceit is assumed to involve a false job offer, or an opportunity to travel or marry a foreigner. As a rule, victims are promised a more prosperous life or a chance to make money to help their families. With lack of economic opportunity, displacement due to wars and various gender prejudices, desperate people take a chance they think may change their lives for the better.

Other victims are sold into slavery by their own parents, who cannot take the strain of extreme poverty. Slave traders offer the most desperate individuals a small payment in exchange for a female child, in addition to monthly remittances their jobs are meant to provide; parents make the heartbreaking decision to sell their daughters. In rare cases, families do this out of greed, gradually becoming accustomed to the monthly remittances from slave owners, and are therefore willing to sell not one but several daughters.

Abduction is not a wide-spread form of slave acquisition, as it is more challenging for sex traders. Although it still exists, other means of acquiring slaves are usually considered less problematic and more effective by slave traders, as girls who are abducted are unwilling to travel and try to escape at every opportunity.

A lot of victims are acquired by means of seduction or romance. In this case, young girls are approached by an agent who promises them never-ending love, gives them expensive presents, and wants them to migrate to a different country to build their life together. The girl is usually sent abroad in advance and is greeted by a brothel owner or slave trader.

The last means of sex slave acquisition occurs when new women are recruited by former slaves. After having worked as prostitutes for a long time, these women come to the conclusion that the fate of a sex slave is the best that they deserve. Sometimes, they even become allies of the slave owners and recruit

new slaves in return for commissions. From a sociological point of view, this phenomenon presents an interesting issue. Although it is hard to believe that women who went through so much suffering and humiliation would want to lure others to the same fate, they do it because they experience a total psychological makeover. In a way, the experience of these girls, starting with the moment they are acquired and continuing in to their actual work in the sex industry, can be considered a functional equivalent of Erving Goffman's "total institution." In Goffman's theory, victims are isolated from the rest of society and are exposed to re-socialization experiences, where their old roles and behavior are substituted with the new ones. Usually, the victims are drugged, beaten and violently coerced into having sex in order to suppress their will and make them more submissive upon sale.

After acquisition has occurred, the slaves are moved from their countries of origin, through transit countries, into destination countries. Victims are moved between countries by all means of transport and sometimes even on foot. In order to cross borders, fake passports are used, or bribes are paid to border guards. The movement usually occurs from poorer regions to richer countries. Trafficking routes primarily start in Nepal, Bangladesh, India, Burma, Cambodia, Laos, Vietnam, Thailand, Africa, Eastern Europe, Latin America and the Caribbean, and victims are transported through transit countries into Western Europe, the Middle East, East Asia, and the United States (4:10).

The exploitation of slaves begins at acquisition. When slaves arrive in destination countries, they are forced to strip naked at an auction and judged by the buyers upon their overall attractiveness, possession of venereal diseases and even race. The judgments of the buyers affect the overall price of these victims. Thus, for instance, the younger the girl, the more valuable she is on the market because there is a less chance that she has a venereal disease. Also, Eastern European women are usually more valuable on the sex market probably because of their race and inherited physical features such as white skin, lighter hair and eyes. [ed: can you explain what particular traits makes their race desirable?]. Richard Poulin gives an example of the sex trade pricing in his article, "Globalization and the sex trade: Trafficking and the commodification of women and children." According to his research, in Western Europe the price for an Eastern European woman is between \$15,000 and \$30,000 whereas a woman from Southeast Asia may cost \$6,000-\$10,000 in Thailand, and young Asian women from Phillipines, Thailand and Malaysia cost \$8,000 in Canada (5). The differences in these prices can be explained by the women's race, background and physical looks.

According to Kara, exploitation of sex slaves occurs in six primary types of venue (4:12):

1. Brothels
2. Clubs
3. Massage parlors
4. Apartments
5. Hotels
6. Streets

Most women become infected with HIV, suffer from severe drug and alcohol addictions, are shunned by their families, and have no prospect of getting any other kind of job. They rarely attempt to escape because slave owners terrorize them and threaten to harm their family members. Moreover, few of them survive past their mid-thirties (4:15).

A combination of several factors contributes to the supply and demand in the sex industry and sex trafficking. The most important ones include national history of certain countries, including military conflicts; economic and political breakdowns that results in social instability and poverty; government and legal corruption; biased perception of gender roles; lack of governmental control that leads to

profitability and low risk of and for sex trafficking. These factors differ from country to country but they are considerably exacerbated by globalization, which can be called the driving force of sex trafficking.

The term “globalization” is usually used to describe a wide range of international processes, from the transnational spread of free markets to the spread of cultural values and norms. It also refers to the idea that the world is interconnected and that events in one part of the world affect outcomes in the other. The forces of globalization affect social realities, including trafficking, in numerous ways.

Some researchers argue that, although globalization may aid traffickers, it may also “improve international collaboration in spotting and fighting such abuses.” (8:111) Furthermore, globalization may improve the standard of living in developing countries and promote awareness of basic human rights, thus making it harder for predators to recruit unsuspecting victims.

According to Sally Cameron and Edward Newman, who compiled and analyzed articles devoted to human trafficking, “on a macroeconomic level globalization has increased demand for cheap, low-skilled labor whereas migration policy has not allowed the free flow of people to fill that demand.” (2:25) At the same time, local consumer markets in developing countries have been affected by the influx of foreign-produced goods, which has created a decrease in domestic production and thus has negatively affected local employment opportunities in poorer areas. In other words, macroeconomic policies have created push and pull factors that promote labor migration but at the same time have not provided everyone with legal means to create [I am a bit confused about what you want me to edit in this sentence...it makes perfect sense to me without any corrections☺] [ed: to do what to this movement?] this movement (2: 27).

Marija M. B. Asis, the author of the article “Human trafficking in East and South-East Asia: Searching for Structural Factors,” has summarized the interconnection between globalization and migration in the following way:

Under conditions of globalization, present migrations (including trafficking) are affected by factors that simultaneously push, facilitate and impede the movement of people across international borders. In the case of volatile and fragile national economics, families and households turn to overseas migration as a strategy to meet their needs (1:189).

This situation, when the demand for labor is not met by legal means of migration, has created a perfect condition for criminal networks to operate. Very often, by the time a woman is reached by the trafficker, she is already looking for a way to migrate from her own country to a better-off land.

Another way in which globalization has increased the vulnerability of people is the way people see the world. As people from third-world countries become more and more aware of living standards and lifestyles in other parts of the world (through television, books and stories), they understand the degree of their “relative poverty” and develop a sense of despair. This motivates them, especially young people, to go to distant lands in search of better lives and greater income.

In connection with technological progress, globalization has facilitated communication between members of criminal networks. Mobile phones and the Internet have made communication easier and faster and at the same time changed the nature of recruitment. Improvements in transportation have simplified international travel as well as human trafficking activities. Moreover, improved and facilitated communications and transportation not only promote the movement of people but also enable immigrants to maintain connections with their countries of origin and destination.

Women in developing countries play a major role in globalization by being involved in the industrial production of goods and services in foreign countries. Some analysts claim that globalization has a liberating effect on historically repressed women from developing countries, as their social and economic situation gradually improves (6). Nevertheless, for some women, globalization has resulted in them circulating as “commodities” in first-world countries. These women are limited in their mobility and sometimes are either forced to become victims of the international sex trade or voluntarily decide to become sex workers in pursuit of better lives.

Understanding human trafficking involves detailed analysis of various factors that make a certain group of people vulnerable to sex trafficking. Although globalization exacerbates these factors to a certain extent, it is not the only process responsible for the development of the phenomenon. A more detailed description and analysis of how and why globalization affects human trafficking would also have to include such factors as inadequate national and international legal regimes; poor law enforcement; immigration/migration laws and policies; inadequate as well as poorly enforced labor laws and standards; corruption – support by state officials of underground criminal networks as well as other social, ideological and geopolitical factors.

Works Cited

- Asis, Marija M. B. “Human trafficking in East and South-East Asia: Searching for structural factors.” *Trafficking in humans : social, cultural and political dimensions* . Hong Kong: United Nations University Press, 2008. 181-206. Print.
- Cameron, Sally and Newman, Edward. “Introduction: Understanding human trafficking.” *Trafficking in humans : social, cultural and political dimensions* . Hong Kong: United Nations University Press, 2008. 1-19. Print.
- Hughes, Donna M. “The Internet and Sex Industries: Partners in Global Sexual Exploitation” *Technology and Society Magazine*, Spring 2000. <http://www.uri.edu/artsci/wms/hughes/siii.htm> Web. 09 April 2011
- Kara, Siddharth. *Sex Trafficking: Inside the Business of Modern Slavery*. Chichester, West Sussex, NY: Columbia University Press, 2009. Print.
- Poulin, Richard. *Globalization and the sex trade: Trafficking and the commodification of women and children*. 2004. http://sisyphe.org/article.php3?id_article=965. Web. 06 December 2010.
- Preface to “*How does globalization effect developing nations?*”. *Opposing viewpoints: globalization*. Ed. Louise I. Gerdes. San Diego: Greenhaven Press, 2006.
- United Nations Security Council. *Protocol to Prevent, Suppress and Punish Trafficking In Persons, Especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime*. Article 3, paragraph (a), 2000. http://www.uncjin.org/Documents/Conventions/dcatoc/final_documents_2/convention_%20traff_eng.pdf . Web. 06 December 2010.
- Zhang, Sheldon X. *Smuggling and trafficking in human beings : all roads lead to America* . Westport, Conn.: Praeger, 2007. Print.

VALERIE SIMURO

Dawning of a New Civilization¹

History shows us repeatedly that man's curiosity and adventurous spirit helped him to survive and thrive, even when food supplies became scarce, climate changes occurred and current living locales became uninhabitable. Primordial man survived simply by picking up and finding new places to inhabit. We see this in the Neolithic Age when earliest man hunted the steppes of Europe for centuries, before slowly drifting toward the warmer climates in search of retreating bison and little horses that were their main food supply. We see this in traces of civilizations that developed along temperate and sub-tropical coastlines of the world from Stonehenge to Peru. We see this in the stamina and determination of the early American pioneers who crossed America to settle in the untamed West.

Despite centuries of development, growth, industrialization and technological advances, twenty-first-century man faces the same challenge as his ancestors. The conservation group World Wildlife Fund (WWF) released a study in October 2002, which revealed a shocking statistic: the Earth will expire by the year 2050. The study found that over the past three decades humans have destroyed more than one-third of the natural world; and at the present consumption rate our planet will no longer be able to sustain its growing population.

The WWF reported that human consumption of the Earth's natural resources has doubled over the past 30 years and continues to accelerate by 1.5 per cent annually. Forests which absorb carbon dioxide emissions have shrunk by 12 per cent due to deforestation, the overexploitation of the planet's oceans have endangered the existence of many forms of marine life, the black rhino, the African elephants and the tiger populations and many species of birds have declined by over 50 per cent in the last ten years. The marine crisis, pollution, over-consumption, shrinking forests, and endangered wildlife has brought us to the brink of our continued existence on Earth. It is unlikely that enough people and nations will curtail their lifestyle fast enough to prevent exhausting our natural resources. As populations increase, it seems inevitable that we will need to expand beyond our world. There is nowhere else on Earth to go. Space colonization is, therefore, the future of man.

If we trace man's history, it becomes evident that transportation, as well as agriculture and water were the keys to building civilizations. Early man lived and hunted in small familial groups; because it was too dangerous to survive alone. They traveled by foot in search of food, water and shelter. The area that they traversed was limited because the only mode of transportation was on foot; and they usually settled near bodies of water. It is likely that man's ingenuity eventually led him to develop farming out of necessity. Once people could control their food source, populations grew.

With animal domestication, the use of the horse as a means of transportation, and the invention of the wheel, man could travel farther and quicker. Humanity spread across the face of the earth. Small communities became cities, and cities became states and nations; once man's innate curiosity and pioneering spirit led him to invent more sophisticated means of transportation and develop paved roads and highways. Man wanted to travel faster and carry more goods, which led to building ships, railroads, motor transport and airplanes. We can now travel thousands of miles in just a few hours. This would

¹ Completed under the mentorship of Professor Judith Stern for Tourism and Hospitality 90.

have sounded like a fantasy a few centuries ago. We now are in the rocket age. Transportation again is key to the survival of man and the creation of a new civilization.

Space colonization is no longer just a fantasy; it is a reality. And space travel is no longer just the domain of government. The U.S. Government allowed for the privatization of space travel with the passage of “The Commercial Space Launch Amendments Act” (H.H. 5382) in 2004, which gave the FAA the power to regulate the private exploration of space. NASA took a different approach to space travel after Congress cut funding to the space program - NASA, in conjunction with private industry, now offers incentives to private companies to develop space technologies. A recent article in Discovery News, by Irene Klotz, entitled “New NASA Moon Plan: Pay Others To Go,” discussed the \$30 million Google Lunar X Prize Competition.

Google is offering \$30 million in prize money for private companies to land and operate rovers on the moon. There are presently twenty-two contenders. NASA chose six of the Lunar X Prize contenders to work with and awarded them contracts worth a total of \$30 million for any technical information gleaned from their privately funded lunar probes. The companies chosen are Astrobotic Technology Inc. of Pittsburgh, Pennsylvania, the Charles Stark Draper Laboratory Inc. of Cambridge, Massachusetts, Synetics Inc. of Huntsville, Alabama, Earthrise Space Inc. of Orlando, Florida, Moon Express Inc., of San Francisco, California, and Team FREDNET, the Open Space Society Inc., of Huntsville, Alabama. This competition is similar to the \$10 million Ansari X Prize Competition offered in 2004 for privately funded human space flights. A team led by aerospace designer, Burt Rutan won the Ansari Prize.

