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## EDITOR'S INTRODUCTION

*The Wagner Forum for Undergraduate Research* is an interdisciplinary journal which provides an arena where students can publish their research. Papers are reviewed with respect to their intellectual merit and scope of contribution to a given field. To enhance readability the journal is typically subdivided into three sections entitled *The Natural Sciences*, *The Social Sciences* and *Critical Essays*. The first two of these sections are limited to papers and abstracts dealing with scientific investigations (experimental, theoretical and empirical). The third section is reserved for speculative papers based on the scholarly review and critical examination of previous works.

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# **Section I: The Natural Sciences**





# **Antimicrobial Properties of Clove Oil and Turmeric against *Staphylococcus aureus* and *Escherichia coli***

Joseph V. Agro (Microbiology)<sup>1</sup>

Worldwide the food industry is combating the repercussions of food spoilage due to the growth and contamination of many foods by food borne pathogens. Combating these pathogens has never reached its full potential, with all the preservative methods that human beings have come up with; there is never a 100 percent success rate. Turning to chemically synthesized substances such as antibiotics can potentially lead to dangerous side effects, even though these chemicals are able to act as a germicide. In this study the use of naturally derived plant extracts such as clove oil and turmeric were tested on *Staphylococcus aureus* and *Escherichia coli* to determine the effectiveness of these agents as antimicrobial agents. These two microorganisms are readily found in and on the human body, which is why it would be of interest to be able to combat these bacteria and their potential pathogenicity to humans. In this study the plant extracts were diluted 1:10, 1:100, 1:1,000, 1:10,000, and 1:100,000, to determine whether the extract performs as a bactericidal agent or as a bacteriostatic agent.

## **I. Introduction**

### General Introduction

As there are advancements in the medical world, and the fight against disease, microorganisms have evolved to be able to fight back. With the overuse and improper use of antimicrobial ointments, creams, and medications, microbes are able to become resistant to the agents used against them. In the procedure carried out, clove oil and turmeric powder were tested on two commonly found microorganisms on and in the human body. This is done to show the beneficial use of naturally found remedies and their effects upon microbes. The two microbes are *Staphylococcus aureus* and *Escherichia coli*. *Staphylococcus aureus* is found on the exterior of the skin and in the nares of humans and animals, and is commonly found in infections of the skin, eye, nose or throat. *Escherichia coli* is a bacterium found abundantly in the intestines of animals and humans.

### Plant Extracts Used

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<sup>1</sup> Research conducted under the direction of Dr. Kathleen Bobbitt in partial fulfillment of the Senior Program requirements.

### *Background information on Clove oil*

Clove oil is an extract from the plant *Halicize*, it is brownish red in appearance. It is widely used as an analgesic as well as antiseptic, and is purchased over the counter for anti-inflammatory uses such as toothaches. Analgesics are substances that relieve pain on a sore area. Clove oil has a very recognizable and strong smell; it can be found in aromatherapy practices for stress relief and for its stimulating effect. Other effects attributed to clove oil are antifungal, skin care specifically acne, and the ability to clear one's nasal passages with its anti-inflammatory properties (Singletary, 2014). Although there are many benefits of clove oil, in excess there is a possibility of toxicity. Ranging from nausea to diarrhea, more serious effects that can occur are respiratory distress, intestinal bleeding, liver failure, kidney failure and seizures.

Clove oil also acts as a bactericide, as well as being able to inhibit the growth of fungi and viruses. A bactericidal substance is a substance, which has the ability to eradicate bacteria. When regulated, the potent effects of clove oil can discontinue the growth of bacteria and other organisms when put into contact with them. In the experimental procedure, clove oil will be tested on how well its germicidal properties work on *Staphylococcus aureus* and *Escherichia coli* (Burt, 2004).

### *Background information on Turmeric*

Turmeric is a spice native to tropical Asia, India, and China and is part of the ginger family. Mostly seen in curry powder, Turmeric can be used in herbal medicines to treat ringworm, pain, jaundice, infections, intestinal cancers, Alzheimer's disease, and Huntington's disease. It is a bright yellow-orange powder that contains a natural anti-inflammatory compound. Mainly placed in food products, turmeric can be taken by mouth as a pill (Tajkarimi et al., 2010). It is unlikely that turmeric can cause severe side effects, but it can slow blood-clotting timing, cause iron deficiencies, and increases the effects of gastro-esophageal reflux disease. Turmeric acts as an antibacterial, antiviral, and antifungal agent (Tajkarimi et al., 2010). Turmeric's properties of antibacterial effects will be tested through dilution series to determine the proper concentration needed to show its anti-bacterial properties on *Staphylococcus aureus* and *Escherichia coli*.

### *Background information on Eugenol*

Eugenol is one of the main constituents that has been proven to be one of the major contributors to the bacteriostatic properties of clove oil and extracts; specifically against *E. coli* and *S. aureus*. Eugenol alone has been shown to inhibit quorum sensing and the formation of biofilms. Quorum sensing is an action by which bacteria communicate within their own species, and interspecies. A biofilm is a grouping activity of microorganisms where the cells begin to adhere to each other creating a matrix of the

predominate microorganism, allowing for increased environmental advantages. With the ability to disrupt cellular membranes and decrease the expression of virulence-related exoproteins, euganol has a great advantage over an array of microbes (Singletary, 2014).

#### *Background information on Dimethyl Sulfoxide*

Dimethyl Sulfoxide is an organic sulfur compound that acts as a polar aprotic solvent. It has an appearance of a colorless liquid, and has the ability to penetrate biological membranes; a polar aprotic solvent has the ability to dissolve both polar and nonpolar compounds. Dimethyl Sulfoxide also has been used in many laboratories because of its many abilities to solubilize drugs, which by themselves are not soluble. By being able to solubilize drugs that alone are not soluble, laboratory technicians are able to test a larger array of drugs, and their potential effects that they could have on biological membranes and cells (Da Violante et al., 2002).

### Microorganisms Used

#### *Background information on Staphylococcus aureus*

*Staphylococcus aureus* is an organism found on the skin and in the nose of humans and animals. It is coccal in shape, and gram-positive. In addition, *S. aureus* is catalase positive and is able to reduce nitrates. Although not always pathogenic, *S. aureus* is commonly associated with skin, eye, nose, and throat infections. In the clinical field, *Methicillin-resistant Staphylococcus aureus*, MRSA is a large threat to those harboring the microbe as well as those being affected by the pathogenic effects of MRSA. First discovered in pus from a surgical abscess, *S. aureus* reacts with hydrogen peroxide creating pus upon contact with the agent; this is what it means to be catalase positive. It was soon after learned that around twenty percent of the worldwide human population is long-term carriers of *S aureus*, concluding that it is a naturally occurring bacteria that is found frequently as human flora (Department of Health, 2014). In this experimental procedure, *Staphylococcus aureus* Presque Isle #4651 was provided by Wagner College's Biological Sciences Department.

#### *Background information on Escherichia coli*

*Escherichia coli* is a gram-negative, rod-shaped bacteria commonly found in the lower intestines of humans and animals. It is a facultative anaerobe, meaning *E. coli* can make adenosine triphosphate, which is a form of energy for cellular organisms with or without the presence of oxygen. Although *E. coli* is part of the normal flora of the intestines, some strains are pathogenic, and if found in products, a major recall of the product occurs due to contamination. There are some benefits of *E. coli*, primarily

vitamin k2 production. This vitamin is fat-soluble, which is needed for the complete synthesis of proteins for blood coagulation as well as the binding of calcium to bones and tissues. Without this vitamin, uncontrollable bleeding occurs and weakened bones begin to become a result without the calcification (Department of Health, 2015). In this experimental procedure, *Escherichia coli* Presque Isle # 336 was provided by Wagner College's Biological Sciences Department.

### Media Used

#### *Background information on Mannitol Salt Agar*

Mannitol salt agar plates have the compositional make up of mannitol, phenol red, salt, agar, distilled water, beef extract and peptone. This make up allows for the medium commonly called mannitol salt agar, which is able to identify *Staphylococcus aureus* selectively and differentially. With a salt content of 7.5%, many microbes whether they are gram positive or negative, cannot withstand the high salt concentrations of the medium. This allows for the selectivity of the MSA plates; by actively eliminating microbes from non-pure cultures, one can have an easier time identifying the microbe that can grow on the media (Shields and Tsang, 2006).

Mannitol salt agar plates also contain phenol red, which is an ingredient that changes the color of the media allowing for a differential aspect of the composition of MSA plates. Phenol red is able to change the color of the plate when the pH of the plate is lowered to acidity levels under 6.9. The pH of the plate is able to drop to a lower number by the ability of *S. aureus* to ferment the mannitol sugar. When a bacterium is able to withstand the high salt concentrations and ferment mannitol, the pH is lowered to anywhere below 6.9, and phenol red changes the color of the plate from red to a yellow color (Shields and Tsang, 2006).

#### *Background information on Eosin Methylene Blue Agar*

Eosin methylene blue is a plate that has the ability to inhibit the growth of gram-positive bacteria; allowing for only gram-negative bacteria to grow. These plates are extremely useful in the isolation of *Escherichia coli*, via pathways that are both selective and differential. With a compositional make up of lactose, sucrose, peptone, dipotassium phosphate, agar, eosin Y, methylene blue, and distilled water. Sucrose and peptone add nutritional value to the media for the inoculated microorganisms. Dipotassium phosphate is a buffer added whose purpose is to adjust the agar to a pH level that would allow the dyes of the agar to react properly with the lactose fermenters. Without the dipotassium phosphate in the composition of the agar, the dyes would not react properly, and there

will be no lactose fermentation because the pH will be too high (Archana and Cheeptham, 2007).

Other components such as eosin Y allow for the selective growth of gram-negative bacteria, and inhibiting the growth of gram-positive bacteria. Lactose is the main component in eosin methylene blue plates that is fermented. The lactose fermenting gram-negative bacteria appear as colored colonies, and the bacterium that do not ferment lactose appear as colorless colonies. As *E. coli* grows on the plate, it forms as a nucleated colony with a dark green center.

*Escherichia coli* will grow with a metallic green sheen due to the rapid lactose fermentation; this fermentation produces acids that then lower the pH, making the environment more acidic. This acidic environment promotes absorption of the dyes and the colonies grow as darker colors such as purple/black. Microbes that do not ferment lactose such as *Salmonella* or *Shigella*, increase the pH, making the environment more basic. A more basic environment does not ensure dye absorption, making the colonies grow colorless, allowing for the selective and differential identification of gram-negative bacteria and other coliforms (Archana and Cheeptham, 2007).

#### *Background information on Nutrient Broth*

Nutrient both is a liquid medium made up of powdered beef extract and peptone. These two ingredients allow for non-selective and non-differential growth of microbes. This allows one to culture the microbes growing to see if they are pure or not, and this can also help validate one's research. By being able to see the cultures undergo growth on sterile media which will have no chemical influences, one can deduce if the cultures have been contaminated or not.

### Prevalence of Foodborne Pathogens and Illnesses

#### *Foodborne pathogens and illnesses in the United States of America*

As America made advancements in the preparation and handling and distribution of food products, the practice of reducing transmissible food borne illnesses has been an ongoing battle. In America alone *E. coli* non-0157 has been responsible for 31,229 food borne related illnesses. Staphylococcal food poisoning has been recorded to have caused 185,060 cases in 1999 (Mead et al., 1999).

In more recent news, it was seen as of 2011, *E. coli* was the cause of 112,752 food borne related illnesses, and that *S. aureus* was the cause of 241,148 food borne related illnesses. If these numbers weren't staggering enough, it is believed that hospitals, clinics and the population is underreporting and misdiagnosing these illnesses. These two articles are actually related, helping track the amount of foodborne illnesses, helping to

allot resources and prioritize interventions associated with preventing future food borne illnesses. The constant active and passive surveillance of the food related illnesses are needed to record how we are counter adapting to the adaptive methods of bacteria in the food industry's efforts to eliminate bacteria from food handling environments (Scallan et al., 2011).

### *Transnational challenge of foodborne diseases*

With the advancements and the increase of social, political and economic interdependence, the spread of disease has increased via transnational trade and travel (Käferstein et al., 1997). As the food industry has become increasingly globalized, the international trade of not only food products but also disease has increased. Factors such as mass production, environmental dynamics, and the inadequate knowledge of proper handling have lead to the rise of food-borne illnesses in both developing and industrialized countries (Käferstein et al., 1997). With improper handling of food and mass production of food, it is easy to spread food-borne related illnesses without knowing if the products are contaminated or not. With a better understanding of how microbes spread and an increase in the conscious effort to share information among nations regarding outbreaks of contaminated food supplies, researchers and scientists can better the international trade of the food industry worldwide, as well as containment and prevention of the transmission of foodborne related illnesses.

## **II. Objectives**

The intention of this experimental research was to evaluate the effectiveness and antimicrobial properties of clove oil and turmeric on *Staphylococcus aureus* and *Escherichia coli*. By diluting the extracts to various decreasing levels, and incorporating a culture of each bacterium in their own tube, it was possible to test the individual strengths of the extracts on the bacteria. Other than testing the strength of the extracts, using a dilution series, a separate factor was to see how diluted the extracts can become before their possible bactericidal effect is no longer effective. The effectiveness of the dilutions can be seen through plating each of the tubes onto what is called a petri dish. Each petri dish contained agar, which is a medium to allow growth of the bacteria if it survived the possible antimicrobial agent.

With the continuing fight on microbes in the food and packing industry; and the battle to find safe antiseptics to fight against bacteria, the use of natural remedies could come into play. The use of natural remedies against microbes can prove a safer and more effective alternative to chemically synthesized antimicrobials. The microbes, *Staphylococcus aureus* and *Escherichia coli* were chosen because they occur naturally on

and inside the human body. This could prove useful for future research and if there are antimicrobial properties of clove oil and turmeric, their properties can be transcribed to other industries such as healthcare or the beauty industry using the properties of clove oil and turmeric to play a role in warding off the bacteria in hospital settings, or then using day to day beauty appliances. By being able to target specific microbes, and prevent their growth for whatever purpose could prove useful for those who are immunocompromised, elderly, young, and even the general population and their overall health.

### **III. Materials and Methods**

#### Preparation of Media

When the media was prepared, whether broth or agar, it was imperative to follow the directions listed on the bottles. By doing so one successfully executed the proper steps to make the media required by carrying out the procedure.

#### *Preparation of Nutrient Broth*

To prepare nutrient broth, eight grams of the powder were weighed on a scale. Then the powder was suspended in a beaker or Erlenmeyer flask with one liter of purified or distilled water. To mix thoroughly, a stir bar was placed in the container chosen to mix the solution, and the container was placed on a stirring hot plate. This allowed for a constant temperature, and the mixture was constantly being stirred. After the broth was evenly distributed, it had a translucent appearance. To sterilize the broth, the entire container was sterilized while holding the entirety of the broth, or non-sterile broth could be transferred to clean tubes, capped, and then sterilized via the use of the autoclave. When putting capped tubes in an autoclave, it is best not to fasten the cap entirely because that can build up pressure in the tubes causing a burst, resulting in the loss of materials not only for yourself, but for also one's peers.

#### *Required materials to prepare Nutrient Agar*

When nutrient agar was prepared, the designated 28 grams of powdered agar was obtained and weighed out and mixed with one liter of distilled water. To ensure proper mixing of the agar, the powder and one liter of water were placed in a flask or beaker with a stir bar. The container was placed on a magnetic stirring hot plate, which allowed the stir bar to spin at a speed at which the agar dissolves homogenously. To test to see if the agar was mixed thoroughly, a small amount of the mixture was taken out and slid down the inside of the tube. If small clumps were observable, then those are the solidifying agents. These solidifying agents are what allow the agar to solidify when it is poured to make plates. Without these agents, the plate would appear as a gelatinous liquid

that would not settle and solidify completely. Another way to easily see if there are solidifying agents present, one could transfer some of the mixture to a tube, and after a minute or so, a dense milky cloud can be seen at the bottom of the tube. That is also the solidifying agent, but in a much higher concentration. Before using the agar for any purpose, it needs to be sterilized via the use of an autoclave on a wet cycle. A wet cycle is a setting on an autoclave to sterilize materials that are either liquid or aqueous in nature, programmed to a temperature of 121° Celsius at 15psi for 15 minutes.

#### *Required materials to prepare Mannitol Salt Agar*

Mannitol salt agar follows the same guidelines as making any other agar. The only difference is the amount of the powdered agar that is mixed with distilled water. To make MSA, 111 grams of powdered agar are required to a ratio of one liter of distilled water. Mannitol salt agar should be properly mixed to a light boil with the use of a stir bar and a magnetic stirring hot plate. Complete distribution or dissolving spreading of solidifying agents should be checked for before the agar is either autoclaved, or transferred to a conduit apparatus and then autoclaved. It was important to make sure there is an even spread of solidifying agents so the plates solidify and form properly. When put into the autoclave, the agar was put through a wet cycle because it is an aqueous substance.

#### *Required materials to prepare Eosin Methylene Blue Agar*

Mixing 36 grams of powdered EMB agar with one liter of distilled water would make eosin methylene blue agar. It is essential that the agar is mixed properly and that the solidifying agents and ingredients of the agar are mixed evenly. The protocols to make EMB agar is the same for other agars; before autoclaving the agar, the agar was mixed thoroughly and heated on a magnetic stirring hot plate to ensure an even mixture. The agar also went through a wet phase when put in the autoclave.

#### Equipment

Throughout this experimental procedure, various instruments and machinery were utilized. A magnetic stirring hot plate is a machine that has the ability to heat up substances when the aforementioned substances are placed upon it. With the ability to use magnets to stir the mixture, an even distribution of the substance can be obtained. This is important to the experiment, because the lack of a homogeneous mixture can drastically affect the outcome of the materials being used.

An autoclave is a pressure chamber with the sole purpose of providing the ability to sterilize any substance that is put through a wet or dry cycle. These wet and dry



cycles are used to designate the nature of the machine's automated washing technique. Wet means that it a wash cycle specifically designed for containers containing substances that are liquid or aqueous. A dry cycle is a cycle used upon materials that do not contain any liquid or aqueous solutions. These cycles are each 15 minutes in length, and completely sterilize the materials. Heat resistant gloves are needed to handle this equipment for the chance of brushing up against the inside of the machine and for removing one's materials. The materials sterilized will reach up to 121 degrees Celsius. When the materials such as agar are removed from the autoclave, it needs to be poured before it solidifies in the container that it is being held in. A microvoid air controlled plate pouring station is utilized for pouring agar into petri dishes. This pouring station's design decreases the amount of microorganisms that are able to travel through the air over the pouring station. With the use of micro vents, there is a dramatic reduction in the number of microorganisms present in the space of the pouring station.

### Biological Materials and Compounds

Biological materials and compounds used in this experiment ranged from microorganisms such as *Staphylococcus aureus* Presque Isle #4651 and *Escherichia coli* Presque Isle # 336 to mannitol salt agar (Difco), eosin methylene blue agar (Difco), and nutrient agar (Difco), as well as nutrient broth (Difco). These microorganisms were used because they are commonly found through day-to-day activities and their prevalence to cause food borne illnesses. The agars used allow the experimenter to identify the microorganisms as they are used during the experiments.

### Other Materials

Other materials used in the experimental procedure include graduated cylinders, pipettes, a pipettor, an electronic scale, disposable trays used for weighing out the powdered materials, test tubes, caps, stir bar and the magnetic stirring hot plate. Without these accessory materials, this procedure would not have been possible. With the pipettes and pipettor, transferring agar and bacteria was a feasible task, with these tools, the risks of contamination to the biological and chemical materials was lowered, as well as the chances of spills of said materials. The scale and disposable trays were necessary for accurately weighing out powders needed to make up the media needed for the experiment, and culturing of the bacteria. Tubes and caps were needed to hold the media as well as the cultures used in the experiment. The magnetic stirring hot plate along with the stir bar was necessary to provide evenly mixed materials, if not evenly mixed it would have skewed the experiment.

## IV. Procedure

### Dilutions

A dilution series is a row of tubes that has a decreasing amount of a variable that is being tested. In this experiment the variables or extracts being tested were clove oil and turmeric. In each dilution series there were five tubes, each containing nine milliliters of nutrient broth. Before adding anything to the tubes containing the nutrient broth, the extracts have to be dissolved in DMSO (Sigma Chemical). With a ratio of .1mL clove oil to .9mL DMSO, and .1g turmeric to .9mL DMSO, the extracts must be dissolved directly prior to the addition of them to the first tube of the dilution series. For each extract being dissolved individually, this makes one milliliter of extract and DMSO being added to the first tube of the dilution series. After the one milliliter of mixture was added, the tube was gently inverted 10 times, and after inverting the first tube, one milliliter was removed and added to the second tube which was uncapped directly before the adding of one milliliter. This process of inverting and transferring one milliliter to the next tube was repeated until the fifth tube is reached. In that case, the milliliter was added and the tube was inverted 10 times. By this time one dilution series was done. This process was repeated nine times total for clove oil and nine times total for turmeric for *S aureus*, and another total of 18 dilution series is repeated for *E. coli*. This large number of dilution gives a larger sample size reducing the number of outside and uncontrollable variables that could have an effect on the experiment.

### Pour Plates

To perform pour plates the agar must be made first, after the agar is made there are three distinct ways to pour plates. The first is that once the agar comes out of the autoclave in a beaker or flask, the agar can be poured out directly from that container. Another way plates can be made is that the agar can be transferred out of the original beaker or flask with the use of a pipette. The method that was used was that 20mL of agar was transferred into tubes directly after being mixed with distilled water. The tubes were then loosely capped to prevent pressure build up, and/or the breaking of the tubes. After the tubes were autoclaved under a wet cycle, they were left to cool momentarily but not long enough for the agar to start solidifying. While the tubes were cooling, the bacterial cultures were transferred each with a new and sterile pipette to marked plates corresponding to their tube number. At this point in time the agar would be uncapped one at a time and simultaneously poured on to the plates. The cap to the petri dish would be left slightly off the dish to allow vapor release and the cooling of the agar. Utilizing a microvoid air controlled plate-pouring station; the handling of agar is done in an environment that decreases the chance of contamination.

### Technique

The key to this experiment was to be able to carefully label each tube, plate, and every culture grown. Calling for 36 dilution series, 1,080 plates, and three different agars, it could be easy to mislabel a plate or culture, which would then in time skew the results. Using a simple permanent marker to label each tube and plate, mixing up the materials had a slim possibility. Another technique that was essential to this procedure was to make sure every surface was washed preferably with bleach when handling sterile materials, and to make sure gloves were being used as well as with washed hands. Decreasing the possibility of contamination is a main goal in the experimental procedure, because if there was contamination, the results could be determined invalid, due to the fact that if there was a contamination of the materials, there is a possibility that the set up done initially could have been done wrong leading to a multitude of mistakes that could cause an inaccuracy.

### Specifics

Starting off the procedure, the dilution sets had to be made. The nutrient broth was made by taking 8 grams of the nutrient broth powder, dissolving it in 1 liter of distilled water, and heating it on a hot plate station until it is translucent. When the broth is fully cooked or translucent, 9 milliliters of broth was transferred to a tube. The tube racks are then set up, which had three rows of 5 tubes per extract for a given microbe and extract, meaning there are 30 labeled tubes containing nutrient broth on a tube rack. This was done in triplicate, allowing for more concise results. After the tube racks were set up they were put into the autoclave on a liquid cycle for 15 minutes to sterilize the broth. It is important to sterilize because it is a precaution done to reduce the risk of cross contamination allowing for more valid results.

As the autoclave was going through the cycle, it was time to set up the extracts to be dissolved in DMSO. Dimethyl sulfoxide is an organic sulfur compound that acts as a polar aprotic solvent. This is important because a polar aprotic solvent has the ability to dissolve both polar and nonpolar compounds. When the liquid cycle had completed, the racks were taken out of the autoclave, and after cooling down, an extract and DMSO solution were added to the first tube of the designated row. For clove oil, 0.1 milliliters is mixed with 0.9 milliliters of DMSO. With turmeric, 0.1 grams is mixed with 0.9 milliliters of DMSO. These ratios are done to properly dissolve the extract in the broth so it does not all clump to the bottom and so that the extracts have an even effect on the microbes that the thesis is testing.