Competitions like the Google X and Ansari X are vitally important to the development of space flight technology; and will serve to energize our stalled economy by creating thousands of jobs nationwide, as spaceports are developed, and commercial transport ships are built, and demand increases for all types of interrelated goods and services. Just as Lindbergh’s historic flight across the Atlantic in 1927 helped to create our \$300 billion aviation industry, so will the development of a viable space transport ship help to create the space travel industry and provide a boost to our economy. President Obama in his State of the Union address stated that to secure our economic future, we have to out-innovate and out-build the rest of the world. No one is innovating more than those building America’s commercial space industry. This race to be the first and to build the best will create, as yet untapped opportunities in tourism and economic development.

The reality of “settling space,” however, is; presently cost-prohibitive. On average, it currently costs approximately \$20,000 per pound to get supplies into low-Earth orbit where the International Space Station is located. It would cost approximately \$400,000 per pound to land something on the Moon. This means the cost of transporting supplies, such as water, oxygen or hydrogen to the lunar surface is about \$25,000 per ounce. The first company to land and operate rovers on the Moon will claim the \$30 million prize. In the best-case scenario, the technical information learned from the future winner could be used to find an economically feasible means of building supply ships to support the space flight industry.

Adventurer and airline owner, Sir Richard Branson has developed his own space company, Virgin Galactic. His goal is to launch six paying passengers in his SpaceshipTwo by late 2012 for sub-orbital altitudes. But Branson also has visions of orbiting hotels and trips around the moon. Virgin Galactic intends to be the world’s first commercial company to promote space tourism, a goal likely to be contested by the U.S. Company Space Adventures, which has brokered the seven civilian trips to the International Space Station (ISS) so far. Virgin Galactic has commissioned 42 private travel agencies in North America to sell its tickets. A Virgin Galactic Accredited Space Agent must complete a rigorous training program sponsored by both Virgin Galactic and the Kennedy Space Center.

Competition sparks innovation and creativity. One day, private space travel will be a reality for the ordinary consumer, like flying in an airplane today. There are many privately sponsored, multi-million dollar competitions, some in conjunction with NASA funding; for developing different aspects of space flights. They range; from designing space habitats to developing microwave-beam propulsion and; rockets that can launch a vertical takeoff and landing. The scientific data that NASA can learn from these private competitors can only benefit our civilization and further our knowledge of space.

The space industry itself has been active since the early 1950's. Space Tourism has progressed steadily over those years:

- In 1958 NASA was founded.
- In 1961 Mercury Freedom 7 carried the first U.S. astronaut into space; and the American spaceship landed on the Moon.
- In 1962 the U.S. Mariner 2 reached Venus.
- In 1963 the USAF X-15 space plane set the world altitude record.
- In 1967 Barron Hilton proposed designs for hotels in space.
- In 1969 Neil Armstrong and Edwin Aldrin Jr. walked on the Moon.
- In 1972 Pioneer 10 traveled through the Asteroid Belt.
- In 1973 The first U.S. Space Station was launched.
- In 1978 Pioneer spacecraft reached Venus.
- In 1979 Pioneer spacecraft reached Saturn and the Voyager spacecraft reached Jupiter.
- In 1985 the U.S. travel company, Society Expeditions started offering short trips to low orbit but failed to develop the ship.
- In 1989 Shimizu Corporation designed an orbital hotel.
- In 1993McDonnell Douglas launched a reusable test rocket.
- In 1995 the Space Transportation Association in Washington D.C. started a study of space tourism with the cooperation of NASA.
- In 1996 the "X" Prize competition was launched. NASA awarded a \$900 million contract to Lockheed Martin to build and fly an unmanned, reusable rocket test vehicle.
- In 1997 NASA held a workshop to consider issues relating to establishing space tourism.
- In 1998 Business Week, Fortune Magazine, and Popular Science all published articles on U.S. venture capital companies that were developing reusable launch vehicles.
- In 2001 an American businessman became the first paying space tourist to reach the International Space Station aboard a Russian ship. Starchaser Industries successfully launched the first privately built sub orbital rocket.
- In 2004 the FAA granted the first commercial Rocket Launch Vehicle (RLV) license. Burt Rutan made history when SpaceShipOne flew into sub orbit to win the \$10 million Ansari X Prize.
- In 2005 Virgin Galactic started accepting reservations for sub orbital space flights. Plans are presented to build commercial spaceports. The FAA published rules and regulations for commercial space travel.
- In 2006 Bigelow Aerospace launched inflatable orbital habitats in space, and announced plans to develop a private space taxi service.
- In 2008 the first privately financed spacecraft reached orbit.
- In 2010 Space Exploration Technologies (SET) successfully orbited and recovered its space capsule. This marked the first time a private company had successfully recovered its orbiting spacecraft. SET announced it is developing a craft to carry cargo to the International Space Station (ISS) as part of NASA's commercial orbital transportation program. Boeing offers private individuals and commercial enterprises flights to the ISS in its CST-100 craft.

- In 2011 NASA announced a new plan to have the private sector get its astronauts to orbit. Virgin Galactic tests its sub orbital spaceship. Bigelow Aerospace developed expandable space exploration vehicles. A new spaceport built in Curacao for Aerospace's Lynx rocket plane.

Technology is always the key to developing transportation, industry and new worlds, and indeed, it is true for the development of space tourism. However, at this point mankind's focus seems to be only on the technologies that will get us into space and the money that can be made by space colonization. Man's eventual and inevitable journey to colonize outer space also presents us with the unique opportunity to build a completely new civilization. Man has lived in survival mode since the beginning of time. Fear of scarcity perpetuated a cycle of accumulation of material goods at the expense of future generations and the environment. This cycle of self-interest has eroded our ethical values. It is time to consider how to create a new civilization, based on ethics, respect for each other, the environment and future generations. Just because that is how we have always done it, does not mean that is how it must be. We have the choice to create a sustainable and peaceful future.

Much work has been done over the past 51 years; to make space colonization a reality. It will happen rapidly. First, workers will build the infrastructure, and then businesses will develop it. As the world approaches this new beginning, we need to raise our level of consciousness to deal with its challenges and opportunities in new ways. We are the pioneers of this new planetary civilization.

Again, transportation is the key to this new civilization. As our technology advances; a trip into space will become a commonplace occurrence. Most people will remain on Earth, but others will build new lives in space colonies. Those colonies will become states and, those states will become nations. From there man's adventurous spirit will move into deeper space to explore new, uncharted planets. It is an exciting prospect, yet also a daunting responsibility because our challenge will be to create a better way of life.

Bibliography

1. Pausanias, Description of Greece with an English Translation by W.H.S. Jones, Litt.D. in 4 Volumes. Volume 1. Attica and Cornith, Cambridge, MA, Harvard University Press; London, William Heinemann Ltd., 1918.
2. Wells, H.G., A Short History of the World, 1922.
3. Edited by Schulz and Seidel, Egypt: The World of the Pharaohs, 2007.
4. Earliest Known Human Had Neanderthal Qualities, Discovery Channel, August 22, 2008.
5. Alexander, R. D., How Did Humans Evolve? Reflections on the Uniquely Unique Species, University of Michigan Museum of Zoology, 1990.
6. Sykes, Brian, The Seven Daughters of Eve: The Science That Reveals Our Genetic Ancestry, 2001.
7. Travel From Europe and the Middle East – Ancient And Medieval Travel: Epic Heroes, Pilgrims, And Merchants, Renaissance Travel: Exploration And Empire, Internet link: <http://science.jrank.org/pages/9129/Travel-from-Europe-Middle-East.html>.
8. Travel and Transportation in Ancient Greece, Internet link: <http://fjkluth.com/travel.html>.
9. Travelers On The Silk Road, Internet Link: <http://www.silk-road.com/artl/stravelmain.shtml>.
10. Space Tourism, Internet Link: <http://www.spacefuture.com/tourism>.
11. Civilization, Internet Link: <http://www.thefreedictionary.com/civilization>.
12. Lectures on Ancient and Medieval European History, The History Guide, Internet Link: <http://www.historyguide.org/ancient/lecture1b.html>, Steven Kreis, 2000, 2008.
13. Ancient Civilizations, Edited by Robert Guisepi, Internet Link: http://history-world.org/ancient_civilization.html.
14. Toynbee, A. J., A Study of History, Vol. 1, London: Oxford University, 1935-1948.

15. Civilization, Wikipedia, The Free Encyclopedia Retrieved 08:37 November 29, 2009, Internet Link: <http://en.wikipedia.org/wiki/Civilization>.
16. Jervis, Nancy Ph.D, What is a Culture?, China Institute, The University of the State of New York, 2006.
17. Civilization, State Master Encyclopedia, Internet Link: <http://www.statemaster.com/encyclopedia/Civilization>.
18. Edited by Patrick U. Petit, Earthrise: The Dawning of a New Civilization in the Twenty-First Century, A Compilation of Articles by Leading Pioneer Organizations, 2005.
19. Toffler, Alvin and Heidi, Creating a New Civilization: The Politics of the Third Wave, Atlanta, Georgia: Turner Publishing, Inc., 1995.
20. Life, as we DON'T Know it, Article by Helen Kennedy, New York Daily News, December 3, 2010.
21. A Message For Humanity, Edited by George S. Robinson, Internet Link: <http://civilizationoflife.com>, 1989.
22. Migratory Manifesto For a Space Civilization, Editorial by George S. Robinson, Internet Link: <http://www.cosmos-club.org/web/journals/2004/robinson.html>.
23. House Passes Senate Version of 2011 NASA Funding Bill, Internet Link: <http://www.cbsnews.com/network/news/space/home/spacenews>.
24. The Space Settlement Initiative, By Alan Wasser, Internet Link: <http://www.spacesettlement.org>.
25. Private Rocket Ship Breaks Space Barrier, By Alan Boyle, Internet Link: http://www.msnbc.msn.com/id/5261571/ns/technology_and_science-space, 2004.
26. Private-Spaceflight Bill Signed into Law, by Alan Boyle, Internet Link: <http://www.msnbc.msn.com/id/6682611>, 2004.
27. To Build Bifrost: Developing Space Property Rights and Infrastructure, By Thomas Gangale, and Marilyn Dudley-Rowley, OPS-Alaska and San Francisco State University, Petaluma, CA.
28. Policy Overview, Commercial Spaceflight Federation, 2009.
29. Lifeboat Foundation Space Habitats, By James Dowhring, Michael Anissimove, and members of the Lifeboat Foundation Scientific Advisory Board.
30. Self-sufficient Space Habitat Designed, By Carolyn Barry, COSMOS Magazine, October 9, 2007.
31. Mr. B's Big Plan, By Geoffrey Little, Air & Space Magazine, January 01, 2008.
32. Bigelow Aerospace Advances Work On Full-scale Space Habitat, By Leonard David, Special Correspondent, Space News Business Report, August 25, 2008.
33. Taxi Service To Space Pads Looking More Feasible, By Irene Klotz, Discovery News, June 4, 2010, Internet Link: <http://news.discovery.com/space/space-habitats-taxi.html>.
34. New NASA Moon Plan: Pay Others to Go, By Irene Klotz, Discovery News, October 20, 2010, Internet Link: <http://news.discovery.com/space/space-habitats-taxi.html>.
35. Personal Spaceflight Industry – Reflections on the 5 Year Anniversary of the Ansari X Prize, By Peter H. Diamond, X Prize Foundation Chairman & CEO, The Launch Pad, October 4, 2009.
36. Gorilla Food: A Small Green Business, By Robert Ludvig, Organic, Small Business, September 28, 2010.
37. Why Every Company Should Examine Its Trash, By Jonathan Bardelline, July 30, 2010, Internet Site: <http://www.greenbiz.com/news>.
38. Why We're Getting Recycling All Wrong – And What Can Be Done About It, By Paul Smith, June 11, 2010, Internet Site: <http://www.triplepundit.com>.
39. Welcome to the Green Restaurant Association, Internet Site: <http://www.dinegreen.com>.
40. Welcome to USGBC, United States Green Building Council, Internet Site: <http://www.usgbc.org>.
41. United Nations. 1967. Treaty on Principles Governing the Activities of States in the Exploration of Outer Space, Including the Moon and other Celestial Bodies, 610 U.N.T.S. 205. Internet Site: <http://www.iasl.mcgill.ca/spacelaw/outerspace.html>.
42. White, Wayne N., Real Property Rights in Outer Space, Proceedings, 40th Colloquium on the Law of Outer Space, p.370, 1998, Internet Site: <http://spacefuture.com/archive>.

43. System of Property Rights in Outer Space, Shin Hongkyun, United Nations, Republic of Korea Workshop on Space Law.

44. Goldman, Nathan C., American Space Law: International and Domestic, Iowa City, Iowa, Iowa State University Press, p.70.

45. Dudley-Rowley, Marilyn, and Thomas Gangale, Sustainability Issues of Long-Duration Exploration of the Moon and Mars, New Trends in Astrodynamica and Applications II, June 3, 2005, Princeton, New Jersey.

AMABELLA CHARMAINE LAMBINICIO

The Economic Issues Regarding “Going Green”¹

Abstract

The purpose of this research is to exemplify the need for countries such as the United States take more action towards the implementation of rules and regulation regarding sustainable development. The research examines the costs, sacrifices, and savings of countries that are “going green.” The most important aspect of the research is looking at the infrastructure of countries that are “going green.” Are they mostly rural and agricultural societies? How many people reside in their urban areas? What kinds of governments do those “green” countries have? Where are the countries that are strongly implementing sustainability efforts generally located? Do their locations, seasons, and general weather patterns matter?