Now that the first tube contained the appropriate extract, it was capped, inverted ten times, and 1 milliliter was taken out and transferred to the next tube in that row. This

procedure was repeated until the fifth tube is reached. Then the next row was worked on and then the next row, and so on. Each consecutive tube of a given row is an increasing tenfold dilution with decreasing amounts of the extract. This is to show the efficiency of either clove oil or turmeric in decreasing amounts on the microbes being tested. As the dilution tubes were completed, one drop of the microbe being tested was placed into the tubes. At this point there were 15 tubes for each extract in a given tube rack, meaning there were 30 tubes in a singular tube rack because both clove oil and turmeric were on a tube rack. The tube racks were then incubated allowing for the microbes to grow. The incubator was set to 37 degrees Celsius because that is the temperature of the human body. Since these microbes are found on or in the human body, that is their optimal temperature to work at and grow.

To make the process easier in terms of knowing which tubes to work with, all clove oil tubes were labeled 1 to 15, and all turmeric tubes were labeled 16 to 30. Each tube rack was labeled either A, B, or C when working with *S. aureus*. When working with tubes containing *E. coli*, the clove oil and turmeric tubes followed the same numbering procedure, but were labeled D, E, F. This was done to know which group was being worked with, and which tubes were being worked with at any given time.

After the microbes were incubated for 24 hours, pour plates were done. One dilution tube has 1 milliliter taken out of it six times, making six plates from one tube. Forty-five tubes were made from one subsection of a group twice; the subsections were either clove oil or turmeric. When working with *S. aureus*, nutrient agar plates and mannitol salt agar plates are necessary. Nutrient agar was made with a ratio of 28 g to 1 liter of distilled water; MSA plates were made with a ratio of 111g to 1 liter of distilled water. As they had completely boiled and spun to an even consistency, 20 milliliters of agar was transferred to an empty tube, and this process continued until the entirety of the agar had been utilized; one liter of agar gave, on average, 50 tubes. Although only 45 tubes were necessary for a single set of pour plates, it was useful to have extra tubes if some tubes lost too much agar in the autoclaving process.

Nutrient agar plates were done first, and then the MSA plates were done. Although the order of which agar was made and used to plate first doesn't have an effect on the experiment, it was beneficial to make up and use one agar at a time to avoid risking contamination by having the agar sitting out after it was sterilized. Also if agar is autoclaved, it will solidify after it cools down, so it would prove futile to autoclave both at one time and try to do 90 plates all at once. For a singular petri dish, 1 milliliter of bacteria was taken out of the dilution and one sterilized tube of agar was poured into a dish in that order. The tube of agar cannot be too hot, or it would kill the microbes that are being tested, but if the agar cooled too much, then it would solidify in the tube. After

less than 15 minutes, the plates had cooled down and were able to be put in the incubator for 24 hours and then the pour plates were ready to be read.

When completing the plates regarding *S. aureus*, *E. coli* was next. When dealing with *E. coli* Nutrient agar with the same consistency of 28 grams to 1 liter was used. Instead of MSA plates, EMB plates were used. To make EMB agar, with one liter of distilled water, 36 grams of the EMB agar is mixed. The same steps were followed when making the pour plates regarding *E. coli* as *S. aureus*. After completing all the steps and triplicates required for the experiment, the plates were examined and all results were recorded.

## **V. Results**

### Observations

The purpose of this experiment is to test the ability of diluted clove oil and turmeric extract's bactericidal properties on the microorganisms *S. aureus* and *E. coli*. As the extracts were diluted to decreasing concentrations of 1:10, 1:100, 1:1,000, 1:10,000, and 1:100,000, there was a clear pattern that the more diluted that the extract was, the less of an effect the extract had on the microorganisms. When the petri dishes were plated with a more diluted extract from the dilution series, such as 1:10,000, and 1:100,000 the bacteria grew exponentially on the plates. As the numbers on the plates were too many to count, the marking "TMTC" was made. The colonies that were too many to count had colony numbers well over 300 colonies.

Clove oil and turmeric were both tested for their antimicrobial properties on the bacteria *S. aureus* and *E. coli*. It was shown that clove oil had a great bactericidal effect on *S. aureus* but turmeric had less of an effect on the microbe. When testing the effect of the extracts on the microbe *E. coli*, both clove oil and turmeric had good bactericidal effects on the microbe. At times it was also observed that there were petri dishes with microbial growth on the plates with higher concentrations of the extract. With larger sample sizes, it was seen that this abnormal growth in higher concentrations of extract was not a norm for the microbial growth.

For 24 hours, sets of plates were left in an incubator at 37° Celsius. When the plates were taken out to count the colonies, both *S. aureus* and *E. coli* had distinct smells. *S. aureus* had a distinguishing smell of butter, and *E. coli* had an odor of bacon. In addition to the selective and differential plates used to double check that the microbes being worked with were the correct microbes, the distinguishing scents of the microbes were an observation that were made to further identify the microbes on the plates. The selective and differential plates were a key identifier of the microbes being used. As

MSA plates changed color from red to yellow, and EMB plates changed from red to purple.

### Colony Counts

The following tables are a numerical representation of the growth of *Staphylococcus aureus* and *Escherichia coli*. The tables are set up in such a way that the group is labeled A through F; A to C represents *S. aureus* and D to F represents *E. coli*. The tube numbers one to fifteen represent the cultures that correlated to clove oil, which was then plated to nutrient agar plates and one of the selective and differential plates. Tube numbers sixteen to thirty correlated to turmeric extract used, which was then plated onto nutrient agar plates and one of the selective and differential plates. As there are dilution series of five going from 1:10 to 1:100,000, every five tubes on the diagrams completes a dilution series, and then a new series begins. Tubes 1, 6, 11, 16, 21 and 26 are all the first tubes of a dilution series.

**Table 1a: Group A, Clove Oil**

	Nutrient Agar				MSA		
	Plate ID	1	2	3	1	2	3
Tube #	1	0	0	7	0	0	0
	2	0	0	0	0	0	0
	3	0	0	0	0	0	0
	4	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	5	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	6	0	0	0	0	0	0
	7	0	0	0	0	0	0
	8	650	700	TMTC	0	TMTC	TMTC
	9	0	TMTC	TMTC	TMTC	TMTC	TMTC
	10	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	11	0	0	0	0	0	0
	12	0	0	0	0	0	0
	13	0	58	34	200	100	110
	14	300	200	150	230	TMTC	TMTC
	15	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

**Table 1b: Group A, Turmeric**

	Nutrient Agar			MSA			
	Plate ID	1	2	3	1	2	3
Tube #	16	10	7	17	19	15	1
	17	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	18	TMTC	TMTC	TMTC	0	TMTC	TMTC
	19	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	20	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	21	115	8	161	16	86	158
	22	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	23	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	24	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	25	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	26	0	0	17	30	13	6
	27	TMTC	TMTC	250	TMTC	TMTC	TMTC
	28	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	29	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	30	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

The above tables show that the clove oil has the ability to eliminate the growth of *S. aureus* everytime when the dilution rate 1:100 was used. Also some 1:1000 dilution rates of clove oil was seen to be able to eliminate the growth of *S. aureus*. It was seen that turmeric during this trial had a poor antimicrobial affect on the microbe, *E. coli*.

**Table 2a: Group B, Clove Oil**

	Nutrient Agar			MSA			
	Plate ID	1	2	3	1	2	3
Tube #	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
	3	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	4	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	5	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	6	0	0	0	0	0	0
	7	150	TMTC	150	0	0	0
	8	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	9	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	10	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	11	0	0	0	0	0	0
	12	0	0	0	0	0	0
	13	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	14	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	15	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

**Table 2b: Group B, Turmeric**

	Nutrient Agar					MSA		
	Plate ID	1	2	3		1	2	3
Tube #	16	70	83	65		30	22	32
	17	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	18	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	19	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	20	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	21	TMTC	TMTC	TMTC		92	90	87
	22	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	23	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	24	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	25	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	26	TMTC	TMTC	TMTC		TMTC	TMTC	90
	27	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	28	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	29	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	30	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC

It can be seen that clove oil had a antimicrobial effect on the growth of *S. aureus*. In tubes 6 through 10 it can be seen that only the dilution rate 1:10, had a strong antimicrobial effect, when the culture was poured to make the nutrient agar plates. It can also be seen that turmeric had a very poor antimicrobial effect on *S. aureus*.

**Table 3a: Group C, Clove Oil**

	Nutrient Agar					MSA		
	Plate ID	1	2	3		1	2	3
Tube #	1	0	0	0		0	0	0
	2	145	170	200		0	0	0
	3	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	4	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	5	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	6	0	0	0		0	0	0
	7	0	0	0		0	0	0
	8	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	9	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	10	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	11	0	0	0		0	0	0
	12	0	0	0		0	0	0
	13	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	14	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	15	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC



**Table 3b: Group C, Turmeric**

	Nutrient Agar			MSA			
	Plate ID	1	2	3	1	2	3
Tube #	16	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	17	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	18	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	19	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	20	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	21	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	22	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	23	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	24	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	25	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	26	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	27	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	28	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	29	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	30	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

It can be observed that clove oil had a standard antimicrobial effect up until the dilution rate of 1:10, as well as turmeric having no antimicrobial effect on *S. aureus*.

**Table 4a: Group D, Clove Oil**

	Nutrient Agar			EMB			
	Plate ID	1	2	3	1	2	3
Tube #	1	0	0	0	TMTC	0	45
	2	1	0	0	0	0	0
	3	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	4	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	5	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	6	0	0	0	75	0	10
	7	16	0	0	0	0	1
	8	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	9	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	10	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	11	0	0	0	0	0	0
	12	0	0	TMTC	0	0	0
	13	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	14	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	15	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

**Table 4b: Group D, Turmeric**

	Nutrient Agar					EMB		
	Plate ID	1	2	3		1	2	3
Tube #	16	0	0	0		0	0	40
	17	0	0	0		0	0	0
	18	TMTC	TMTC	TMTC		0	85	TMTC
	19	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	20	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	21	0	0	0		0	0	0
	22	0	0	0		TMTC	TMTC	TMTC
	23	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	24	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	25	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	26	0	0	0		0	0	0
	27	0	0	TMTC		0	0	0
	28	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	29	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	30	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC

Clove oil and turmeric have good antimicrobial effects against *S. aureus* and *E. coli*. The dilution rate 1:100 is the dilution rate that contained the most diluted concentrations of the extracts, and still had a standard antimicrobial effect against *S. aureus* and *E. coli*.

**Table 5a: Group E, Clove Oil**

	Nutrient Agar					EMB		
	Plate ID	1	2	3		1	2	3
Tube #	1	0	0	0		0	0	0
	2	0	0	0		0	0	0
	3	TMTC	TMTC	TMTC		0	TMTC	TMTC
	4	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	5	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	6	0	0	0		0	0	0
	7	TMTC	TMTC	TMTC		0	0	0
	8	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	9	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	10	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	11	0	0	0		0	0	0
	12	TMTC	TMTC	TMTC		0	0	0
	13	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	14	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	15	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC

**Table 5b: Group E, Turmeric**

	Nutrient Agar			EMB			
	Plate ID	1	2	3	1	2	3
Tube #	16	0	0	0	0	0	0
	17	1	0	0	0	0	0
	18	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	19	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	20	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	21	0	0	0	0	0	0
	22	16	0	0	0	0	0
	23	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	24	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	25	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	26	0	0	0	0	0	0
	27	0	0	TMTC	0	0	0
	28	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	29	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	30	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

It can be seen that clove oil has a constant antibacterial effect against *E. coli* with the dilution rates 1:10, when plated on nutrient agar. When the same cultures are poured to make the eosin methylene blue plates a constant antimicrobial effect with the dilution rate 1:100 can be observed. With the extract turmeric, a standard antimicrobial effect with the dilution rate of 1:10 can be observed.

**Table 6a: Group F, Clove Oil**

	Nutrient Agar			EMB			
	Plate ID	1	2	3	1	2	3
Tube #	1	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	2	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	3	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	4	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	5	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	6	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	7	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	8	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	9	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	10	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	11	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	12	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	13	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	14	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC
	15	TMTC	TMTC	TMTC	TMTC	TMTC	TMTC

**Table 6b: Group F, Turmeric**

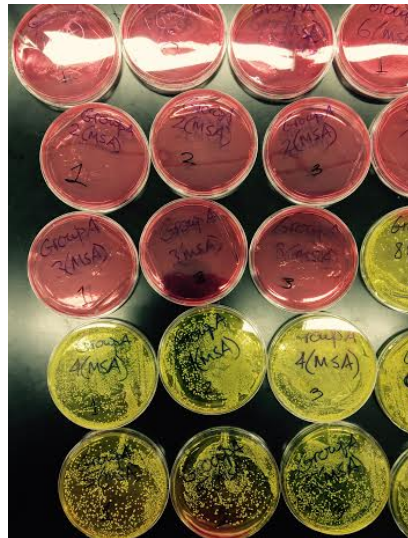
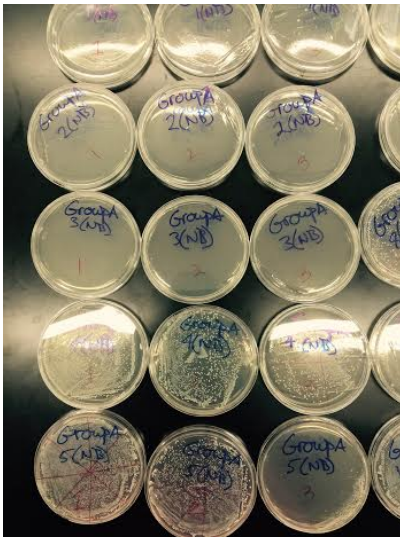
	Nutrient Agar					EMB		
	Plate ID	1	2	3		1	2	3
Tube #	16	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	17	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	18	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	19	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	20	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	21	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	22	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	23	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	24	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	25	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	26	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	27	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	28	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	29	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC
	30	TMTC	TMTC	TMTC		TMTC	TMTC	TMTC

It can be seen that the extracts turmeric and clove oil had no effects against on the bacterial cultures of *S. aureus* and *E. coli*.

## VI. Discussion

After reviewing the data, it can be determined that clove oil and turmeric have an antimicrobial effect on *S. aureus* and *E.coli*. It was evident that clove oil had a greater effect on *S. aureus* than turmeric did, but it was seen that both clove oil and turmeric had positive bactericidal effects on *E.coli*. Through this experiment the effect of testing the antimicrobial capabilities on the microbes *S. aureus* and *E.coli* was accomplished. The prediction of clove oil having a better effect in inhibiting *S. aureus* was observed. This prediction was made because clove oil is commonly applied to the skin, and since that is where *S. aureus* is usually found, it was determined that clove oil will have a better effect on that microbe, and in the end this was observed. The prediction that turmeric would have a better effect on *E.coli* was made because turmeric is normally ingested, passing through the intestinal tract, where *E. coli* is normally found. The procedure, predictions, observations and results all followed the general trend predicted. This was favored because it showed that there is potential in the use and application of natural remedies for the use of preservation and processing of food products.

Figure 1 shows the growth of *S. aureus* on nutrient agar (pictured left) and mannitol salt agar (pictured right). It can be seen that the growth of the microbe is inhibited up to a 1:1,000 dilution. On the right the yellow plates show the growth of *S. aureus* through the color change from red to yellow.



Figures 1: Growth of *S. aureus* on nutrient agar (left) and mannitol salt agar (right).

Figure 2 shows the growth of *S. aureus* on a nutrient agar plate. The non-motile microbes are only seen growing in pinpoint colonies. Figure 3 shows the growth of *S. aureus* on a mannitol salt agar plate. It is the colors change from red to yellow shows the fermentation of the mannitol. The areas that are red are areas where the microbe did not colonize. Figure 4 shows the growth of *E. coli* on nutrient agar (left) and eosin methylene blue (right). The color change on EMB plates from red to purple shows the fermentation of the lactose in the agar, caused by the growth of the microbes.



Figure 2: Growth of *S. aureus* on a nutrient agar plate.

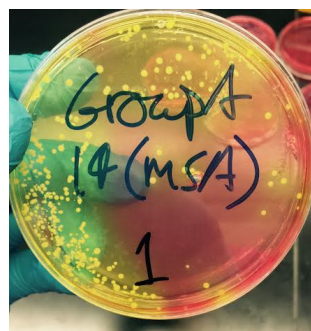


Figure 3: Growth of *S. aureus* on a mannitol salt agar plate.

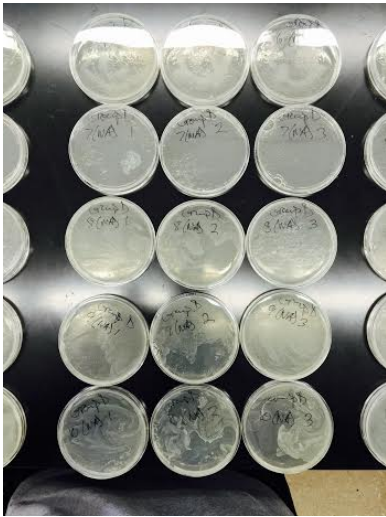


Figure 4: Growth of *E. coli* on nutrient agar (left) and eosin methylene blue (right).

The growth of *E. coli* on an EMB plate and on a nutrient agar plate are shown in figures 5 and 6 respectively. Figure 7 illustrates the ability of *E. coli* to produce a metallic green sheen when fermenting the components in the EMB agar.



Figure 5: Growth of *E. coli* on a nutrient agar plate.

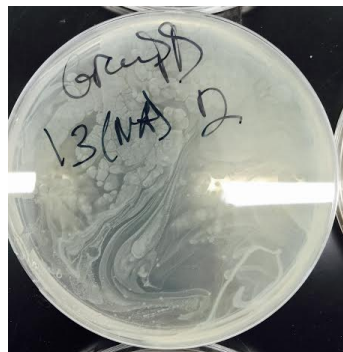


Figure 6: Growth of *E. coli* on an EMB plate.

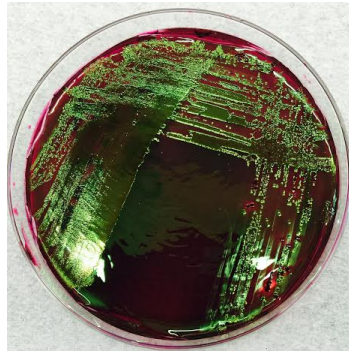


Figure 7: The ability of *E. coli* to produce a metallic green sheen when fermenting the components in the EMB agar.

#### Possible Sources of Error

Although the experiment was carried out as carefully as possible there are always various possibilities for error to occur. Whether it was not mixing the agar well enough to properly make the agar, or not using a clean technique to carry out the experiment, any number of factors could have skewed the experiment. When making the first round of nutrient agar, mannitol salt agar, and eosin methylene blue agar, the proper steps to make agar was not known, causing the agar to not properly solidify, leading to the discarding of the plates made. This is a possible source of error because one milliliter of bacterial culture is required for each plate, and the bacterial culture that was utilized for the plates also had to be thrown out, only leaving three milliliters in each tube from the original nine milliliters. This then led to use of the remaining three milliliters in each tube to make spread plates, where a small amount of the microbe was taken and with a flamed triangular spreader, the microbes were spread across the plates to spread the culture evenly. Although this allowed the spreading of the microbes evenly, the original procedure was not followed. Another possible source of error could have been the mislabeling of the petri dishes. When labeling the sets of petri dishes, it was seen that some plates were mislabeled with the marker before the microbes or agar were introduced to the petri dishes. The mislabeling of the plates could have led to the invalidation of the entire experiment.

#### Possible Weaknesses of the Experimental Procedure

After performing the experimental procedure, results were collected and analyzed. When going through the experimental procedure it was noticed that a negative control was not utilized. The importance of a negative control could have been to see if

the DMSO had any and all effect on the microbes *S. aureus* and *E. coli*. Although less than one milliliter of DMSO was used in the experiment, it is a chemical known to have potential toxicities to microorganisms. A negative control could have been creating serial dilutions with .9 mL DMSO with .1 ml distilled water, and carrying out the procedure on both *S. aureus* and *E. coli* to see if the DMSO had any contributions to the inhibitory effects seen in the experimental procedure.

## **VII. Future Research**

In the future, experimenting the antimicrobial effects of other natural extracts is an interest of mine. By being able to explore the natural effects of natural oils and spices, giving a healthier alternative to the preservation of food products may be reached. With the readiness of cleaner and healthier preservation techniques in a society where the food processing procedure is on public display whether it is organic or not, the integrity of food products can be upheld in a way that appeals to the public eye in a more positive way. To positively impact the processing and handling procedures of the food industry and possibly even other areas of medicine such as the use of antimicrobial creams and ointments which could be used in the cosmetic industry or in skin care.

## **VIII. References**

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## **Section II: The Social Sciences**



# **Relationship between Traditional Parenting Styles, and Helicopter Parenting**

Kendra Best (Psychology)<sup>1</sup>

Research suggests that parenting styles can influence a child's social, cognitive, and emotional well-being. There has been much literature published over the last few decades on the three traditional parenting styles of authoritative, authoritarian, and permissive. Helicopter parenting, a newly developed term that describes parents who control and hover over their children, has been a recognized style in recent years. The present study explores possible overlaps of these parenting styles among college students. It was hypothesized that authoritarian parenting style and helicopter parenting would be positively correlated, whereas authoritative and permissive styles would be positively correlated with autonomy. Results suggest a positive moderate correlation between authoritarian and helicopter parenting styles, whereas authoritative parenting style was linked to autonomy.

## **I. Introduction**

Parental involvement is associated with several positive and negative outcomes of a child's life (Schiffirin, Liss, Miles-McLean, Geary, Erchull, & Tashner, 2013). Previous literature has specifically explored the relationship and implications on parenting styles in the development of autonomy, self-esteem, and thinking styles during emerging adulthood. It has been suggested that parenting style plays an important role on individual and cognitive development, as well as social and psychological health. (Love & Thomas, 2014). Baumrind's (1991) two-dimensional framework of responsiveness (warmth and supportiveness) and demandingness (behavioral control), are broken down into four categories of parenting: authoritative, authoritarian, permissive, and rejecting-neglecting, in which parenting style has been described. Most recently, however, is the birth of "helicopter parenting," which is an emerging parenting style that has been used to describe parents who have a tendency to "hover" over their children (Moriarty, 2012).

An *authoritative parenting style* is characterized by exhibiting equal responsiveness and demand. Authoritative parents focus on a balance between teaching children independence, but also the importance of having boundaries and rules. They are

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<sup>1</sup> Written under the direction of Dr. Steve Jenkins for the independent study PS593: *Psychology Parenting Styles/Career Choice*.

generally found to be warm and involved with their children's lives (Watabe & Hibbard, 2014). Having an authoritative parenting figure has been found to be the style most correlated to positive development and self-efficacy (Turner, Chandler, & Heffer, 2009). Parental characteristics, such as warmth and responsiveness, have shown to be advantageous in the development of well roundedness in children. Griess (2007) found that undergraduate college students have a higher perceived optimism when raised with authoritative parents, due to proper encouragement and control from their parents.

An *authoritarian parenting style* is characterized by being extremely high in demand, but low in responsiveness (Watabe & Hibbard, 2014). These parents discourage discussion and debates, and solely decide themselves what behaviors are acceptable. Because authoritarian parents attempt to shape their child's behaviors and attitudes, children typically have little to no freedom. They also heavily value obedience and believe in forceful consequences. Authoritarian parenting has been associated with higher levels of physical and verbal aggression, especially physical aggression among boys (De la Torre-Cruz, Garcia-Linares, & Casanova-Arias, 2014).

A *permissive parenting style* is one that is characterized by being minimal in responsiveness, and very low in demand. Permissive parents are rarely concerned with their child's happiness or overall well-being, and do not properly attend to their child's needs (Watabe & Hibbard, 2014). With permissive parents, children are not required to properly behave, and little is typically asked of them. Permissive parents provide a lack of guidance to their children; therefore they often turn to other figures or outlets for support. The use of alcohol among children in permissive households has shown to be likely, especially between children in grades seven to eleven (Tucker, Ellickson, & Klein, 2008). Three quarters of adolescents from these households among 710 participants reported especially heavy drinking during grade nine.

The parenting style associated with the most negative outcomes is rejecting-neglecting. These parents neither provide support and encouragement, nor discipline. These children have their basic needs met, but are otherwise essentially ignored (Baumrind 1991). Thankfully, this parenting style is rare enough that most instruments that measure parenting styles do not include it.