These questions will be answered and elaborated upon in an effort to stir conversation about the need for sustainable development and the benefits that come along with it. The United States has not necessarily taken a back seat in sustainable development but in comparison to other developed nations, the efforts of this country will come under strenuous evaluation. The main question under investigation in this research is: what are the economic, political, and social issues regarding “going green?”

Countries Going Green

Germany is well known for its efforts in [ed: green?] policy making, which are lenient to sustainability development and renewable energy (Fitzgerald 6). The German government has implemented feed-in tariffs where the sources of renewable energy are meant to be local [ed: can you explain this? Not clear to a lay-reader. maybe move this here to explain: Feed-in tariffs necessitate a network of operators to purchase all renewable power available to them from efficient generators that run on renewable energy at prices set by the government.]. The effects of the feed-in tariff amongst others [ed: who are these others?] are stimulating demand for renewable energy, job creation and an export market. The idea behind the government intervention is to have a stable market for renewable energy. The government puts the price of renewable energy above the production price, giving the producers sustainable profit (Fitzgerald 6).

Feed-in tariffs are not uncommon in countries in the Europe Union (EU). According to the author of *Emerald Cities: Urban Sustainability and Economic Development*, Joan Fitzgerald, there eighteen European countries have implemented the tariff in their policies. The feed-in tariff is also a dominant tool in policies for the benefit of the promotion of renewable energy.

¹ Completed under the mentorship of Professor Eric Rothenburg for Economics 12.

Fitzgerald states that German banks also take into consideration the benefits of the renewable energy market. The banks offer loans to citizens who need financial backing for renewable energy initiatives, offering one to two percent below market loans for these initiatives on the first seventy-five percent of the project's costs.

Furthermore, looking into Fitzgerald's research, Germany's history shows the implementation of earlier laws that provide for the benefit of sustainable development. In 1991, Germany's electricity feed law (EFL) set the price for wind and solar energy at ninety percent of the retail electricity rate. This means that purchasers had a ten percent discount on their electricity spending if they converted to wind or solar energy. They would also get a more discounted price if they used energy from biomass, landfill gas, hydropower, and sewage gas. They could purchase these alternative energies at eighty percent of the retail price of electricity, meaning twenty percent off of the price of electricity. In 2000, Germany enacted the Renewable Energy Sources Act (EEG) to make the EFL stronger, and updated the EFL to make it more applicable to the contemporary issues arriving with the new millennium (Fitzgerald 6).

As a precaution to the future development of the natural world, Germany implemented as policies that will affect generations and generations to come. In essence, Germany is implementing long-term policies for the future to develop a healthier and sustainable country.

In the 2010 Environmental Performance Index (EPI), a survey conducted by Yale and Columbia Universities, it was found that the richest countries in the world, such as the United States and China, fall short [d: with what?]. Iceland sits on top; Switzerland, Costa Rica, and Sweden follow the rankings with EPI scores that are considerably far behind the 2010 environmental sustainability leader [ed: which is who?]. The 2010 EPI ranks 163 countries on a variety of performance and policy enforcement indicators, which cover both environmental public health and ecosystem vitality.

The Ministry for the Environment in Iceland published a strategy report in 2002 called *The Welfare for the Future: Iceland's National Strategy for Sustainable Development 2002-2020*. In it, the ministry explains the roots of the country's success in sustainable development. The foremost acknowledgement that the country makes is the United Nation's Agenda 21, which encourages countries to create strategies for their sustainable development. Agenda 21 was established at the UN Conference on Environment and Development in Rio de Janeiro in 1992. The goal of that conference was to have each country present their strategies at the tenth anniversary of the conference in 2002.

The outline of Iceland's strategy was to first not have a strategy built from the top seats of the government down to the everyday citizens [ed: this sentence is unclear]. Iceland's Ministry for the Environment sought [ed: what from?] the public sector, non-governmental organizations, interest groups, and local governments. The publication announces its strategy, lasting well into the year 2020.

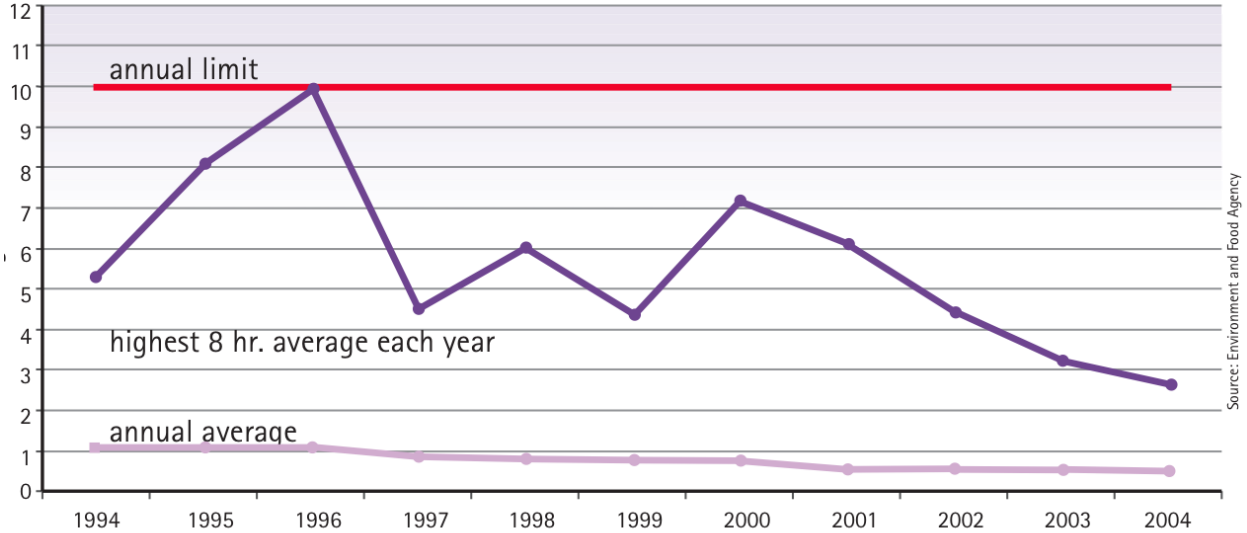
The main purpose of the strategy is to: 1) set long-term goals, 2) set priorities for the near future and 3) define and develop criteria to measure progress. The strategy is not an implementation plan, but it can help authorities and others to prioritize projects and gauge the success of trying to promote environmental protection and the quality of life.

--*The Welfare for the Future: Iceland's National Strategy for Sustainable Development 2002-2020*

Iceland's report and its position as the world's top environmentally-friendly country exhibits? the road that needs to be taken by other countries that have yet to solidify a governmental and private response to rapid climate and environmental change. Alex Steffen, an environmental activist and cofounder and executive editor of WorldChanging.org, said in a lecture for a Technology, Entertainment, Design (TED) conference, "while this society [of humans] without a doubt the most prosperous and dynamic the world has ever created its got some major, major flaws. One of them is that every society has some ecological footprint. It has an amount of impact on the planet that's measurable." Hence, the response of countries like Iceland, which has changed its policies to affect the future of existence and survival as a society, and also their contribution to the sustainability of the human race. An individual's life on Earth is measurable; the lives of other species are measurable – that is why we have "endangered

species” all over the vast world. The life that the planet Earth can sustain is most definitely measurable and the efforts of every society are needed to help sustain us.

Atmospheric carbon monoxide concentrations near Grensásvegur in Reykjavík



² *Welfare for the Future: Iceland's National Strategy for Sustainable Development*

Megacities: Biggest Contributor to Human Ecological Footprint on Earth

The majority of environmental abusers are, for the most part, living in what is termed by scholars as “megacities”. These cities are not in the countries at the top of the Yale and Columbia Universities 2010 Environmental Performance Index. Tokyo, Mumbai, Shanghai, New York City, Los Angeles, London, and Paris are cities that have over ten million inhabitants - sometimes double or triple that number. Tokyo, Japan is the most populated city, with more than thirty-four million inhabitants, according to *City Population*, a research based website. Canton, China follows, with a population more than twenty-four million people. China alone has more than a hundred cities with populations over one million.

What effect do these megacities have on the environment? Almost all of the countries to which those cities belong rank low in the EPI. The United States ranks at 60 and China, 121. According to an article written for Bloomberg.com, “China's Environment Accidents Double as Growth Takes Toll,” published in July 2010, “China, the world’s largest polluter, said the number of environmental accidents rose 98 percent in the first six months of the year, as demand for energy and minerals lead to poisoned rivers and oil spills.” As cities expand into megacities, population inevitably follows in growth; or as population grows cities expand and possibly rise to megacities. The rise of populations in urban areas is disastrous for the environment. But population increase also brings the lack of availability [ed: of what? resources?] to accommodate everyone. These accommodations include adequate amount of food supply and proper shelter for everyone dwelling in that specific urban area.

² *Welfare for the Future: Iceland's National Strategy for Sustainable Development*. The decreasing trends in carbon monoxide emissions in the capital of Iceland exemplifies the effects of proper regulations on development in the country.

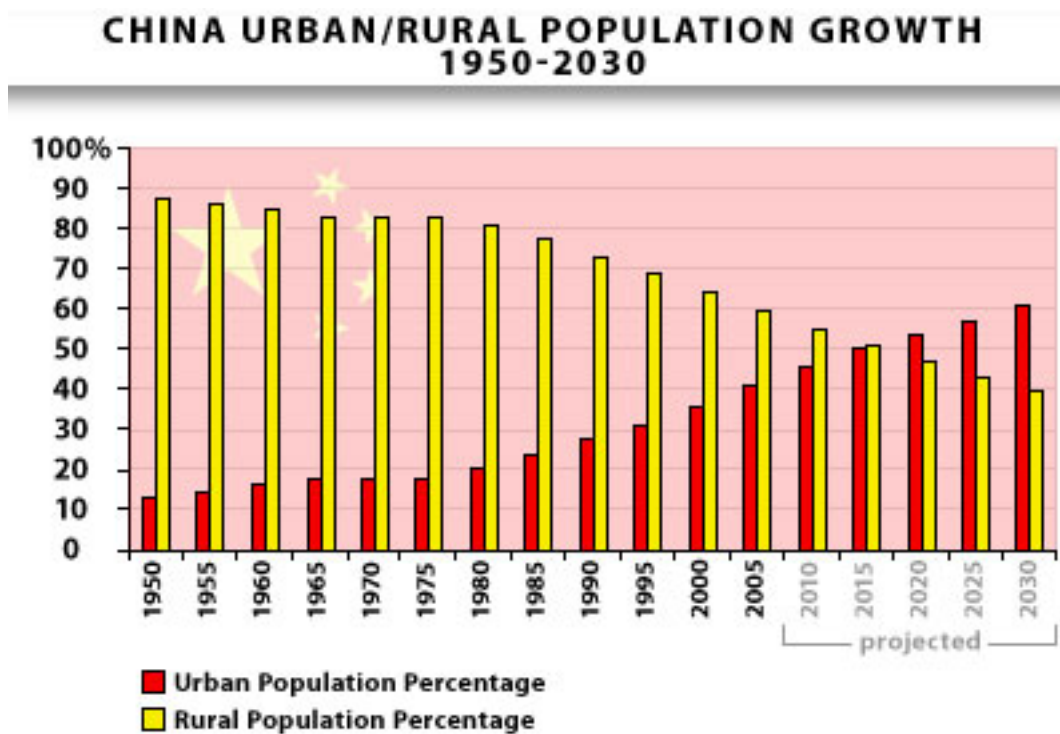
China's government is spending huge amounts of money to provide for the welfare of the environment and its people. But the factories that dominate their cities are filled with toxic waste and acid that are regularly dumped into rivers and oceans. The materials used in those factories continuously harm the workers and the environment. According to Bloomberg.com, "The world's largest metal and energy consumer also has the worst coal-mine safety record, with an average of seven deaths each day in accidents last year." In addition, "local governments are trying to develop their economies and the thinking is 'get rich first, worry about the pollution later,' Yang Ailun, head of the climate change unit for Greenpeace, said in Beijing. 'The central government is very aware that the current economic model is unsustainable.'"

The infrastructures of megacities are built to provide for the growth of the economy. The growth of the economies has lacked regulation in many aspects, such as the extent to which companies grow in accordance with the environment. Almost all businesses have a dumping ground of waste created by the people inside their buildings. As urbanization increases, certain countries have adapted sustainability policies to protect cultural heritage, which includes the environment in which their culture finds its roots. Countries like Norway have provided laws and regulations to specify where construction and urban development can start and end. The Norwegian Ministry of the Environment provides a website for its citizens to take note of the state of environmental developments in the country. The website indicates that changes in the way buildings are used and weak maintenance can influence entire cultural environments. However, many local communities in Norway are showing an increasing interest in looking after their cultural heritage. Norway's laws and regulations require local, regional and national authorities to take cultural heritage considerations into account in planning and development processes ("Cultural Heritage"). Norway ranks fifth in the EPI ranking.

Megacities have poor environmental policies, for their prime interests are for the benefit of their economy. The growing number of cities in China and the America are now answering to the growth of interest in sustainable development. Not only for the benefit of having a sustainable future, but economically as well. German cities like Freiburg have implemented policies in its sustainability efforts, starting in the 1970s, that created jobs in their city. (Although Freiburg, with its population of only a little more than 200,000, is not considered a megacity.)