Lastly, parents who are over-involved and overprotective are characterized by using a *helicopter parenting style*. As a result of over-parenting, young adults have found to have a sense of entitlement, believing that other people, like their parents, should solve their problems for them (Segrin, Woszidlo, Bauer, & Murphy, 2012). Because helicopter parenting facilitates little to no autonomy skills, there has been a growing concern among college administrators that witnesses this parental control over their children. Over

involvement, therefore, does not allow children to adjust and control their own college life, as many parents speak to college professors and administration on their child's behalf (Hunt, 2008). Montgomery (2010) found that children of helicopter parents tended to be neurotic, less open to new experiences, and dependent. Children with helicopter parents are more likely than children of non-helicopter parents to have decreased life satisfaction, and are at an increased risk for developing a depressive disorder (Schiffman et al.). In addition, helicopter parenting has positively correlated to a higher rate of recreational drug use and painkillers (LeMoyné & Buchanan, 2011). Some studies have identified that helicopter parenting can also lead to positive outcomes (Padilla-Walker & Nelson, 2012). The National Survey of Student Engagement (2007) found that college students who were raised by helicopter parents reported high engagement during their college years. Yet, these students also reported lower GPA's. In terms of social and emotional development, parental involvement has resulted in higher social efficacy and graduate school and career intentions. Nevertheless, it can also be related to more severe negative consequences such as lower self-efficacy and self-esteem (Bradley-Geist & Olson-Buchanan, 2013). Hence, the literature thus far on helicopter parenting has shown mixed results on how it may impact child development.

Parenting style differences between mothers and fathers have also been explored on the well being of adolescents (Raboteag-Saric & Sakic, 2014). Higher levels of life satisfaction and self-esteem were reported among adolescents with authoritative or permissive mothers, than those with authoritarian mothers. Adolescents who perceived their mothers as authoritative had higher levels of happiness when compared to any other parenting style. Likewise, fathers who were perceived as authoritative or permissive by their children produced higher results of well being, than those with authoritarian fathers. Concerning the impact of parenting style on mental health later in life, both maternal and paternal authoritarian style worsened participants' mental health, including psychological well-being, risk to self and others, and overall daily life functioning (Uji, Sakamoto, Keiichiro, Adachi, & Kitamura, 2013). Both maternal and paternal authoritative parenting style has shown to have a beneficial impact on participants' later mental health.

Another factor on the development of emerging adults is the further integration of technology, which allows parents to be in constant contact with their children. A recent survey found that 97% of people ages 18-24 report an average of 190.5 texts that are sent and received each day (Golonka, 2014). When compared to previous generations, moving out of the house allowed for the development of autonomy, due to the inability to contact their parents often. In contrast, the rapid evolution of technology has provided a plethora of ways to keep in touch with one another, which allow parents to be involved with their

children's lives at all times. Results indicate that parent's who scored higher on being authoritarian and helicopter parents predicted more frequent contact with their children (Golonka, 2014). Most noted was lower emotional autonomy among children who had helicopter parents due to the frequency of contact on a daily basis.

Overall, authoritative, authoritarian, permissive, and helicopter parenting styles all vary in their degree of positive and negative effects on emerging adults in college. Though research is overwhelmingly supportive of authoritative parenting and its positive effects on development and autonomy, other influences should be considered. Thus far, literature has not explored any possible overlaps among these four parenting styles, and how genders may be parented differently. The present study hypothesized that helicopter parenting could be associated with authoritarian style parenting, whereas permissive and authoritative parenting styles could lead to autonomous behaviors in emerging adults.

## **II. Method**

### Participants

Prior to conducting the experiment, the project was approved by the Human Experimentation Review Board (HERB) at Wagner College. Participants were 26 male and 54 female college students from a four-year liberal arts college in Staten Island, New York. All participants were compensated by receiving credit in their Introduction to Psychology class.

### Measures

*Demographics Questionnaire.* This questionnaire included questions on age, gender, major, graduating class, ethnicity, and how often participants talk to their parents via social media, texting, and/or over the phone.

*Helicopter Parenting Questionnaire (HPQ; Schiffrin, et al, 2014).* This questionnaire consisted of 15 questions using a 6-point type scale, ranging from "strongly disagree" (1) to "strongly agree" (6). The scale measures two facets: *helicopter parenting*, (e.g. My parent monitors my diet), and *autonomy* (e.g., "My parent encourages me to make my own decisions, and take responsibility for the choices I have made.")

*Parenting Style Assessment Questionnaire (PAQ; Robinson, Mandleco, Olsen, & Hart, (1995).* This questionnaire consisted of 30 items using a 5-point scale, ranging from "strongly disagree" (1) to "strongly agree" (5), to assess for authoritative, authoritarian, and permissive parenting styles. Participants were instructed to "try to read and think about each statement as it applies to you and your parents during your years of growing up at home."



### Procedure

Research time slots were added to a participant pool website, allowing Psychology 101 students to sign up for the study. On the date specified and chosen, participants reported to the testing room, in groups of approximately 15. All participants signed the informed consent form, and were asked to complete the demographics worksheet as well as the two questionnaires. Packets were all in a varied order. At the conclusion of the study, participants were given a debriefing worksheet with information about the purpose of the study and contact information.

### III. Results

In support of the hypothesis, a positive correlation between helicopter and authoritarian parenting styles was found,  $r(82) = .38, p > 0.01$ . Authoritative parenting style was positively correlated with autonomy  $r(82) = .29, p > 0.01$ . As expected, a negative correlation between authoritarian and permissive style parenting, was found  $r(82) = -.32, p < 0.01$ . There was no correlation between permissive parenting style and autonomy.

When doing a gender breakdown, among females, authoritarian and helicopter parenting styles were found to be positively correlated,  $r(54) = .39, p > 0.01$ , and likewise, correlated negatively with autonomy,  $r(54) = -.27, p < 0.05$ . Authoritative parenting style positively correlated with autonomy,  $r(54) = .38, p > 0.01$ , which was consistent with the overall hypothesis.

Among males, a negative correlation among authoritative and helicopter parenting,  $r(26) = -.43, p < 0.05$ . Likewise, comparing autonomy to permissive parenting,  $r(26) = -.49, p < 0.05$ . Most notably, no correlation between authoritarian and helicopter styles was found, in support of the hypothesis.

### IV. Discussion

In this study, we were able to identify a relationship between authoritarian and helicopter parenting styles. Additionally, authoritative and permissive parenting styles were found to positively correlate with autonomy. However, correlations differed when broken down by gender. Females remained in agreement with the hypothesis that authoritarian parenting correlates to helicopter parenting, meaning there is a relationship between strictness and over-involvement. However, among males, helicopter parenting was negatively correlated with authoritative parenting style. Permissive style parenting was correlated with autonomy, stating that the more permissive the parent, the less likely

they are to be over-involved in their child's lives. Most notably, authoritarian and helicopter parenting styles among males showed no correlation whatsoever.

Results suggest that gender roles may play a factor in how parents interact with their sons or daughters. Parents may be more likely to take a more permissive stance with their sons, due to the stereotype that males are more independent. Contrarily, parents may be more likely to be involved or hover over their daughters, due to the idea that women are seen as more emotional or timid (Plant, Hyde, Keltner, & Devine, 2000).

There were several limitations to the current study. First, the PAQ, HPQ, and demographics questionnaire are all self-report, and therefore may not accurately reflect the participants' honest answers. The participants used in this experiment were limited to a small sample size of students in Introduction to Psychology courses, with limited ethnic diversity. A more ethnically diverse sample size could account for variations among parenting styles in different cultures, and assess if a parenting style is more dominant in a certain culture than the others. The subjects were also drawn from the same college campus, with a slight variation in age range. Including more participants, and different age groups, could possibly account for a greater variation in data findings. Furthermore, because helicopter parenting is a fairly new concept, there is limited research on it thus far. Few studies have examined the effects of helicopter parenting among college students (Schiffirin et al., 2014).

Despite these limitations, the present study offers a unique correlational finding between Baumrind's (1991) parenting styles and the newly developed, helicopter parenting, that supported our overall hypothesis. In terms of parenting style effects, it may be beneficial for emerging adults to identify how much of their decision making is influenced by their parents. Subsequently, this may help adolescents work towards a more balanced relationship with their parents. Being able to classify parenting may also be useful in environments such as family counseling.

This research may also be useful for parents. Specifically, parents who have children going away to college may benefit from learning how their parenting style can impact the development of autonomy. The adjustment from constantly having a say in the everyday decisions of their children, to letting them begin being more autonomous, could be a difficult transition on parents (Whiteman, McHale, & Crouter, 2010).

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## **Section III: Critical Essays**



# **From the Island to New York City: Puerto Rican Educational Achievement and Policy Recommendations**

Katie Murphy (History)<sup>1</sup>

“Living in a sixth floor apartment in the Bronx was like living in jail,” Nancy Torres said when speaking about moving at age 10 to New York from the Puerto Rican countryside. In Puerto Rico, she and her brother and sister played outside often in the warm weather. When her family moved to the Bronx, they could not go outside to play on the city block without their mother’s supervision. They moved to New York City in the fall of 1955, so cold weather also limited their time outdoors. Catalino and Nancy Torres’ migration experiences, like other Puerto Ricans, offer a different and interesting twist on American immigration history. When Puerto Ricans came to the United States, they were considered migrants, and were not immigrants. Since 1917, Puerto Ricans have held U.S. citizenship. Since the 1950s, Puerto Ricans have migrated here for better economic opportunities. Yet they have faced discrimination and barriers to the American Dream. Puerto Ricans still have a high drop out rate from high school and lower wage jobs compared to other Hispanic groups and whites. This paper will look at what motivated the Puerto Rican migration and what can be done to change in order to lower their high school drop out rate in New York City, including programs to promote pre-school attendance and parent involvement, to change curriculum and to raise family wages. It concludes with a look at the Torres family and their own family’s contributions to this country, including in the U.S. Marine Corps. Educational achievement and occupational opportunity have increased for Puerto Ricans since they first migrated to New York City, however much more needs to be done.

The United States acquired Puerto Rico from Spain following their victory in the 1898 Spanish-American War and it became a territory of the United States. As a result of this acquisition, the economy was disrupted and poverty increased.<sup>2</sup> The United States made economic investments in Puerto Rico’s sugar industry, which had a devastating impact on the traditional and more labor-intensive coffee and tobacco industries. The

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<sup>1</sup> Written under the direction of Dr. Lori Weintrob for HI 325: *Immigrant New York City, 1800-2016*.

<sup>2</sup> Stephanie A. Marquez, “Race, Class, and Gender: Reformulating the Push and Pull Factors Explanation of Hispanic Immigration,” *Race, Gender, and Class* 4, no. 2 (1997): 45–55, 47.

coffee and tobacco industries declined in the years between 1898 and 1930. The tobacco industry came to an end in the early 1920s. Thousands of rural and working-class Puerto Ricans were forced to migrate to the coast and cities to search for jobs. In the years between 1898 and 1930 wages fell, living standards deteriorated, and unemployment increased.<sup>3</sup> Unemployment became an epidemic in Puerto Rico in the 1920s.<sup>4</sup> These were push factors for Puerto Ricans to migrate to New York City where there was plenty of work in low skill manufacturing jobs.<sup>5</sup>

In 1917 Puerto Ricans were granted citizenship rights under the Jones Act of 1917.<sup>6</sup> In 1924 Congress passed the Johnson-Reed Act. These laws shaped immigration patterns in the United States until the 1965 Hart-Cellar Act was passed. The Johnson-Reed Act of 1924 put quotas on immigration groups. The quotas allowed only two percent of each immigrant population, recorded during the 1890 census, into the United States each year<sup>7</sup>. When the Great Depression hit, Americans were thankful for this act being in place. This changed very quickly, however. When the United States entered World War II, more workers were needed to labor in the fields and factories because so many men were being shipped overseas. Because the act did not allow a large number of immigrants into the United States, businesses turned to Puerto Rico. Because Puerto Ricans had citizenship rights, the Johnson-Reed Act of 1924 did not affect them. Companies began to make it easier for Puerto Ricans to come to the United States. Some even went so far as to fly Puerto Ricans to New York for free! These pull factors explain why we see a big increase in Puerto Rican migration at this time.

Puerto Rican migration grew extremely quickly. In 1920 there were 5,000 Puerto Ricans in New York City. In 1940 there were 61,463 Puerto Ricans living in New York City. By 1960 there were 612,574 Puerto Ricans living in New York City<sup>8</sup>. In 2008 the number of Puerto Ricans living in New York City reached 1.2 million<sup>9</sup>!

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<sup>3</sup> Gabriel Haslip-Viera and Sherrie L. Baver, *Latinos in New York: Communities in Transition* (Notre Dame, Ind.: University of Notre Dame Press, 1996), 9.

<sup>4</sup> Sherrie L. Baver, "The Rise and Fall of Section 936: The Historical Context and Possible Consequences for Migration," *Centro Journal* 11, no. 2 (Spring 2000): 44–55, 46.

<sup>5</sup> Vilma Ortiz, "Changes in the Characteristics of Puerto Rican Migrants from 1955 to 1980," *International Migration Review* 20, no. 3 (1986): 612–628, doi:10.2307/2545707, 613.

<sup>6</sup> Kosuzu Abe, "Identities and Racism of Puerto Rican Migrants in New York City: An Introductory Essay," *Transforming Anthropology* 14, no. 1 (April 2006): 83–88, 85.

<sup>7</sup> *Statistical Abstract of the United States* (Washington, D.C. Government Printing Office, 1929), 100.

<sup>8</sup> Haslip-Viera and Baver, *Latinos in New York*, 8, 14.



According to the 2010 Census the number of Puerto Ricans living in the United States as a whole is 3.5 million.

As Puerto Ricans flocked to New York City, they developed a dynamic cultural presence, even as they lived in concentrated areas. In April of 1958, the first Puerto Rican Day Parade was held in New York City. Many Puerto Ricans moved into Barrios, or Spanish-speaking neighborhoods with a high poverty level. Many Puerto Ricans were attracted to Spanish Harlem and the Bronx because a Puerto Rican community was already established there. The Nuyorican Poets Café, a non-profit organization that promotes Puerto Rican art forms, was founded around 1973.

Although there was this great cultural presence in New York City that attracted many Puerto Rican migrants, along with job opportunities, New York City was in the decline. Following World War II many New York City factories and manufacturers moved out of the city. Many families began to move to suburbia at this time, leaving primarily lower-class families in the City. This is just one reason Puerto Ricans are caught in the endless cycle of low wage jobs.

#### Education and Economic Challenges for N.Y.'s Puerto Ricans

A large number of advocacy groups have been founded over the years to try and solve the problem of education and employment within the Puerto Rican community. In 1961 Puerto Rican educators and community leaders founded ASPIRA, Inc., to foster the social and educational advancement of Puerto Rican students.<sup>10</sup> *Aspira v. Board of Education*, the 1972 federal lawsuit, had given way to a period of focus on Latinos, in general, and on immigrant students. New York City became especially concerned with increasing ESL instruction and providing aid to English language learner (ELLs). Bilingual education was also emphasized.<sup>11</sup> The Center for Puerto Rican Studies at Hunter College was created to promote and encourage underrepresented groups, such as Puerto Ricans, to get a higher education.<sup>12</sup>

Puerto Rican education has improved since the first migrants came to New York City. With that there is still high drop out rates from high school within the Puerto Rican community. Fourteen percent of Puerto Ricans who migrated in 1955 to 1960 graduated

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<sup>9</sup> Sonia G. Collazo, Camille L. Ryan, and Kurt J. Bauman, "Profile of the Puerto Rican Population in United States and Puerto Rico: 2008," *U.S. Census Bureau: Housing and Household Economic Statistics Division*, April 15, 2010, 1–28, 7.

<sup>10</sup> Luis O. Reyes, "Minding/Mending the Puerto Rican Education Pipeline in New York City," *Centro Journal* 24, no. 2 (Fall 2012): 140–59, 143.

<sup>11</sup> *Ibid*, 147.

<sup>12</sup> *Ibid*, 155-56.

high school. That compares to 37 percent, who migrated in 1975 to 1980, that graduated high school.<sup>13</sup> In 1990 only 53 percent of mainland Puerto Ricans had a high school diploma or equivalent. By 2008, 73 percent had a high school diploma or equivalent<sup>14</sup>. Although Puerto Rican education levels have increased, they still fair poorly when compared to the population in the United States. There is an educational gap between Puerto Ricans and the rest of the population in the United States.<sup>15</sup> Puerto Ricans have the highest dropout rates in the United States and low college enrollment and graduation rates. Young Puerto Rican males share poor educational outcomes with African-American youth, according to one recent study. Only 55 percent of native born Puerto Rican youth attend school in New York City. That rate is closer to native-born Black youth at 61 percent rather than to native-born Dominicans at 68 percent or Mexicans at 67 percent.<sup>16</sup>

There are many reasons why Puerto Ricans are not doing well in education compared to the rest of the population in the United States. One issue is that very few Puerto Rican children go to pre-school. This deficit in early education magnifies when these children reach adolescence.<sup>17</sup> The National Assessment of Educational Progress (NAEP) indicated that 9 percent of Black 4<sup>th</sup> graders and 10 percent of Latino 4<sup>th</sup> graders in New York City scored at or above proficiency on the science exam compared to 41 percent of White 4<sup>th</sup> graders. Five percent of Black, six percent of Latino, and 29 percent of White students scored at or above proficiency on the 8<sup>th</sup> grade science exam.<sup>18</sup> This shows how Puerto Ricans are not fairing well in school.

Another reason Puerto Ricans are doing poorly in school is because New York City public schools are often segregated. About 84 percent of Latino students enrolled in New York State public schools attend a school that has 50 percent or higher minority population. About 57 percent are enrolled in schools that are 90 percent or higher minority population.<sup>19</sup> Another issue is the fact that Puerto Ricans attend larger public

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<sup>13</sup> Ortiz, "Puerto Rican Migrants from 1955 to 1980," 617-18.

<sup>14</sup> Collazo, Ryan, and Bauman, "Profile of the Puerto Rican Population in United States and Puerto Rico: 2008," 6.

<sup>15</sup> Ortiz, "Puerto Rican Migrants from 1955 to 1980," 619.

<sup>16</sup> Reyes, "Minding/Mending the Puerto Rican Education Pipeline in New York City," 144.

<sup>17</sup> Clive R. Belfield, "The Economic Consequences of Inadequate Education for the Puerto Rican Population in the United States," *Centro Journal* 22, no. 2 (Fall 2010): 234–59, 237.

<sup>18</sup> Reyes, "Minding/Mending the Puerto Rican Education Pipeline in New York City," 148.

<sup>19</sup> *Ibid*, 143.

high schools with higher student to teacher ratios. This is associated with low school productivity and contributes to poor academic outcomes.

Puerto Ricans have been thought of as “one of the most undereducated ethnic groups in the United States.”<sup>20</sup> This is thought to be for several reasons including social, cultural, and assimilation factors. There is a link between low income and low attainment. In the 1990 Census Puerto Ricans had the highest poverty rate and the second highest dropout rate amongst young adults. ASPIRA of New York produced a report that showed that up to 68 percent of Latino youth were dropping out of City schools.<sup>21</sup> Puerto Ricans ages 25 and older in the United States have a dropout rate from high school at 28 percent. There has not been much evidence that the education status is improving since the 1990s and the college attendance rate has risen for Hispanics however it has not for Puerto Ricans.<sup>22</sup>

Generally individuals who graduate from high school will earn significantly more than dropouts and those who go to college will earn more than high school graduates. People with more education report a better health status, and are less likely to be involved in the welfare and/or criminal justice systems. These benefits yield fiscal and social benefits and cause economic growth to be boosted.<sup>23</sup> Clearly it is important to make changes to help Puerto Rican students and lower the dropout rates. New York City public schools have a history of failure when it comes to Puerto Rican students completing high school with a diploma. Instead of school being a successful pathway out of poverty, many public high schools are considered “dropout factories” and do the opposite.<sup>24</sup> The least experienced teachers, the most teachers teaching out of certification, and the highest rates of teacher turnover are the teachers teaching at the schools most Puerto Rican students attend. On top of this these schools are overcrowded, under resourced, and low performing.<sup>25</sup>

To fix this problem it is imperative to get the parents involved. Because Puerto Rican parents may not speak English it is important to provide resources for them as well

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<sup>20</sup> Belfield, “The Economic Consequences of Inadequate Education for the Puerto Rican Population in the United States.”

<sup>21</sup> Reyes, “Minding/Mending the Puerto Rican Education Pipeline in New York City,” 143.

<sup>22</sup> Belfield, “The Economic Consequences of Inadequate Education for the Puerto Rican Population in the United States,” 238.

<sup>23</sup> *Ibid*, 236.

<sup>24</sup> Reyes, “Minding/Mending the Puerto Rican Education Pipeline in New York City,” 143.

<sup>25</sup> *Ibid*, 144.

and educate them on the importance of an education in the United States.<sup>26</sup> Parent involvement is not the only solution to this problem. It is also important to increase Puerto Rican enrollment in pre-school. Curriculums and classroom involvement has to be aimed more at culture and identity as well as language. It is important that an agenda and policy be in place that includes a comparative and interdisciplinary perspective. To solve the issue of the high dropout rates we must enhance and support students' basic skills development, create alternate pathways to graduation, and provide supportive transitions from middle to high school. Teachers and staff have to be culturally competent in terms of the community of their students. It is essential to provide equal and consistent access to quality education, education starting at a young age, smaller class sizes, effective teachers, rigorous curricula and interactive, student-centered pedagogies.<sup>27</sup>

There is a clear link between educational attainment and economic success. It is imperative to reduce poverty among Puerto Rican young children, young adults, and the working poor.<sup>28</sup> Low educational attainment generally leads to low income.<sup>29</sup> Puerto Ricans are highly concentrated in low wage jobs. Individuals who are educated experience higher income, wealth and improved health status. Education can help better avoid poverty and debt.<sup>30</sup> A Puerto Rican at age 20 years old who completes high school is estimated to earn \$631,960 over their lifetime. A Puerto Rican of the same age who dropped out of high school is estimated to earn \$396,300 over their lifetime.<sup>31</sup> Simply finishing high school allows you to earn double what you would if you dropped out of high school over your lifetime! This clearly shows a link between low wage jobs and drop out rates.

Puerto Ricans came to the United States for a better life and more opportunity. A survey of Puerto Ricans who migrated to the United States in the 1950s-70s showed that 60 percent cited "obtaining employment."<sup>32</sup> Today many Puerto Rican migrants are employed in low wage jobs.<sup>33</sup> The probability of being a low wage worker is ten times

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<sup>26</sup> Ibid, 151-53.

<sup>27</sup> Ibid, 154-55.

<sup>28</sup> Ibid, 151.

<sup>29</sup> Belfield, "The Economic Consequences of Inadequate Education for the Puerto Rican Population in the United States," 238.

<sup>30</sup> Ibid, 240.

<sup>31</sup> Ibid, 245.

<sup>32</sup> Ortiz, "Puerto Rican Migrants from 1955 to 1980," 620.

<sup>33</sup> M. Anne Visser and Edwin Meléndez, "Puerto Ricans in the U.S. Low-Wage Labor Market: Introduction to the Issues, Trends, and Policies," *Centro Journal* 23, no. 2 (Fall 2011): 4-19, 5.

higher for minority populations. Puerto Rican migrants are mostly concentrated in lower status occupations. These occupations include laborer, operative, and farmer.<sup>34</sup> Puerto Ricans are so heavily concentrated in low wage jobs for several reasons including, the influence of migration to and from the island, the role of policy initiatives such as the publicly-financed workforce investment system, and community responses to labor market policy.<sup>35</sup> Puerto Ricans and other minority groups are disadvantaged in the labor market. These groups are in industries where economic factors and expansion of service jobs have led to a deterioration of working conditions and labor market outcomes for workers.<sup>36</sup>

Puerto Ricans are considered an exception within the Hispanic subgroups. They are less likely to be self-employed and are a part of the earning gap in the United States. Puerto Ricans are also a part of the underclass in the United States. The underclass can be defined as “populations with high levels of poverty, social and political disenfranchisement, marginal participation in the labor market, and a high reliance on government transfers.”<sup>37</sup> This exception is rooted in structural characteristics. These characteristics include lack of access to education and training opportunities, employment in industries concentrated in geographical areas that have experienced extreme economic dislocation, and labor market discrimination.<sup>38</sup> Puerto Ricans experience higher unemployment rates and poverty than other Hispanic groups. Puerto Ricans also have high rates of welfare. This generally leads to more unemployment and the cycle continues.<sup>39</sup>

### One American Journey

For this paper, I interviewed Nancy and Catalino Torres about their migration experiences. Nancy Marrero, later married Catalino and took the name Torres, migrated to the United States in 1955. She was ten years old. Her father had been in the United States for two years prior. He had a job in Connecticut. When Nancy came to the United States she came with her mother, her brother, and her sister. They settled in the Bronx. She started school right away. She recalled school being quite difficult at first because she did not know English and there was not much support provided. She still remembers how different life in New York City was and depicted it as being trapped indoors. She

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<sup>34</sup> Ortiz, “Puerto Rican Migrants from 1955 to 1980,” 619.