Freiburg's sustainability initiatives include an ordinance from 2004 that necessitate the city to obtain ten percent of its electricity from renewable resources by 2010, a goal that is closely attained but not fully (Fitzgerald 3). In 1986, the city adopted guidelines for an energy development strategy policy called SolarRegion (Fitzgerald 2). "The three pillars of the SolarRegion strategy are energy conservation, use and development of new technologies, and use of renewable energy. Each leg, in turn, contributes to an economic development strategy" (Fitzgerald 2). Freiburg's initiatives led to the creation of jobs and a significant contribution to the economy. More than three percent of Freiburg's labor market comprises of an industry in renewable technology and other related industries. Elsewhere in Germany, the law states that every new house built must waste no more than 75-kilowatt hours per square meter (kWh/m²) per year (roughly a quarter of the energy lost from a typical Victorian house in Britain) but the specification in Freiburg is radically lower ("Is this the Greenest City in the World?"). In Freiburg, the law indicates 65-kWh/m², and currently they are negotiating to change this to 50 or 45-kWh/m². In a smaller city like Freiburg, such laws and regulations are easier to implement than in megacities.

According to Bloomberg.com, China has a high rate of violations of environmental laws and regulations as it continues to develop its urban societies. Urbanization is unavoidable in a country where urban areas generate sixty percent of the country's GDP and eighty-five percent of the GDP growth. In addition, the World Bank estimates that sixty percent of the Chinese population will live in urban areas by 2015. The violations against environmental laws and regulations in China are inevitable as the density of each city grows. If the populations in these cities are more evenly dispersed as new cities emerge, the regulations can be better implemented.



³ *China: Rural Migration and Plugging the Rural-Urban Gap*

The Importance of “Going Green”

The importance of sustainable development and “going green” is to create a more sustainable future for human existence on Earth and for their coexistence with the natural world.

Thomas Robert Malthus hypothesized in his most famous work, *Essay on Population*, that unrestrained population growth always exceeds the growth of means of subsistence. Malthus's hypothesis asserts that populations always have a tendency to push above the food supply. His research came from an empirical observation of the state of the lower class, which increases as the population grows. In the same way, the lower class is always the injured party as unsustainable or environmental unfriendly activities continue.

The people most involved in creating waste that is dumped in rivers and oceans, are factory owners and employees. The rich own the factories and are responsible for the regulations appointed to the workers. The workers in factories are generally lower or working class. They are responsible for executing the purpose of the factories and the orders of the owners. They are, for the most part, exposed to whatever waste product any factories creates and they are also, most importantly, responsible for waste disposal. Factories employ people who are not necessarily well-educated. They usually operate assembly lines that do not necessitate specialization. Factory workers, in turn, are usually immigrants from rural areas looking for higher wages. Poverty is usually equated with factory workers because most are uneducated and remain uneducated. Factory workers are also poorly paid and benefits are at a minimum.

³ *China: Rural Migration and Plugging the Rural-Urban Gap*. The graph shows the importance in rural to urban migration in China and the effects that it has on the environment.

They are not guaranteed safety and rights. Developed nations have taken advantage of this and outsourced much of their production elsewhere.

The importance of “going green” for these factories is not only economical but obviously environmental. Factories that use rivers as dumping areas have contributed to the current decline in rivers worldwide and to the scarcity of drinkable water. *Discover* magazine found that pollution, urbanization, and construction of dams and reservoirs are jeopardizing the water supply for nearly 80 percent of the global population.

The Benefits of Environmental Improvement by A. Myrick Freeman III differentiates the concept of benefits and the effects of environmental pollution. Freeman indicates that pollutants, people or things, can affect themselves and the environment directly or indirectly through different networks. Pollutants can affect human health, which is measured by mortality rates in regions that are developing or urban areas, and sometimes in rural areas. Pollutants can also have effects on certain activities that humans take part in, such as water-based recreation and some sports. Most importantly, pollutants have effects on the availability of goods and certain services; as urbanization and factory productivity increase, there is an inverse relationship with agricultural productivity or the deterioration of materials and natural resources. Controlling pollutants, according to Freeman, will reduce the magnitude of these effects.

The measure of the benefits of controlling pollutants and to regulating pollution is calculated by the values that individuals put on the effects (Freeman 2-3). If a society thinks that they do not need a certain body of water, they might choose to dump waste in them and the effect on them is minimal, because they have found no value in that body of water. Sometimes, the lack of value that individuals place on the effects of pollutants to the environment is due to lack of education on the matter.

The benefit of environmental improvement is measured monetarily. If there were fewer poor people suffering from illnesses brought on by pollution, there would be more people be working and contributing to household incomes and the national GDP. The monetary values attached or assigned to the effects of the activities of the pollutants are provided by, once again, individuals’ perception of value.

“Going green” has become a money-making industry in itself, with “green” products specially labeled and stereotypically expensive. The importance of being “green” is also more than the obvious, which is creating a sustainable living environment for humans and the species that give them nutrition and proper living. The other importance in being “green” is the mentality that living sustainably should be a norm. If people believed that living sustainably was important, then accepting and implementing laws, policies, and regulation towards the environment and the usage natural resources would be easier.

The United States of America “Going Green”

In 2008, the United States entered the worst economic period since the Great Depression. At the same time, the “most powerful nation in the world” voted Barack Obama to be the successor to President George W. Bush. President Obama immediately implemented urban policies as effects of rapid climate change become much more evident, creating the White House Office of Urban Affairs (Fitzgerald 9). During his campaign, Obama supported a ten-year clean energy plan that would cost \$150 billion and would create five million jobs (Fitzgerald 9).

During this time, the Center for American Progress and a coalition of labor and environmental groups commissioned researchers at the University of Massachusetts Amherst’s Political Economy Research Institute to produce a guide, which outlines a \$100 billion short-term clean energy and jobs stimulus package that would create two million jobs in two years through renewable energy, energy efficiency, public transportation, and related sectors (Fitzgerald 9-10). The result of this research is called *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy*. The Apollo Alliance released *The New Apollo Program: An Economic Strategy for American Prosperity*, another guide and advocacy for a ten-year, \$500 billion investment in renewable energy, energy efficiency, and related sectors to create five million jobs (Fitzgerald 10). The Center for Transit-Oriented

Development’s *jumpstarting the Transit Space Race: How the New Administration Could Make America Energy-Independent, Create Jobs and Keep the Economy Strong* argues for a massive investment in public transportation as economic stimulus and as urban and environmental policy (Fitzgerald 10).

As these organizations pushed and fought for a federal initiative in sustainable development, President Obama included “green” projects directed towards cities in the \$780 billion stimulus package, also known as the American Recovery and Reinvestment Act. Five hundred million dollars of stimulus money was reserved for the creation of job training geared towards “green” occupations. The Obama stimulus package also gave an opportunity for advancement to disadvantaged individuals, such as the unemployed, who would move into the “green” economy (Fitzgerald 10).

Cities are the center and the force behind the United States’ economy. In effect the urban policies implemented by Obama would be beneficial to their economies as well. Austin, Boston, Chicago, New York, Los Angeles, and others have adopted policies requiring renewable energy and green buildings. These cities have expanded “green” areas by creating more spaces for parks and trees. Also, public transportation plays a major role in the development of these urbanized areas. These cities have heavily invested in buses, subways or trams, bike paths, and walking paths, the goal of which is to reduce car usage and air pollution,. Their parks have also reduced storm water run-offs or the water that the soil or ground, trees, and plants cannot absorb that run-off to flood streets and create huge puddles . Since cities are the suppliers of carbon emissions and economic activity, innovative projects by cities to solve the climate problem are employed (Fitzgerald 12). “Achieving green economic growth with justice is the challenge of the century” (Fitzgerald 12).

The importance of the United States “going green” lies in its influence on the world. The United States has set the contemporary standards in many areas, such as economy, academia, and media. If the country developed a more comprehensive implementation of “going green,” it would be a leading example, capturing the attention of other countries that have yet to implement sustainable development. The United States is also one of the most densely populated countries, with nine major cities that have more than a million inhabitants each. It is hugely influential, but in terms of environmental sustainability, it ranks in the Environmental Performance Index at number sixty. Moreover, it has yet to sign any global agreements on policies regarding pollution, such as the Kyoto Protocol, a treaty for the reduction of four greenhouse gases (carbon dioxide, methane, nitrous oxide, sulfur hexafluoride). The United States is the only country to not contribute to the ratification of this treaty.

The Copenhagen convention followed and even with the environmental policy lenient Obama administration, the United States failed to ratify or acknowledge the efforts and policies of the United Nations framework for climate change. This exemplifies the lack of compliance by one of the biggest contributors to the damage on the environment and human footprint on Earth. Even the Republic of China approved of global compliance to ratify the Kyoto Protocol.

Conclusion

Like artistic and literary movements, social movements are driven by imagination ... Every important social movement reconfigures the world in the imagination. What was obscure comes forward, lies are revealed, memory shaken, new delineations drawn over the old maps: It is from this new way of seeing the present that hope emerges for the future ... Let us begin to imagine the worlds we would like to inhabit, the long lives we will share, and the many futures in our hands.

--Susan Griffin, environmental philosopher. Quotation found in Anna Lappé’s *Diet for a Hot Planet*

Every society and era must reconcile actions for what is empirically needed for the benefit of humankind and growth. The industrial revolution ignited the ingenuity of human beings . At the same

time, it ushered in effects that continuously harmed the environment and human beings. What the world needs now is more innovation towards a sustainable future. The natural world is desperately crying out for the unification of countries to handle rapid climate change, and to avoid further contributing to it. The world needs not one individual to speak on behalf of environmental reform , but many individuals.

ALEXANDRA KOROLEVA

Consequences of the Grave¹

“...Into that darkness –The bodies collapsed, swollen with gas...”
—Douglas Pearce, “She Said Destroy”

Trench warfare had existed as a tactic since the 18th century, but only came to the foreground of modern warfare during the surge of its implementation in World War I. However, it was prominently employed in another prolific war that is symbolic of the modern era – The American Civil War. Utilized by Grant in the battles of Vicksburg and Petersburg, it proved to be one of the keys to his winning both – as the Confederate army initially disregarded the Union constructions as ineffective and harmless. During the Siege of Petersburg especially, both sides constructed entrenchments, in a model precursory to that of World War I.

Though war, in each and any of its countless resurrections throughout history, has never failed to provide an uncompromising theater of pain and misery – and no manifestation is “better” or “worse” than another – a bloody foreshadowing of the devastation and Boschian humanity the 20th Century and with it, trench warfare would bring also came during the Siege of Petersburg – in the Battle of the Crater.

Having started out as what seemed like a brilliant plan on the part of the Union Army, led at the time by George Meade, it soon deteriorated into one of the most shameful and humiliating fiascos of the American Civil War – and arguably, war at large. The plan consisted of secretly placing explosives under a section of a Confederate entrenchment, and after they were detonated, charging through the rupture in the enemy line. A Black regiment had been given specific instructions and training to do this – but its use was retracted at the last minute to avoid political issues that could arise in the North due to the massive sacrifice of Black soldiers in the event of failure of such a risky operation. The regular division sent to replace them had not been sufficiently trained. After the successful explosion, amid the chaos of men and fallout, they charged directly into the crater – to their deaths. As the hole was too deep for the men to scale the walls back to ground, and there were no supplies to help them in doing so, they were now trapped. Though the majority of Confederate soldiers present were killed in the initial blast, reinforcements soon arrived and made extremely short work of the helpless Union soldiers. Another Union regiment was summoned to help – and because of the chaos of the situation mostly ended up in the crater as well. The farcical massacre that ensued became a mark of shame that the Union would bear until the end of the war, and even though Petersburg at large was a Union victory, this battle left a black stain on their record.

As the tensions in Europe mounted in the early 20th Century and World War I approached, the rapidly evolving field of weaponry had vastly exceeded the concurrent developments in mobility and logistics, leaving the military in an incongruous situation. Something needed to be done to bring the two crucial aspects to an equilibrium, but war doesn’t allow for time-outs and procrastination – and this is where the heavy use of the trench system comes into play. No consideration was made for this state of affairs as Europe fell into war, so World War I was in a sense predestined for the cruelly slow pace and futile

¹ Completed under the mentorship of Professor Abraham Edelheit for History 34: Military History.

casualties we know it by today. The essence of trench warfare, in context, is deeply touching and comical (or perhaps terrifying) – the men just needed to HIDE and “wait it out” until a more productive alternative came to light. Probably the most notable military strategy of The Great War was a glorified, overextended game of hide and seek – with all connotations of fear, vulnerability, and innocence intact and concrete. The main idea was to construct a safe haven where soldiers would be protected from enemy artillery – and erstwhile, the trench system fulfilled this goal quite well.

An ominous stalemate came in 1915. After emerging (dubiously) victorious from the horrendously dragged-out and outstretched rape of Belgium (few times are ubiquitous metaphorical comparisons of war to rape as fitting as they are in this instance), Germany found itself faced with one question: What now? Progress was impossible, and front lines remained stagnant and pristine. Neither the French nor the Germans knew what exactly to do to speed up the outcome, and fear over not knowing whom this outcome would favor in the end led to further inaction. This seemingly anticlimactic moment was in fact the birth of a cruel, devastating, and multi-faceted phenomenon – trench warfare. Both sides settled in for an indefinite length – getting cozy in the face of the approaching winter. No matter how worn-out and clichéd the statement may sound, what they were in fact doing – without any exaggeration or floridity – is literally digging their own graves.

It could be very easily perceived as a counter-intuitive way of combat, essentially from its beginnings amounting to a dead end. If no one makes the fateful move across no man’s land, the battle can go on into eternity, in theory – and it often did.

Life in the trenches could barely be called life. It was rather a torturously drawn-out, painfully bleak stasis in wait of death – anxiety, fear, and regret faded and gave way to apathy and numbness together with the realization that Death had already arrived – a long time ago. There were no prospects or hopes. Dilapidating, worn soldiers stewed in cold, filthy rainwater, their own waste, and the byproducts of human and animal decay. Lice, rats, and worms – indifferent to the drastic human goings-on unfolding before them – joyously accepted the feast of weakened human flesh. The proliferation of lice in particular facilitated the spread of “Trench Fever” – so called due to – yes, you guessed it – its prevalence in the entrenched soldiers. The illness manifested itself in severe body aches, and dehydration as a consequence of nausea and diarrhea. It was not considered a serious enough condition to justify immediate hospitalization, so most would be expected to work and fight at full capacity in this most miserable of states. Diseases of the body and mind, communicated between men at equal speeds, were ubiquitous and devastating.

Perhaps the most widely known (albeit far from being the most devastating) malady of the trenches is the aptly named trench foot. The soldier’s foot, constricted for weeks or months at a time in a dirty, dilapidating, wet combat boot (realistically, soldiers in the trenches didn’t have the luxury of taking off their shoes and putting on their jammies and fuzzy slippers at the close of each day), abused and overworked as much or more as the rest of his agonizing, worn body, simply began to rot, leaving one at a loss as to whether the stench of human decay was coming from the fallen strewn in and about the trench, or his own flesh. The tolerable discomfort and pain it started out with was unnoticed or ignored until it was too late – and the foot had to be removed. In the more fortunate cases, trench foot actually turned out to be a blessing – allowed to escalate to the level of incapacitation, but just before the level necessitating the consignment of the appendage to eternity; it would award the sufferer a few days of precious rest in the hospital.

Entrenched soldiers suffered from extreme vitamin deficiency – caused not only by a lack of nutritious food, but by a lack of food in general. This brought on tooth decay and loss, gum disease, stomach ulcers – among an innumerable throng of other ailments. Needless to say, these men were not in the best of states to begin with – besieged by fatigue, hunger, exposure, infection, and depression. The prognosis was bleak.

Shell shock, or combat fatigue, was among the most overused excuses for exhausted soldiers desperate to get away from the frontlines, if only for several days. It would be impossible to determine how many cases were simulated, but for the men who were in fact affected with this total nervous collapse it was a truly hellish experience. Worst of all, even if they were allowed the coveted respite from battle, their rest

was haunted with the prospect of their inevitable return – rendering their recovery futile. It left its mark on the unfortunate soldier forever – the dissociative pain and chaos of war went on in his fractured mind long after the shells had ceased flying in actuality, robbing his survival, victory, his life – of their value.

There is another crushing dimension to the reality of shellshock – men were destroyed by it. As most pleas for respite were ignored and treated as simple momentary weakness or inconsequential whining, truly ill and inadequate men were forced to remain in a combat situation under extreme mental duress. The persistence of the traumatic stressor that leads to a psychotic break never signifies a good prognosis, and the increasingly distraught soldier was forced to take self-preservation into his own hands. His survival instinct, well suppressed through his training and internalized understanding of “duty”, was activated, and surpassing that same concept of “duty” and “honor”, as well as sound reasoning and judgment, the desperate man would often simply try to flee – only to discover that there was no escape. These bewildered and disoriented (and often very young) soldiers would be captured and executed by their own armies for crimes such as desertion, “cowardice”, “disobedience”; and the like.

The battle of Verdun is a brilliant example both of the brutality and stagnation characteristic of trench warfare. One of the longest and bloodiest battles of the World War 1, it took place over a course of nine months in 1916. From the start, the German command planned the battle as blunt force trauma. They did not intend to take Verdun in a swift and elegant attack, having realized over the past two years that in this war one was all but impossible. The plan was to slowly and excruciatingly drain France of morale and willpower through heavy casualties – the strategic equivalent of sawing a limb off with a blunt and rusted saw, not only due to a lack of proper medical instruments but also for personal enjoyment. Verdun was chosen as a strategic point both because of its importance to the French, meaning they would be reluctant to retreat even in the face of heavy losses, and because victory would grant the Germans access to Paris. As predicted, the French clung desperately to Verdun, refusing to surrender. In a somewhat unexpected outcome, Verdun is counted as a French victory, though a Pyrrhic one, at best, with French casualties exceeding German ones by almost 100, 000 men. The French were able to hold on to Verdun, and repel German forces almost to their starting point. In the end, front lines had barely moved from where they originated in February of 1916. The massive losses on both sides, coupled with the virtual lack of any real advance on either, is definitive of the meaningless tragedy of many World War I battles – and the deadly lethargy of entrenchment.

Still, probably the most significant massacre of World War I was the battle of the Somme. The purpose behind the Somme Offensive was simple – it was a joint effort between the French and British to create a gap in the German trench lines. Once this was done, the breakthrough could be exploited to either shorten the German trench lines or advance deeper into German territory. Over the course of five months, more than 1.5 million lives were lost while the land gained was minimal – a sadly familiar and repetitive statistic. The tank was famously first used in an attempt to break the seemingly eternal stalemate – a vehicle that would, in theory, be impermeable and could easily surpass earthen and barbed wire barriers. However the machine was still in its infancy, and was thus quite imperfect – it did gain some advantage for the British due to its sheer bulk and the shock factor of a never before used weapon, but the numerous malfunctions of the prototypical tanks prevented them from making a dramatic breakthrough. The outcome of the Somme Offensive was, as in many previous cases, ambiguous – allied forces were able to repel the Germans, but only after titanic effort, immense losses, and only to a very slight degree. Still, the copious amounts of blood spilled along the banks of the Somme were not in vain – in many ways, the outcome of the battle shifted the tides in favor of the allies, foreshadowing their ultimate hard-earned victory.

Among those injured in the battle of the Somme was German artist Otto Dix. His experience in the trenches would haunt him until his death – permeating his uneasy, terrifying body of work with the kind of revulsion and horror that can only arise from WITNESSING life’s most crushing aspects – and never from idly musing on them. Wounded not only in body but in mind, Dix’s baptism by shrapnel robbed him of all sympathy towards his fellow man – what WAS sympathy; a tautological and extinct appendix in the sick and rotting body of the 20th Century? In his paintings, he showcased man for what he is – a brutal,

dirty, and cowardly animal. There is no false veil of idealism or dignity, no glorified fabrications of the imagined nobility of human kind in his portraits – only the relentlessly anatomical reality of the human animal with its foaming mouths, sagging tumescent masses of flesh, gleaming buttery voids for eyes – windows to the intestine rather than the soul. Neither women nor children were spared the almost sadistic realism of his vision, much like neither is spared by the ultimate realism of wartime – even in the portraits of his beloved wife and children, Dix’s most humanistic and sparing efforts, his bitter scorn for all living flesh is all too obvious. His loved ones were human, and therefore were not and could never be exempt. Dix’s experience in World War I turned him into a modern Hieronymus Bosch – a somber and scornful judge of humanity, elevated to his well-deserved post through witnessing first-hand the Hell on Earth we submit ourselves to, and wreak upon others. He was prosecuted and repressed heavily both in Weimar and Nazi Germany – the Germany he nearly sacrificed his life and wholly sacrificed his soul to; for his uncompromising art. Ironically and tragically, he would be forced to serve in World War II. He fought reluctantly for a year prior to being captured by French forces. After spending two years in a French prisoner of war camp, he returned to Germany, where he remained until his death. Dix joined the war voluntarily as an idealistic young man in 1914 – spurred on by the flaming concepts of blood, soil, and glory resounding in every German mind of the time. He found what he was looking for – the poetry and honor of brutal death, the separation of feeble, terrified boys from stalwart merciless Teutonic Men, the naked humanity of grown men weeping in fear and the absolving catharsis of the blood of your brother man caked upon your hands. Dix longed for the human extremes of war as a naïve young artist – and they imbued his art with the incomparable Sturm und Drang he sought. But with this, they destroyed his belief in mankind, forever castrating any seed of humanism present in his soul. By the time he was dragged into the maelstrom of the second World War, he was a fully embittered and broken man – as disillusioned of the charm and ecstasy of warfare as a man could be.

His comrade in arms and in arts was George Grosz – another notable German artist of the 20th Century. The striking similarities in their mercilessly honest, dark weltanschauung – despite their paths crossing only when both were well into their art careers – is testament to the undeniable impact World War I had on the cultural world of the latter 20th Century; largely the same cultural world that we inherit now, albeit maimed and bastardized by the ineptitude and barbarism of modernity (a theme best reserved for another essay). Grosz’s journey to the front, however, was radically different in context to that of Dix. A peaceful young man with Communist inclinations, he wanted to avoid serving at all costs. Incongruously, he volunteered for the army in hopes that this would help him avoid conscription – and thus an inevitable dispatch to the frontlines. His hopes, however, were soon dashed. In contrast to Dix’s inspired bloodlust, he fought ineptly and passively, desperately grasping at the chance to be hospitalized for a number of real and imagined ailments. Grosz suffered somewhat of a genuine psychotic break in 1917 – documented in his correspondence with a close friend, filled with unintelligible ramblings and feverish scribbles of the same repetitive motif – crosses, barbed wire, and primitively stylized corpses. He narrowly avoided the death penalty after attacking an officer who insisted that his psychosis was feigned and he must return to the front immediately – and after attempting suicide by submerging his head in a latrine, in an effort to demonstrate that he would prefer this to remaining in the war, was judged permanently unfit for service due to mental illness and was able to return home. He recovered – but his traumatic experiences left in his consciousness a deep rift between himself and Germany. Grosz would later relocate to the United States, reject all association with the German social and art worlds, and even Americanize his given name – legally turning the harsh Germanic Georg into good old George. However, he would die in Germany, and is buried there – forever a son to the cruel mother that maimed him irreparably in his youth. Grosz would strive for the majority of his life to wash away the stains that he perceived Germany to have dirtied him with – the unclean fluids of the greedy, bestial, lecherous Berlin humanity, the stench of betrayal and treachery that imbued the German air to him, and above all, the bloodstains of World War I. Ironically, he would never rid himself of Germany’s black mark – he would instead become a symbol and herald of Germany. The brutal clarity of his vision, the pain and angst with which he dignifies the mundane trials and suffering of common men and women, the uncompromising strength with which he lifts the human

beast from its filthy hole and presents him to the judgment of an eternal entity – are all undoubtedly Germanic, the epitome of what we hold so precious in German art – in Durer, in Baldung, in Goethe.

Another cultural enfant terrible birthed by the Great Mother of Modernity was French writer Louis-Ferdinand Celine. He was a doctor – one of the most noble and humane professions imaginable, but his service poisoned his idealistic strivings. Celine is a highly controversial figure in the literary field and outside of it, because of what many people interpret as his anti-Semitism and Nazi sympathies. It would be naïve, however, to try to peg Celine as a Nazi – his cynicism and misanthropy are equal-opportunity, and to someone familiar with his work it is all but obvious that he could have never experienced a true loyalty to any political inclination. His hatred for all men is often twisted and misinterpreted as a hatred of a certain group – but the reality is that he simply despised the world. Bile and disdain seep tangibly out of Celine’s writing and will readily stain all who are concerned within it – be it German, Jew, Englishman, Frenchman, or American. He hated himself for his naiveté and cruelty, France for having failed him, Germany for having raped and abandoned France. Celine’s writing is bitter, scornful, unforgiving – but also utterly realistic. He is in no way a singular embittered sociopath – he simply conveyed the reality of his time.

The notable German psychologist Erich Fromm speaks about the concept of “destructiveness”. Under this term, he describes a latent, cryptic, and pervasive love and fetishism of death, cruelty, decay and suffering – present in every man. Some eradicate these impulses through a natural striving towards life and love, which overpowers the dark beginnings. Some direct the aggression and energy into constructive or neutral activities – creating the mixed state we see in most modern men, neither good nor evil. And then others, revel in the rot and agony. In his cathartically revealing and exhaustive book, “The Anatomy of Human Destructiveness”, Fromm presents an abundance of case studies – of sadists, masochists, necrophiles, coprophiliacs. He includes both sadists and masochists within this diagnosis – the emphasis is on the fixation on pain and suffering, regardless whether the recipient is oneself or another. Fromm’s necrophile, or “death-lover”, is not only that unspeakable pervert of legend – though in its extreme expressions, destructiveness may well lead to a very real and physical “love” of death. Most of Fromm’s illustrations are the notable men of war of the 20th Century – among them Stalin, Himmler, Mussolini, and of course, Hitler. By delving into the personal lives of these infamous warlords, Fromm makes them more human than ever before. We can almost sense the palpable insanity, sickness, and perversion – the demons that drive one man to commit one or several covert, everyday rapes and/or murders, but which through some grand historical flaw led these men to commit millions at a time.

In his detailed psychological profile of a sadistic necrophile, Fromm describes the attraction these individuals feel for cemeteries, graves, mausoleums – and all other burial grounds, structured or improvised. This extends into a love of dirt – the smell and sensation of raw earth, a desire to lay upon and be covered by it – a fetish stemming from the heavy association we have placed on it since time immemorial with death, rot, with THE END. Most of the evidence Fromm displays on his famous subjects – drawn from diaries, personal correspondences, witnesses, and friends – is testament to this. Whether hidden behind the dignified façade of enjoying the quiet tranquility of a majestic cemetery, a noble love of the gentlemanly sport of hunting, a love of winter – seemingly an innocent and healthy affection towards nature belying a preference towards dead and extinguished things; the marks of necrophilia are all there.