<sup>35</sup> Visser and Meléndez, “Puerto Ricans in the U.S. Low-Wage Labor Market,” 6.

<sup>36</sup> Ibid, 5.

<sup>37</sup> Ibid, 7-8.

<sup>38</sup> Ibid, 8.

<sup>39</sup> Ibid, 5, 8.

also hated the cold! Nancy graduated high school on a business track and with an accounting focus. Upon graduating she was hired as a bookkeeper for McGraw-Hill book and publishing company. She moved her way up the ladder and eventually became the inventory manager and manufacturing scheduler. She retired after 33 years with the company. After retirement, she began working as a data processor scheduler for her local school system. She also did the bookkeeping for her husband's business, which he began in 1984.

Catalino Torres came to the United States in 1957. He was 15 years old. He went straight to high school. He attended and graduated Morris High School in the Bronx, which is where his family settled. His father had come to New York six months before he arrived and started working. He did not speak English when he got the New York. He first got a job in an Italian restaurant as a busboy. He remembered learning Italian before he learned English because that was all that was spoken at the restaurant. He said that did make it a bit harder to learn English, however he learned English in a little over a year. Following his job as a busboy, he became a waiter and then a bartender. He then started managing a small restaurant during the day and started a business at night. In 1984 Catalino and his brother started a cleaning and maintenance business. Eventually it became too large and they split the company into two. Catalino's company was named C & N Cleaning. He retired in 2009 and gave the company to his son.

Catalino and Nancy are examples of Puerto Rican success stories. Catalino and Nancy married and had two sons. They moved to New Jersey in 1972. They have a son who is a Lieutenant Colonel in the United States Marine Corps. They both graduated high school and made good livings for themselves and their family. Catalino opened his own business, a rarity in the Puerto Rican community. They were also both able to retire and move onto a farm in Florida. This gave Nancy all the room to play and the warm weather she has wished for since she was a ten-year-old girl!

The Puerto Rican community has made many positive contributions and steps to empower itself in education. One positive contribution is the ethnic studies department and the Center for Puerto Rican Studies at Hunter College. This center for higher learning encourages Puerto Ricans to get a higher education and be able to do it in a place



A photograph of Catalino and Nancy Torres.

that understands your ethnic and cultural background. In order for this to happen it is extremely important to have culturally relevant coursework, faculty, and advisors that relate to the students, and institutions like Centro that give students a sense of belonging.<sup>40</sup> Another example of a positive contribution is Puerto Rican participation in the United States military. The rate of military participation among Puerto Ricans is higher than it is for the population as a whole.<sup>41</sup> Although until recently, too many in the Puerto Rican community have lived in poverty in New York City, it is projected that within a few years more Puerto Ricans will live in Florida than in the state of New York<sup>42</sup>. With Puerto Ricans moving to Florida, there is a great possibility that their positions both educationally and economically will begin to improve!

As you can see Puerto Rican migrants' economic and education statuses have improved since migrants first started arriving to New York City. Puerto Rican migrants' economic and education statuses have not improved however when compared to the general population of the United States. Puerto Rican migrants have a high drop out rate from high school and because of this continue to be employed in low wage jobs. Puerto Ricans have a high level of poverty that shows no end in sight if something is not done to lower the high school drop-out rates. Clearly New York City schools, and schools around the country, need to change. We need teachers, parents, students, Puerto Rican

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<sup>40</sup> Reyes, "Minding/Mending the Puerto Rican Education Pipeline in New York City," 155-56.

<sup>41</sup> Edwin Meléndez and Carlos Vargas-Ramos, *Puerto Ricans at the Dawn of the New Millennium* (New York, NY: Center for Puerto Rican Studies, Hunter College, CUNY, 2014).

<sup>42</sup> *Ibid.*

community members, lawmakers, etc. to step in and make the changes necessary so that the Puerto Rican community can succeed.

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## Jewish Artists in Nazi Germany: Charlotte Salomon

Jessica Catanzaro (History)<sup>1</sup>

“The war raged on and I sat by the sea and saw deep into the heart of humankind. I was my mother my grandmother indeed I was all the characters in my play. I learned to walk all paths and became myself.”

-Charlotte Salomon

Hitler and the Nazis came to power in 1933 and exhausted every effort to persecute the Jews of Europe. Jews all across Europe were kicked out of their homes and businesses and were forced to wear a yellow star that labeled them as Jews. Charlotte Salomon, born in Berlin, grew up during the Nazi persecution of the Jews, and faced much of this persecution herself. Charlotte painted her last work, *Life? Or Theater?*, under this persecution. How was Charlotte Salomon’s life affected by the Nazi regime? How is her final work *Life? Or Theater?* representative of her life in Nazi Berlin? During her life under the Nazis, Charlotte fled from Berlin to France and was taken to several concentration camps before being taken to Auschwitz-Birkenau. However, Charlotte’s work was also plagued by childhood secrets regarding the suicides of her aunt and mother. In short, Charlotte Salomon had gone through girlhood in a house of suicides, had done her schooling in a Fascist state, had spent her fruitful years in exile, and learned the horrible truth of the fate of her people at the gates of Auschwitz.

Charlotte Salomon’s *Life? Or Theatre?* is a narrative series of 769 finished gouaches and nearly 500 additional paintings that tells the fictionalized story of Charlotte Salomon’s family history from 1913 through 1942. Charlotte combines word and image into her pieces; which were incorporated through semitransparent pages that provide description, dialogue, and music for the images, which Charlotte taped to the front of many of her paintings.<sup>2</sup> In the later images, when Charlotte is running out of supplies in her exile, she paints the words directly onto the pictures. Charlotte’s work is ordered in a numbered and sequential form. *Life? Or Theater?* has a list of characters, and is divided into a prologue, a main act, and an epilogue.<sup>3</sup> Unknowingly, by creating this work,

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<sup>1</sup> Written under the direction of Dr. Laura Morowitz for AH291: *Art and Aesthetics in Nazi Germany*.

<sup>2</sup> Ariela Freedman, “Charlotte Salomon’s *Life? Or Theater? A Melodrama?*,” *Criticism* 55, no. 4 (Fall 2013): 617.

<sup>3</sup> Griselda Pollock, “What Does a Woman Want? Art Investigating Death in Charlotte

Charlotte provides Holocaust scholars with a unique look into Jewish life and persecution during the Nazi regime.<sup>4</sup>

Charlotte Salomon was born on April 16, 1917 in Berlin, Germany to Dr. Albert Salomon and Franze Grunwald.<sup>5</sup> Charlotte and her family lived in an apartment at 15 Wielandstrasse in Charlottenburg, “a lovely part of western Berlin where trees shaded the side streets and cafes brightened the boulevards; the great Jewish department stores and the synagogues stood solid and steady a walk away.”<sup>6</sup> During her youth, Charlotte was withdrawn, serious, pale, tall, and nondescript, and according to one of Charlotte’s childhood friends, “a girl you would never look at twice.”<sup>7</sup> In school photos, Charlotte Salomon was always the one staring into space at the edge of the group. Other girls at her school thought of Charlotte as a “nonperson”, as someone who was there but did not matter to the social life of the school. However, Charlotte was “shielding her fragile core – the loss of her mother, the hush around it – and brooding her way forward.”<sup>8</sup>

From the windows of their apartment, Charlotte was able to see friends passing by, and later the Nazis marching past. However, these windows held a different kind of significance for Charlotte Salomon. In the winter of 1925-1926, Franze Grunwald Salomon suddenly could do nothing but stare out the windows of the apartment and one day, she threw herself out the window to the ground.<sup>9</sup> Charlotte Salomon was twenty-two when she first learned of and understood the tragic fate of both her mother and her aunt. Charlotte Grunwald, Franze’s younger sister, committed suicide by drowning when she was eighteen, in 1913. Charlotte Salomon is named after her. The legacy of her mother’s and aunt’s suicides was kept secret until 1939 when Charlotte’s grandfather broke the news.<sup>10</sup> What Charlotte learned affected and perhaps inspired her work *Life? Or Theater?*. When Charlotte started her work in 1941, she painted death-mask faces of her great-grandmother, great-uncle, aunt, mother, and two other relatives, then counted them in a song: “One two three four five six, does this mean we have a hex?”<sup>11</sup> An arrow skips

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Salomon’s *Leben? Oder Theater?*,” *Art History* 30, no. 3 (June 2007): 386.

<sup>4</sup> Freedman, “Charlotte Salomon’s *Life?*,” 617.

<sup>5</sup> Mary Lowenthal Felstiner, *To Paint Her Life: Charlotte Salomon in the Nazi Era* (New York: Harper Collins, 1994), 4.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*, 24.

<sup>8</sup> *Ibid.*, 26.

<sup>9</sup> *Ibid.*, 5.

<sup>10</sup> *Ibid.*, 11.

<sup>11</sup> Carolyn F. Austin, “The Endurance of Ash: Melancholia and the Persistence of the Material in Charlotte Salomon’s *Leben? Oder Theater?*,” *Biography: An Interdisciplinary Quarterly* 31, no. 1 (Winter 2008): 109; Felstiner, *To Paint Her Life: Charlotte Salomon*

from each face before landing on Charlotte herself; this could only show one thing, Charlotte believed that chances were, whatever took them would take her too.

Charlotte's childhood was also marred by the rise of the Nazis, and this also greatly influenced *Life? Or Theater?*. Charlotte had a great desire to know what happened to her life in Germany, so while she was in exile, she explored the appeal of Nazism to those who idolized it. Two pieces in her story look down at the Nazi parade on the day that Hitler is named Chancellor of Germany, January 30, 1933. Mary Lowenthal Felstiner, Charlotte's biographer, describes these pieces: "First the Nazis uniform the crowds so that men can lose themselves in a numberless mass: all the ranks turn brownshirt color as far as the eye can see. Then Nazism saturates them with symbols until the tedium retards all thought: one crowd looks stupefied by a swastika banner, another by a poster with the features of the so-called Jewish face."<sup>12</sup>

During this period, the Nazis discriminated against Jews in every area of life. The first act of persecution was the Nuremberg Laws of 1935. These laws declared who was Jewish based on family and heritage. The Nuremberg Laws made Judaism into a race rather than a religion which strengthened Hitler's ideology. These laws also segregated the Jews from public life in Germany, for example, there were specific benches labeled *Jude* for Jews and other benches for Aryan Germans.<sup>13</sup> Early in the regime, the Nazis declared the boycott of all Jewish stores and goods on April 1, 1933. It was Hitler's goal to crush the Jews economically so that they would have no choice but to leave Germany. Charlotte Salomon captures the essence of the April 1<sup>st</sup> boycott in one of her paintings: "1 April 1933. Boycott the Jews. Buy from a Jew and you're a pig too."<sup>14</sup> The April 1<sup>st</sup> boycott was ultimately a failure for the Nazis because the ordinary German people just bought their goods from the Jewish stores the day before.<sup>15</sup> Gradually, the Nazi laws became more restrictive and turned into pogroms against the Jewish people of Germany. One such pogrom occurred during *Kristallnacht*, or the Night of Broken Glass, on the night of November 9-10, 1938.<sup>16</sup> During the *Kristallnacht* pogrom, 267 synagogues and 7,500 businesses were destroyed, some 91 Jews were killed, and hundreds more committed suicide or died as a result of mistreatment in the camps.<sup>17</sup>

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*in the Nazi Era*, 12.

<sup>12</sup> Felstiner, *To Paint Her Life: Charlotte Salomon in the Nazi Era*, 29.

<sup>13</sup> Saul Friedlander, *Nazi Germany and the Jews: 1933-1945* (New York: Harper Perennial, 2009), 44-53.

<sup>14</sup> Felstiner, *To Paint Her Life: Charlotte Salomon in the Nazi Era*, 29.