It is interesting to note that a very different symbolical interpretation of dirt exists in our mass subconscious, simultaneously with this one – exposed and studied by another German psychologist, Carl Gustav Jung – that of the earth as the fertile, forgiving, healing Mother – a magical womb which buries pain and disease and gives rise to life. Delving further into the human mass subconscious – introduced to the Western mind frame largely through Jung’s efforts – we find that many cultures, both exotic and familiar to us as Western men, have at one point equated the womb with the grave, or otherwise conceptually entwined sex (birth) and death (burial). The earth that silently accepts our rotting breathless bodies, entombing our carcasses forever and severing us eternally from life, repurposes that same rotting expired flesh into beautiful, thriving, fertile new life – ad nauseam. The writhing maggots covering the

wounds and faces of the dead, grey men in the trench(now at ease forever) are horrible and disgusting, a repulsive insult added to the injury of a young life prematurely and hopelessly extinguished – but they are that new life arising from putrid death. The metaphorical “womb” of the Earth is made all but literal by the very construction of the trench – and here we can welcome an anticipated third German psychologist, Sigmund Freud. Such a relation may seem too great of a liberty at first, but the irony therein is too compelling – the trench soldier gives up his life, entombed in a man-made earthen semblance of whence his life once arose – and the cycle goes on. With his body he fertilizes the scorched and bloody womb of the world so that life may continue – after he has sacrificed his.

It could be successfully argued that all of humanity is mired in violence and death – but we, the Western world, have a special and warm place for both in our hearts. The torch we hold for these painful concepts has not been extinguished once through the millennia of our existence. Looking objectively at trench warfare, it seems a perfect cultural artifact of the Western world – combining the barbarity and gore of our past with the deadly innovations of modernity – a disquieting future gleam of the sterility and formality with which the Nazis(and not only them) would expire their victims in the next war. It combines our eternal love affair with death, our penchant towards treachery and violence, the bloody wrath ingrained in us through our Abrahamic scriptures – with the orgiastic pagan chaos still alive somewhere deep in our veins, reverberating, again, with the same notes of damnation, blood, fire – the orgasm of violence, the glory of battle, the sleep of death, the rebirth through the fecund Earth – the slain body of Odin(of Perkunas, of Mitras) returning and reemerging from his Mother’s womb, Jesus rising from his tomb. Earth’s womb accepts the blood of Man – his final sacrifice – and swallows him whole so that his brothers may live. It is no coincidence that such primal mechanisms as the war cry and the battle drum persevered well into (and after) the First World War.

There is one interesting thing worth understanding about war. Though I in no way claim even aficionado-level expertise, and would rather bow my head in shame than dare speak from the same metaphorical platform as truly great military practitioners and scholars, this simple fact is accessible even to a simple civilian like me: War is a game. A playful, energetic, intoxicating pastime spanning thousands of years and millions upon millions of mangled, bloated corpses. A sport that for millennia has exercised the able bodies and ardent minds of human men, and facilitated the putting to use and exercise of the able bodies of human women – a pleasurable and eternal game of its own. As humanity, we acquiesce to our own pre-determined deaths, and in fact, take part in the meticulous planning of our own future burials – as well as those of our pre-assigned “friends” and “enemies”, by engaging in warfare. Conversations about the cruelty of war and the misery it wreaks begin to seem absurd once one realizes that we ourselves accept and resign ourselves to these bloody consequences with the utmost willingness, in the same way as we cheerfully accept the role of the cat or the mouse as children.

When we look at the war propaganda of the 20th century, we can find a repeating motif. An illustration intended to remind the soldier exactly why he is starving, freezing, and suffering in a foreign land full of strangers intent on murdering him – an approximation of his real or hypothetical, present or future, wife and child[ren]. “Fight for us”. “Protect us”. “Don’t forget us”. “We are waiting for you”. The shapely, fertile, woman. The happy, healthy, red-cheeked child. Beauty. Light. Love. Life. These concepts could not be further removed from his reality – but he believed, and walked faithfully to his own slaughter to defend this clean and beautiful ideal. War is death. War is life. War is the birth and the undoing of Western man. War was, and is our cradle – and our repeating grave. The metaphorical grave becomes a concrete, literal one in the form of the trench – and in it we can see an amalgamation of our Western obsessions, perversions, fetishes, ideals, tribulations – in one final mortar flash, before the earth covers all.

"... till thou return unto the ground; for out of it wast thou taken: for dust thou art, and unto dust shalt thou return." - Genesis 3:19

BIBLIOGRAPHY

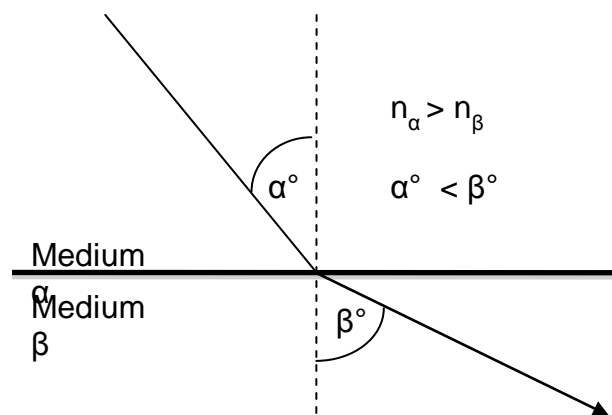
- Dix, Otto. *Postcards from the Front*. Nicola Roberts. 1992.
- Fromm, Erich. *The Anatomy of Human Destructiveness*. New York: Henry Holt and Company, 1973.
- Gilbert, Martin. *The First World War: A Complete History*. New York: Henry Holt and Company, 1994.
- . *The Somme: Heroism and Horror in the First World War*. New York: Henry Holt and Company, 2006.
- Grosz, George. *Enemy of the State*. John Needham. 1987.
- Jentsch, Ralph. *George Grosz: Berlin-New York*. Italy: Skira. 2008.
- Lewis, Jon E. *The Mammoth Book of Eyewitness World War I*. New York: Carroll & Graf, 2003.
- Loffler, Fritz. *Otto Dix: Life and Work*. New York: Holmes and Meier. 1982.

Mirage Created by a Heated Object: Experimentation and Observation of Inferior Mirages on Walls Heated by the Sun¹

Many people have heard the story of the parched desert wanderer who sees an oasis in the distance that vanishes as he runs toward it. This is not merely a trick that the exhausted mind is playing on the drifter; in fact, there is a scientific basis for this type of mirage. What seems to be a vast lake in the distance is actually a reflection of the sky caused by the sun heating the sand. The explanation of this phenomenon raises question about whether or not a mirage can be seen elsewhere and if one could be created using any heated surface.

The aim of this experiment was to use a heated object to create and/or observe a mirage. An inferior mirage is created by the refraction of light by air of varying densities, which alters the observer's perception of the source of that light. The term "inferior" refers to the virtual image appearing below the real object. When a ray of light passes from one medium into another, with the latter having a smaller index of refraction, the ray is refracted away from the normal line.

Figure 1

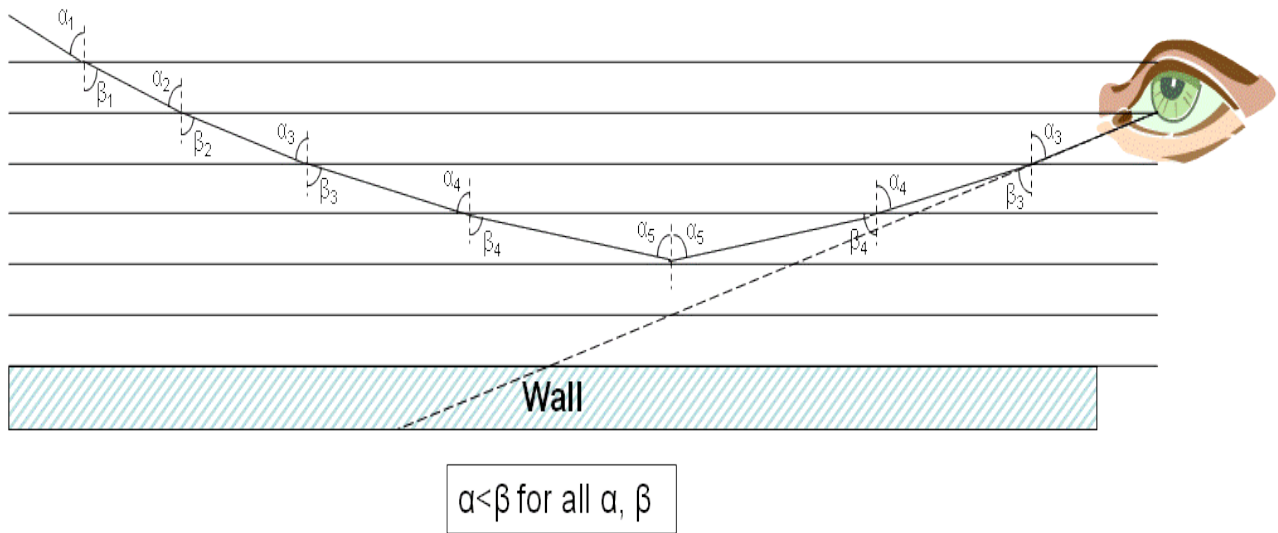


¹ Completed under the mentorship of Professor Gregory Aizin for PHYS 14: Advanced General Physics 2.

The refractive index of air is determined by its density. The smaller the density, the smaller the index of refraction, with the latter approaching a unity when the air density approaches zero value (complete vacuum). Air density is determined by the temperature. Higher temperatures result in decreased air density and lower temperatures result in increased air density. When an object is heated, the air temperature very close to the object increases and subsequently causes a decrease in air density. The air temperature greatly decreases within the first few centimeters, and then it gradually decreases. This temperature gradient results in a corresponding gradient in air density. As a ray of light passes from a larger air density to a smaller one, it is in fact passing from a medium with a larger index of refraction to one with a smaller index. As light passes through the gradient of air density, it is continuously refracted away from the normal line, making the angle of refraction larger and larger.

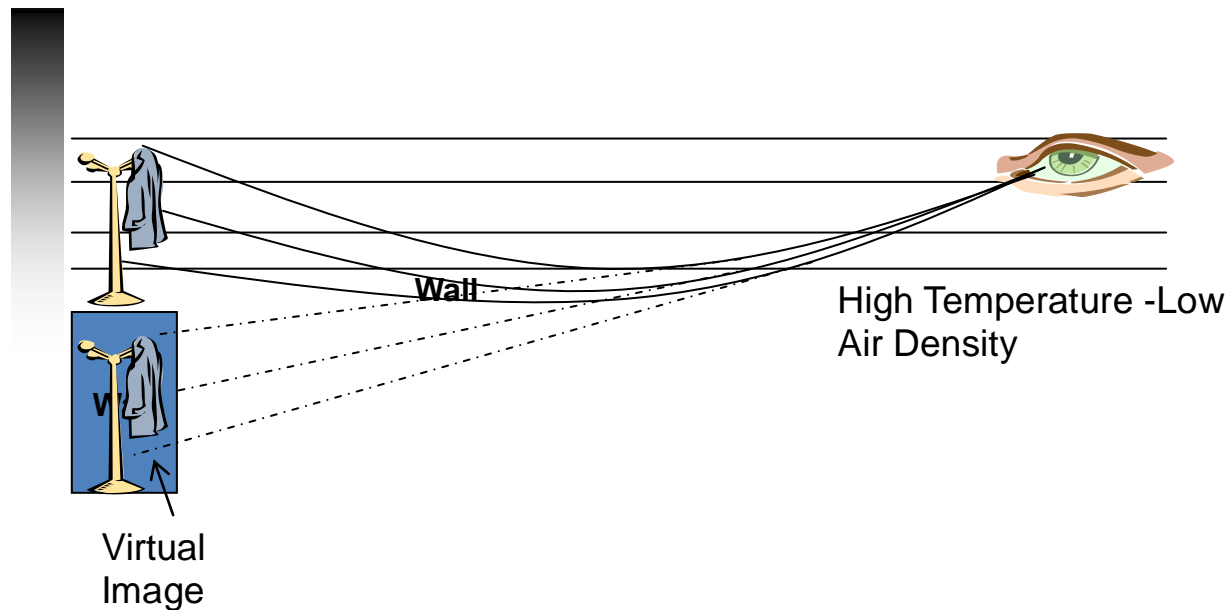
In Figure 2, a ray of light is moving from left to right, passing through the gradient of air density as it approaches a heated wall. When the ray is continuously refracted away from the normal line, the angle of incidence becomes larger. If the angle of incidence is not large enough, the ray of light will not be able to pass through into the next medium and there will be total internal reflection as seen in angle α_5 below. After the total reflection, the ray begins traveling away from the wall. As it passes from a smaller air density to more dense air, the ray is refracted toward the normal line, or away from the wall, creating the opposite effect as when it was approaching the wall.

Figure 2



The reason for the apparent reflection of an image as a result of a mirage is the interpretation of the light by the human eye. The rays of light are not traveling in a straight line, but the eye can only see them as a straight line. As it is shown in the diagram above, the rays enter the eye after traveling in a curved trajectory, but the eye perceives these rays as traveling in a straight line. A mirage is the virtual image that the eye interprets as coming from the straight line continuation of the light ray just before it enters the eye (pictured as the dotted line in figure 2).

The only way to see a mirage such as the one being described is along a long and flat surface that is at least 3-5° warmer than the air. A wall of no less than 10 meters in length is required to see this type of mirage, as the minimum initial angle of incidence that will result in a total reflection is very large. The observations that were made in this experiment were along a 35 meter-long wall. The wall was heated by the sun from sunrise, at 6:57 a.m., until 2:52 p.m., when the picture was taken. Figure 3 shows the refraction of the light's rays due to the air density gradient, as well as the virtual image seen as a continuation of the light rays.



The observations were exactly as predicted. As the observer moved closer to the wall the image began to form in place of the wall. This image is a reflection of a jacket on a coat rack. The reflection is approximately 15 centimeters of the real image. To create a larger reflection would have required either a longer wall or a larger temperature gradient. The following picture shows the wall on the left and the real image on the right. The virtual image seems to be in between the object and the wall; however, it is actually? in place of the wall. This can be easily seen if one were to follow the base of the wall from the bottom of the picture up toward the object. Just before the object, the wall seems to vanish and the virtual image takes its place. This effect is caused by the perception that the light rays are coming from the wall when they are actually reflected by the changing air density. This picture is a perfect example of a mirage formed by a heated surface. As mentioned above, the only ways to improve such an experiment would be to induce higher temperatures on the wall and/or to use a longer wall.

This experiment shows the difference between perception and reality. In the image below, it seems as if a brick wall is acting as a mirror in some way, when in reality the image is formed by the refraction of light rays, resulting in the misconception that these rays are coming from the wall. This effect can be seen on any sunny day along a long stretch of flat highway. In the distance there appear to be puddles of water on the road that vanish as one approaches them. These puddles of water are simply rays of light that are being refracted by the gradient of air density above the hot asphalt, and in most cases the observer is actually seeing a reflection of the sky. This phenomenon has nothing to do with the composition of the heated object, as it is not the object that is reflective. If the following picture does not seem feasible because it is hard to

conceive of a brick wall that acts as a mirror, then one can only imagine the disbelief that a dehydrated desert wanderer feels as the body of water appears and then disappears before his eyes.



Works Cited

Minnaert, Marcel. *The Nature of Light and Colour In the Open Air*. London, UK: G. Bell and Sons, 1959.

MICHAEL MANIPAKONE

The Efficacy of Bush's "War on Terrorism" Speech¹

Could you ever imagine George W. Bush being praised for his speech writing ability? Although George W. Bush is mocked for his oration skills, his speech addressing the War on Terrorism was both bold and compelling. It was a speech aimed at Americans, to remind us that the War on Terrorism is not a fruitless effort, that we are a strong nation, and that we have every reason to be patriotic. It was also aimed at the hearts of our enemies, to instill fear and remind them that we remain a nation to be reckoned with. The goal of this critique is to persuade the reader that George W. Bush's speech was effective in achieving Bush's goals and persuading the public that America was as strong a nation as ever. This essay will give details on the background of the War on Terrorism, provide more detail on the background of the speech itself, and evaluate Bush's usage of ethos, logos, pathos, and mythos. As the reader of this critique, you are most likely an American; to Americans, this speech could be considered one of the most important speeches in American history made during a time of recovery from a foreign attack. It is an important indicator of the state of the nation during this time period. With that being said, let us discuss the background of this issue.

The War on Terrorism speech was sparked by attacks on the twin towers in New York City on September 11th, 2001. Afterwards, Bush announced that America would commence a war against terror, specifically targeting the terrorist group Al Qaeda, while continuing the fight in Iraq. The speech itself was delivered after the removal of Saddam Hussein from power.

The speech was delivered by George W. Bush on the afternoon of March 19, 2008 in the White House and was about 26 minutes long. It was broadcast live on television. The goal of the speech was to reassure Americans that Operation Iraqi Freedom and the War on Terrorism were worthy efforts and that victory was possible.

Overall, Bush used minimal ethos, possibly because he knew that his credibility with the American people was limited. As a result, he focused more on conveying his message through pathos, logos, and mythos. During the time of Bush's speech, public approval of the Bush administration was low (Minnesota, 2010). He had received much criticism for his oration skills, with the press frequently poking fun at his verbal blunders. David Letterman was quoted comparing Bush to a buffoon. Overall, Bush's initial credibility as a speaker was low in terms of public expectations. However, it seems that Bush thought his credibility was high. In his speech he says, "Some of those troops are with us today, and you need to know that the American

¹ Completed under the mentorship of Professor Maureen Minielli for Honors Speech 21: Effective Public Speaking.

people are proud of your accomplishment, and so is the Commander in Chief” (Virginia, 2008). By naming his title in this sentence, he asserts that he is worthy of respect and that his praise is valuable. With that being said, even though the public’s assessment of his character may have been considered low, his charisma and goodwill was apparent in his speech. Bush demonstrated his charisma by his tone. Although he got the audience to laugh at the beginning of the speech, his tone was serious and intimidating, and his audience applauded him several times. His goodwill was evident because his entire speech was devoted to a selfless topic aiming to build the morale of Americans--which was expected of him as Commander in Chief.

The President demonstrated his diplomatic approach when he said, “the liberation of Iraq took incredible skill and amazing courage” (Virginia, 2008). His use of these positive words shows his commitment to diplomacy in his speech. Bush purposely chose to call our invasion of Iraq a “liberation” in order to sound less abrasive. Bush uses diplomatic wording throughout his speech.

Bush’s main use of logos, or logical argument, was apparent when he tried to convince the American people that Operation Iraqi freedom was a war worth fighting. His other argument attempted to reassure us that victory would come soon. Bush used a lot of good evidence to support his argument. He starts off by informing us that, “five years into this battle, there is an understandable debate over whether the war is worth winning--and whether we can win it. The answers are clear to me: Removing Saddam Hussein from power was the right decision, and this is a fight America can and must win” (Virginia, 2008). Bush uses global support as a way to make his argument stronger by saying, “forces from the UK, Australia, Poland, and other allies joined our troops in the initial operations.” To assure us of victory, he then goes on to describe the strength of our military power, saying “as they advanced, our troops fought their way through sandstorms so intense that they blackened the daytime sky” (Virginia, 2008). This comment reminded Americans of other Americans’ sheer boldness in the face of adversity. He then goes on to describe the enemy we were fighting, in the hopes of presenting the war as more just.

Our troops engaged Fedayeen Saddam, death squads acting on the orders of Saddam Hussein, that obeyed neither the conventions of war nor the dictates of conscience. These death squads hid in schools, and they hid in hospitals, hoping to draw fire against Iraqi civilians. They used women and children as human shields. They stopped at nothing in their efforts to prevent us from prevailing, but they couldn’t stop the coalition advance (Virginia, 2008).

Not only did this comment reassure Americans of how victorious we had been in the war, it also painted a picture of one of the reasons why we were needed there--to save Iraqi lives from evil and tyranny.

Bush’s use of evidence seemed reasonable. He followed the logical steps to prove why a country should be at war. In his use of evidence, he talked about why we were there, the enemy we were fighting, how atrocious the enemy was, and finally how victorious we had been. This is a formula that is frequently used in presidential speeches throughout wartime. For example, Winston Churchill, in his speech during World War 2 said, “I have, myself, full confidence that if all do their duty, if nothing is neglected, and if the best arrangements are made, as they are being made, we shall prove ourselves once again able to defend our Island home, to ride out the storm of war, and to outlive the menace of tyranny, if necessary for years, if necessary alone” (Magazine, 2010). Like in Bush’s speech, Churchill was conveying to his audience that England

was a strong nation and would fight and be victorious in the face of great adversity. He went on to say,

We shall go on to the end, we shall fight in France, we shall fight on the seas and oceans, we shall fight with growing confidence and growing strength in the air, we shall defend our Island, whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills; we shall never surrender...

In this comment, he demonstrated to his audience the strength of England and its unwillingness to surrender, conveying that England was a nation to be reckoned with. Churchill's speech went on to be one of the most memorable speeches of all time, which makes it understandable that Bush would follow his line of reasoning for a successful persuasive speech in time of war.

Bush's evidence was valid or invalid, depending on the source. On the one hand, many left-wing Americans during this time were revolting against the war, calling it a crusade and an evil, malicious, and bloody war (Bush, 2010). On the other hand, many Americans supported the war because they thought it was worth fighting. Those who were against the war believed that America was destroying Iraq and would leave the country in ruins (Bush, 2010). The supporters felt that America had made tremendous progress in the war by overthrowing Saddam Hussein and that this was a symbol of American victory (Bush, 2010). In this sense, Bush's evidence can be considered valid.

Although Bush's choice of wording can be considered theatrical, such as when he said, "aided by the most effective and precise air campaign in history, coalition forces raced across 350 miles of enemy territory," it was designed to get listeners to understand the progress that had been made during the war (Virginia, 2008). He continued to do this throughout his speech, using theatrical language to make his speech not only believable, but also persuasive.

Bush's speech was very consistent and logically thought out in support of his main thesis, that Americans were not only fighting a worthy war (the War on Terrorism) but winning. In order to prove this point, he spoke about the strength of American military, the victories over specific enemies in Iraq, and the courage of American military fighters.

Overall, Bush's *logos* was highly logical and consistent throughout his speech, which helped make it that much more persuasive.

The main strategy that Bush used for his speech was to persuade listeners that the war in Iraq was a worthy cause, and a cause that America was winning. He used *pathos* and *mythos* to convey his message. To clarify, let's begin with a discussion of his use of *mythos* to convey *pathos*. Throughout Bush's speech he used many strategic words, such as liberation, freedom, free nations, and tyrant. These words were used to specifically provoke a memory or image in the listener's mind. For example, in the speech Bush said, "On this day in 2003, the United States began Operation Iraqi Freedom. As the campaign unfolded, tens and thousands of our troops poured across the Iraqi border to *liberate* the Iraqi people and remove a regime that *threatened* free nations" (Virginia, 2008). In the second of these two sentences, Bush used the word "liberate" for several reasons. He wanted to have the listener realize that the invasion of Iraq was not an invasion by a tyrant country coming over to colonize another country; he used the word to conjure an image in American minds of the time when we ourselves were liberated and became a free nation. This memory was supposed to provoke a connection between the freedom enjoyed in our nation and the United States' purpose in Iraq, which was to make it a free nation. He then used the words "free nation," which, of course, provokes the recollection

that America is a free nation and that America is being threatened as a free nation. In this sentence, Bush was appealing to the listener's fears, which was supposed to encourage listeners to support the war. He was saying that the war was not only a war to free another nation, but also one intended to protect one major thing that Americans value--their freedom.

The second use of pathos that Bush employed very well was invoking pathos through storytelling. Throughout his speech, he made references to Americans who had volunteered to serve in the war and went on to talk about their bravery and valor, and the sense of honor that they upheld throughout the fight. This is an excellent use of pathos as it was able to appeal to many feelings and to get his listeners to see his argument as valid from many different perspectives. For example, Bush said,

One of these brave Americans is a Marine Gunnery Sergeant named William "Spanky" Gibson. In May of 2006 in Ramadi, a terrorist sniper's bullet ripped through his left knee; doctors then amputated his leg. After months of difficult rehabilitation, Spanky was not only walking, he was training for triathlons. Last year at the Escape from Alcatraz swim near San Francisco, he met Marine General James Mattis, who asked if there's anything he could do for him. Spanky had just one request: He asked to redeploy to Iraq. Today, he's serving in Fallujah, the first full-leg amputee to return to the frontlines. When Americans like Spanky Gibson serve on our side, the enemy in Iraq doesn't have a chance (Virginia, 2008).

The pathos in this comment served to stimulate many feelings in the listeners. It projected an image of honor and valor, and was relevant to listeners in a personal way. It made Americans feel that being American meant having honor, a sense of duty, strength, and a strong will to overcome odds, which were all characteristics that William "Spanky" Gibson had in Bush's speech. The comment also served to show the strength of America in this war and it also provoked a sense of high morale in America's chances of winning the war.

The President's usage of pathos was appropriate, but manipulative. As stated previously, he did use some dramatic words, like "free nations" and "liberate" using mythos to entice feelings of fear and motivation for support of this war. However, his carefully chosen word choice was not anything devious, and it did not stray from the main argument at hand. His tactical word usage all supported his main thesis, which was to let Americans know that Operation Iraqi Freedom was for a cause worth fighting for and a campaign the United States was winning. His stories of brave military men obviously were placed in his speech to motivate Americans. He did not dwell on the tragedies of the war, because this was supposed to be a victory speech. This is an example of Bush's manipulative use of pathos. However, this was a speech to boost morale and this critic believes that he delivered it convincingly and well.

Overall, Bush's use of pathos was excellent, and proved to be the main strategy used to win his listeners over to support his argument.

All wars come with imperfections and tragedies. In most cases, there is no way to make a war look or sound positive. One of the major ways Presidents make wars sound like worthy causes, even if they are not, is by persuading their citizens that a given war is worth fighting. The War on Terrorism and the War in Iraq, depending on whom you ask, can either be considered wars for a worthy cause or something for which we should be ashamed. Americans are either

colonizers looking to take over the world or peace makers bringing freedom. Bush makes his stance clear in his speech--that he is in support of the war.

Bush's speech was carefully written and orated. It is clear that he paid meticulous attention to detail in terms of how his speech was designed and how he delivered it. Bush has been known to be a humorous and lighthearted fellow, but in this speech, he revealed his emerging credibility as Commander in Chief--a man of seriousness and an individual with purpose and a message to deliver. His pauses were well placed, which conveyed his confidence and sincerity to his listeners. His passion for what he was arguing about made the listener want to share that same passion. Nothing about his speech sounded selfish; instead it came across as a commitment to serving the American people, which raised his credibility and character. By the end of his speech, his terminal credibility was greater for listeners than his initial credibility, which, depending on whom you ask, could be considered extremely low. He was accused of being an idiot and a selfish man looking to destroy other nations. In his speech, one instead saw a man who was trying to help his nation. He was a man who humbled himself before the citizens of the United States and not a man who felt that the citizens were beneath him or there to serve him. In his speech, he came across to his listeners not as a dictator, not just as a President, but as a public servant asking his fellow citizens to come together for a worthy cause, which was to win Operation Iraqi Freedom.

Overall, regardless of what anyone may think of President George W. Bush's policies in the United States, he is a pretty good speech writer and orator.

In conclusion, this paper serves to critique George W. Bush's speech on the War on Terrorism and prove that Bush does a highly effective job in being persuasive in his arguments that the Iraq war was worth fighting and that the United States would win. To summarize, the paper discusses different aspects of the President's speech, ranging from his use of ethos, logos, pathos, and mythos. In considering his use of ethos, we find that although his initial credibility may have been low, his emerging credibility throughout the speech meant that he came across as an individual with purpose and a sincere desire to serve his country. His terminal credibility led many to conclude that he was a genuine President with an interest in protecting the citizens of the United States. In addition, the President's use of logos was excellent. His arguments were consistent, strong, and very easy to follow. Because his reasoning was strong, the listener was likely to be persuaded to agree with his arguments. Finally, we discussed his use of pathos, and pathos with mythos. This paper concludes that his use of pathos and mythos were the main selling points of his speech. He carefully used words to evoke feelings in the listener, and then regaled the audience with stories of bravery, honor, and valor to appeal to the listener's faith in the strength of the United States as a nation and a military power, thus encouraging listeners to believe that the United States was winning the war in Iraq and on Terrorism.

What have we learned from President Bush's speech? As prospective speechwriters, we learned that one's initial credibility with listeners can be dramatically changed by a well-executed speech. We learned about the power of persuasion and how the President effectively and strategically used ethos, logos, pathos, and mythos to design a speech that could persuade listeners to agree with his arguments. We also learned that during every Presidential administration, there will always be criticism, and without performing our own research we should not accept what is being said to us in the mass media at face value. One of the most important moral lessons from Bush's speech is the centrality of freedom in American culture and society--the freedom to criticize our leaders without fear of being persecuted and the freedom to

live our lives in almost any way we want so long as it is within the confines of our constitutional agreement.

Works Cited

- Bush, GW. (2010). *Decision points*. New York City: Crown.
- Defronzo, J. (2010). *The Iraq War*. Bolder, CO: Westview Press.
- Magazine, P. (2010, September 10th). *Winston churchill famous world war 2 speech*. Retrieved from http://www.presentationmagazine.com/winston_churchill_speech_fight_them_on_beaches.htm
- Minnesota, UO. (2008, September 20th). *Bush's approval rating overtime*. Retrieved from <http://www.hist.umn.edu/~ruggles/Approval.htm>
- Osborn, M., Osborn, Suzanne, & Osborn, Randall. (2009). *Public Speaking*. Boston, MA: Pearson Education.
- Virginia, U. (2008, March 22nd). *Remarks on the war on terror*. Retrieved from <http://millercenter.org/scripps/archive/speeches/detail/4452>.

SCOTT LEISNER

Painting Poverty¹

Tears were rushing from a lady's face while she was carrying a huge amount of recycling bottles. She was rummaging through trash bags while wheeling a cart with bottles larger than her own body. I did not know her name, her age or if she had a family, nor did she know mine. However, something about the lady touched my heart. She was invisible in the city's surroundings just as the tears in her eyes. People walked right by her as if she was less than human, accusing her of her own poverty through their amorality. She did not ask for assistance, poverty was already a part of her. She was used to not having material possessions, however her tears expressed that she could never adjust to the state of hopelessness and lack of human dignity which is intertwined with poverty. I wanted to find a way to help this lady and other people who are in the same situation; I decided that the way to assist is by making her visible through my painting— painting poverty.

My first step was to research historical painters as well as contemporary painters and to observe how they depicted poverty through their own paintings. However, the main artists that stood out to me were Jean-Francois Millet and Kerry James Marshall. Millet (1814-1875) was a French painter, a son of a stable peasant family. He was a realist and one of the founders of the Barbizon School; who was famous for his focus on peasants, integrating them with romantic landscapes. Millet was inspired by his childhood in Normandy, France as well as the Bible.



Fig.1.

¹ Completed under the mentorship of Professor John Descarfino for Art 59: Painting 1.

“The Gleaners (1857),” is one of Millet's famous paintings. It portrays three peasant women gleaning the wheat fields during the harvest, scrounging for what was left of the harvest. This was considered the most menial job. However, Millet portrayed these women as being heroic. He painted them as if they were energetic and focused, while blending into the romantic surroundings expressing complete harmony (Oxford Art Online). I oppose Millet’s way of glorifying poverty as if it was a natural state and a personal decision. In my eyes he disregards the contrast of the wealthy and the poor by placing the owners in the background in a natural way that the viewer cannot observe immediately.

The second painter I was inspired by was the contemporary American painter, Kerry James Marshall. I was attracted by his work after understanding the brilliant way he gathers his ideas and combines them into one piece. Marshall graduated from Otis Art Institute in Los Angeles and was influenced by Charles White, who taught him the social responsibility he had as an African American artist to incorporate black culture into his art. Therefore, he focused on social and historical themes of African Americans as well as his own childhood. The striking aspects of his paintings are the black skin tone of African American figures and his gestural style of painting (Oxford Art Online).

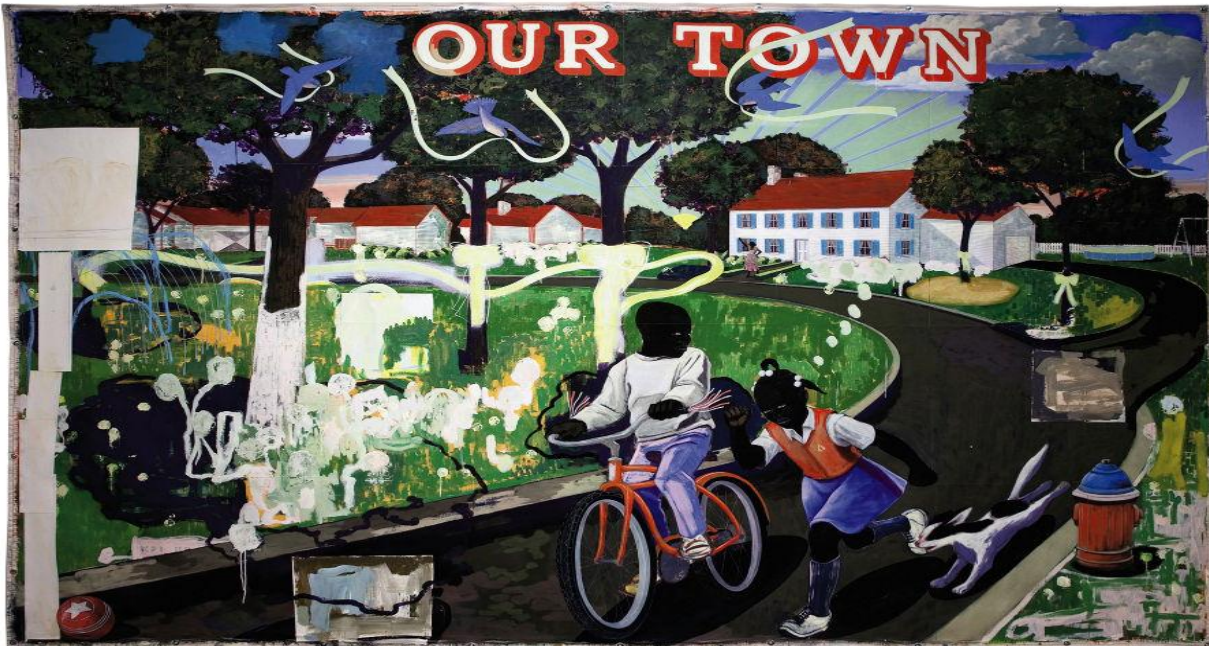


Fig.2.

In his painting “Our Town (1995),” we can observe the way Marshall composes his ideas into his work. The yellow ribbons are wrapped around each tree, indicating a crime scene. The road directs the viewer’s eyes to the identical homes, suggesting that this picturesque neighborhood is actually a low-income housing project, which proves the title “Our Town” as ironic. Marshall painted both children in extreme black, to confront society’s stereotypes of African American as having nothing to offer other than their blackness. In addition, the young girl looks out from the picture, running with a clenched fist which symbolizes “black power.” The cartoon like thought bubble coming from the young girl's head indicates that she could never disconnect from her home (Oxford Art Online). Following my research, I decided to begin taking pictures in order to express my personal idea of poverty. Over the weekend I travelled to 18th Avenue and Brighton Beach in Brooklyn, New York, in order to take photographs. The first pictures I had taken were on 18th Avenue. I was walking under the F Train’s ell; inspired by Marshall’s belief that an artist has a social responsibility, I concentrated on middle class workers focusing on their jobs.



Fig.3.



Fig.4.



Fig.5.



Fig.6.

During my trip to Brighton Beach, while walking on the boardwalk I noticed two ladies selling ices on the beach. The ladies were struggling to wheel a heavy cart on the sand with bowed heads. Examining the photographs, I noticed that I had captured a 2010 version of Millet's painting of "The Gleaners," that I had criticized



Fig.7.

Unsatisfied with the end result, I had decided a week later to go to East New York for a second picture taking session. I went to a place I believed could give me insight into poverty. Walking with my camera in this neighborhood I saw the anger through graffiti on beaten down houses, fast food chains and projects. The image that stuck in my mind was an astonishing amount of trash piled up around a thin tree, as if sanitation had not been there for a few days.



Fig.8



Fig.9.



Fig.10



Fig.11.



Fig.12. Leisner, Scott. East New York Photos. 17 October 2010. JPEG file.

My professor and I decided to embrace concepts from both Millet and Marshall. In Millet's painting "The Gleaners" we had embraced the peasant figures and transformed it into a more current concept. From Marshall I adopted the way he builds his work by composing many elements into a complete painting. Consequently, we decided to use Adobe Photoshop in order to compose a three layer painting where every layer symbolizes an idea. Therefore, in the third layer we came to the conclusion that there is a need for an overwhelming building to contrast poverty. In an email I received titled the "Top 40 Buildings in Chicago" I noticed a building (the Lake Point Tower) that I knew would fit in a perfect manner, for its extreme low angle shot that expresses power and dominance. The end result is shown on the following page:



Fig.13. John, Descarfino, Leisner, Scott, Danny Abramov. Adobe Photoshop – Painting Poverty. 19 October 2010. JPEG file.

In my painting, the main theme is poverty: the aspect of social immobility and the lack of human dignity. The two ladies are inspired by Millet's painting, "The Gleaners," therefore the women's clothing are painted in pink and blue. The two ladies are painted in intense warm colors of blue and pink to indicate that they are the focus of the painting and to express a contrast from the trash and the building. In addition, viewers cannot see their feet nor the bottom of the cart's wheel in order to express instability. Their cart is tilted to the side to indicate its massive weight. The woman in the pink blouse is pulling the heavy cart; her proportions are much larger than the other lady, however the trash seems as if it is

obstructing her path. Paying close attention to the lady in the blue, one would notice her tears as a result of her hopeless situation, while moving from the light into the dark. The ladies faces are hidden, in order for viewers to picture themselves being in the same position. The lower portion of the painting is very crowded in comparison to the spacious upper level portion. Directly behind the women are the huge piles of trash, which I painted on a much larger scale than the two ladies to indicate their status in society. In the third layer, the building towers above them all. The viewers feel as if they are part of the lower class,



Fig.14. Leisner, Scott. Painting Poverty. 10 December. JPEG file.

because they too, feel as if the building is falling upon them. The building represents the high class society and symbolizes status and power, it stands upright while the women are hunched over. In addition, it shows the amorality— so many people, yet no one is willing to assist. If we observe the painting as a whole we will see two vanishing points: one vanishing point directs the pile of trash and the

building toward the sky, however the two ladies and the cart have a different vanishing point showing that they do not follow the same pattern and are not directed toward the light. In order to portray a bleak atmosphere I painted the building in darker grey tones and the trash with mixtures of greys with analogous colors of blue-green, blue, blue-violet and violet. The cart is painted in earth tones to associate that the cart with the ground and is distorted to show that it will find itself down there, on the surface. As opposed to a landscape composition, this painting does decrease in size as we look toward the background. It actually increases and has very limited negative space in order to portray a claustrophobic feeling.

My painting is more than just depicting poverty and a critical observation on society. It portrays the lack of human dignity and the lack of hope. However, I am sure that if the woman who inspired me to compose this painting, would come across this art work, her tears would stop and a smile would appear on her face. For once in her life, someone noticed her pain and struggle, through the usage of colors.

Works Cited

- Dennis Raverty. "Marshall, Kerry James." Grove Art Online. Oxford Art Online. 16 Oct. 2010
- Heather McPherson. "Millet, Jean-François." Grove Art Online. Oxford Art Online. 16 Oct. 2010

Distinctions, the journal of the Honors Program of Kingsborough Community College of the City University of New York, welcomes scholarly articles and creative works that explore important issues in all aspects of humanistic endeavor, not confined to a specific academic discipline. Our editorial staff is sympathetic to a broad range of theoretical and critical approaches; however, the views expressed in articles are solely those of the authors.

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All manuscripts should be submitted electronically as Microsoft Word 2007 (or later) attachments to Professor Robert Cowan (robert.cowan@kbcc.cuny.edu) and include a working e-mail address and telephone number for both the student and mentor. Submissions should be in 12-point font and double-spaced throughout in a legible typeface like Times New Roman or Cambria.

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- An argument, not just a summary of other's arguments
- In-paragraph citations that are clearly connected to the Works Cited list
- As few reference sources as possible

Deadlines

August 1 for the Fall issue and February 1 for the Spring issue.

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