<sup>15</sup> Friedlander, *Nazi Germany and the Jews: 1933-1945*, 10.

<sup>16</sup> *Ibid.*, 112.

<sup>17</sup> *Ibid.*, 115.

After the events of *Kristallnacht*, thousands of Jews were arrested and sent to the Sachsenhausen camp.<sup>18</sup> Charlotte's father was one of them. The pages Charlotte paints of her father's time in the camp are hit with a flat swab of color and Charlotte casts rough hasty lines over it, representing Charlotte's unwillingness to dwell on her father's pain. Another image of Sachsenhausen depicts Charlotte's father bent half the height of the Kommandant. His stoop in these scenes told the truth of reality in the Sachsenhausen camp; the Kommandant of the camp had announced that "this concentration camp is not a rest home. It is a center for National Socialist education. The Jews need simply to learn how to behave toward their hosts [otherwise] they will receive twenty-four blows hanging by their arms upside down."<sup>19</sup> The next painting depicts her father upon his return home, starved and ill.

After the annexation of Austria in 1938, Charlotte Salomon and 78,000 other Jews left Germany.<sup>20</sup> Charlotte paints this moment as well, and she asks the viewer to "hear all the over again the music from the early scenes, to recall the circles and ruptures of love, to hold in mind the home where Charlotte's whole life has been lived."<sup>21</sup> In this image, Charlotte is standing with her family surrounding her; there is an absence of a background, the main focus is Charlotte and her family telling her that she needs to get on the train. This is Charlotte's last glimpse of Berlin and the family that inhabits it. It is at this point that Charlotte goes into exile where she will paint these depictions of her life.

Back in 1933, when Hitler and the Nazis first came to power, Charlotte's maternal grandparents were able to flee Germany and run to the aid of their American friend Otilie Moore in Villefranche, France.<sup>22</sup> When Charlotte fled in January of 1939, she was welcomed into their open arms. A month after Charlotte left Berlin, Albert Salomon and his new wife Paula fled too with plans to meet Charlotte in France once they had papers for all three of them. Albert and Paula settled in Amsterdam with Jewish friends and Charlotte "lived without their guidance, or their doubts, for the first time."<sup>23</sup> When Charlotte wrote to friends she described herself as being "renewed and clear, out of so much suffering and sorrow."<sup>24</sup> Facing years of oppression with no end in sight, Charlotte's grandmother finds her tough exterior cracking. In September 1939, the very month the Nazis invade Poland, Charlotte finds her grandmother with a noose around her

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<sup>18</sup> Felstiner, *To Paint Her Life: Charlotte Salomon in the Nazi Era*, 79.

<sup>19</sup> *Ibid.*, 80.

<sup>20</sup> *Ibid.*, 92.

<sup>21</sup> *Ibid.*, 94.

<sup>22</sup> *Ibid.*, 100.

<sup>23</sup> *Ibid.*, 99.

<sup>24</sup> *Ibid.*, 101.

neck in the bathroom of Otilie's house. What her grandmother feared would happen to Charlotte, happened to her. Fortunately, Charlotte's grandmother was not dead and she was nursed back to health.<sup>25</sup> In an effort to cheer her grandmother up, Charlotte began painting her grandmother's life. This was Charlotte's first step in documenting her own life in Berlin, her first move towards *Life? Or Theater?*.

After Charlotte's grandmother recovers, Charlotte admits to manipulating her grandparents to leave the house of Otilie and to resettle in Nice. It is here that Charlotte's grandfather tells Charlotte of the suicides of her aunt and mother. Later, Charlotte paints this scene as described earlier, the death-masks of all those who committed suicide. Another scene shows her grandfather telling Charlotte that "in this family of yours, every single person commits suicide."<sup>26</sup> As these words snake around her grandfather, the faces in the image turn to grey slabs, show up tragic, then malevolent, then drain blank. In the scene, Charlotte "sheds all identity of her own, down to two colors and an outline, as deprived of features as she had been of facts. In this unguarded state, like a blank surface waiting to be etched, she has to absorb the family legacy."<sup>27</sup> Here Charlotte writes, "I knew nothing of all that."<sup>28</sup> It is for this reason that Charlotte's work is one of "estrangement and uncovering; the detached narrative voice describes the events in a tone of ironic disbelief and quiet astonishment."<sup>29</sup> It is now that Charlotte feels that she has to explore her life, a life that was surrounded by secrecy. In Charlotte's own words, she begins *Life? Or Theater?* "so as not to lose my mind."<sup>30</sup> Charlotte now paints all of the scenes that were mentioned above, as well as many others that detail her life from the moment her mother committed suicide.

During May and June 1940, the French were failing to hold off the Germans. With the disintegration of France came the order of the "internment of people dangerous for the national defense."<sup>31</sup> What this meant was that all Jewish refugees living in France were to be sent to concentration camps. Charlotte is one of those refugees. The train takes Charlotte and her grandfather to the Gurs center in the French Pyrenees.<sup>32</sup> Charlotte stayed at the Gurs camp for several months before being released on July 12 in order to

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<sup>25</sup> Ibid., 104.

<sup>26</sup> Ibid., 107.

<sup>27</sup> Ibid., 109.

<sup>28</sup> Ibid., It is at this point that Charlotte's grandmother throws herself from the window, like her daughter before her.

<sup>29</sup> Freedman, "Charlotte Salomon's *Life?*," 628.

<sup>30</sup> Felstiner, *To Paint Her Life: Charlotte Salomon in the Nazi Era*, 112.

<sup>31</sup> Friedlander, *Nazi Germany and the Jews: 1933-1945*, 192.

<sup>32</sup> Felstiner, *To Paint Her Life: Charlotte Salomon in the Nazi Era*, 119.

accompany her grandfather home. Charlotte was given a permit and a place to live in Nice. Leaving Gurs in July saved Charlotte's life, if only for a few years, because at least four thousand Jews were murdered in Gurs when the Nazi-approved Vichy government of France made Gurs a conduit to German murder camps.<sup>33</sup>

In order to accomplish what the quote above suggests, "...I learned to walk all paths and became myself," Charlotte moved away from her grandfather to St. Jean Cap Ferrat.<sup>34</sup> It was here where she worked on the rest of the pieces for *Life? Or Theater?*. As Mary Lowenthal Felstiner explains, Charlotte started her scenes from melodies, labeled a memoir as an operetta, arranged the work into acts, labeled the people in her life as performers, and narrated the scenes through an unnamed author.<sup>35</sup> Charlotte gave this unique form of storytelling a name: *Dreifarben Singespiel*, which translates to mean tri-color opera. This name describes Charlotte's work well because in fact, she used only three colors: red, blue, and yellow, or a blend of these.<sup>36</sup> Wherever Charlotte's explanatory texts, those which gave dialogue and description, seemed too private, she revised them by penciling additions on the overlays to "identify a character, to indicate a new act, or sharpen a crucial scene."<sup>37</sup> After the scenes of *Kristallnacht*, the text becomes foreboding. "Words well up within the paintings, and language becomes the expressive graphic element. Finally words infiltrate all the spaces until the last pictures are pure letters devoid of images."<sup>38</sup>

As conditions for refugees became worse in France, Charlotte decided to travel back to Nice to protect her grandfather. When she returned to Nice, Charlotte met another refugee who knew Otilie Moore, Alexander Nagler. On June 17, 1943, Charlotte and Alexander married in the Town Hall of Nice.<sup>39</sup> Happiness did not last long for the couple, by September of that year, roundups of Jewish refugees had begun. Charlotte and Alexander were caught on September 24, 1943 and taken to the camp of Drancy.<sup>40</sup> Drancy was a transfer point for all Jewish refugees captured in France. After spending a few days in the camp, Alexander and Charlotte were sent on a train to Auschwitz. Upon arriving at Auschwitz, Alexander Nagler was waved to the left-hand column, tattooed with number 157166, sent to Block 55 of the work camp of Auschwitz III, and settled

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<sup>33</sup> Ibid., 123.

<sup>34</sup> Ibid., 141.

<sup>35</sup> Ibid., 144.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid., 147.

<sup>39</sup> Ibid., 167.

<sup>40</sup> Ibid., 193.

into a mass of slaves. Once, Alexander's name appeared on the infirmary's list. On January 1, 1944, it appeared again, in the Register of the Dead.<sup>41</sup> Charlotte Salomon Nagler approached the selection ramp. There were several factors in her favor: not ill, not with small child, German-speaking, German-looking, able-bodied, young, and skilled in calligraphy. One factor against Charlotte: she was at least five months pregnant. Charlotte's name was entered nowhere in the records of the camp. She was sent to the gas chambers on arrival.<sup>42</sup>

Charlotte Salomon's *Life? Or Theater?* was recovered after the war by Otilie Moore, to whom Charlotte dedicated the work. This strange and mysterious volume of musically inspired paintings annotated with texts on transparent overlays has only recently begun to be considered as a modernist or avant-garde work of art. Charlotte's work has attracted a growing scholarly attention in relation to studies of art and trauma, German-Jewish art in Nazi Germany, and in relation to feminist studies in autobiography.<sup>43</sup> Charlotte Salomon's work is currently at the Jewish Historical Museum of Amsterdam, although they are not usually on display.

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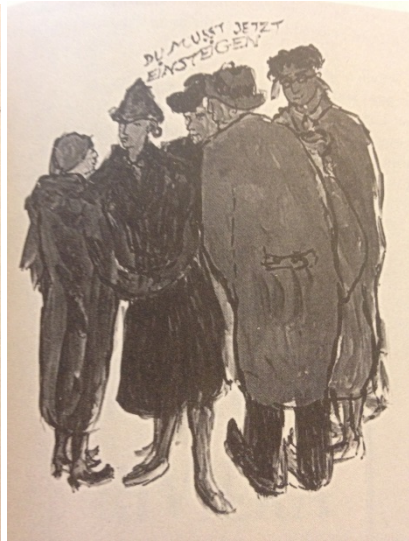
Nazi March



Does this mean we have a hex?



At Sachsenhausen



You have to get on the train now

## **‘Wind of Her Misfortune’: The Role of Nature in *Innocent Erendira***

Nicole Bianco (Business Administration)<sup>1</sup>

Nature is often underappreciated in the hustle and bustle of society. Readers may just skim over the environmental details in *Innocent Erendira*, by Gabriel Garcia Marquez, but each element: wind, desert, rain/water/sea, and sun, all make a significant contribution to Marquez’s plot development. Marquez’s specific references to nature throughout his novella have hidden meanings that enhance the story, constructing a mystic, fairytale-like style to a rather political and seriously intended work.

In “Recommended: Gabriel Garcia Marquez,” Rafael C. Castillo describes *Innocent Erendira* as a story that is “metaphorical with symbols to suggest political allegory” (77). The weather-related aspects of the story each have deeper implications, and some symbolize critical moments. For example, in the beginning, Marquez introduces Erendira with her grandmother right as “the wind of her misfortune began to blow” (1). The wind symbolizes the spell that Erendira is under, and as the story progresses, Erendira continues to struggle with the force of the wind. Marquez uses the wind as a metaphor for Erendira’s difficulty with her grandmother, probably because the wind in itself is a difficulty. Wind, when strong enough, knocks down trees, power-lines, houses, even people. It makes sense for Marquez to choose this element of nature, figuratively representing Erendira trying to move against the wind, trying to push through the force that the grandmother controls her with. Just as the wind causes great destruction in the real world, Erendira’s wind of misfortune demolishes her life.

Another nature symbol is the use of the desert in *Innocent Erendira*. The desert is first brought up when the mansion Erendira lives in, is talked about. Marquez tells the reader that the mansion is “lost in the solitude of the desert” (1). Erendira is already secluded by the grandmother’s spell, but the desert symbolizes another type of isolation from the people around her. Just as deserts are separated from most life forms, the sexual exploitation she goes through also causes her to live a life apart from everyone as well (except Ulises). The climate is then described as “accursed” (3), and again the house is noted as “far away from everything, in the heart of the desert next to a settlement with miserable and burning streets where the goats committed suicide from desolation when the wind of misfortune blew” (3). The wind thus adds a sinister dreariness to the desert,

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<sup>1</sup> Written under the direction of Dr. Ann Hurley for EN111: *World Literature*.

and contributes to the supernatural feel of Marquez's story. Marquez's mention of the desert also sets up the rest of the plot, because the desert later becomes a barrier and a key setting in the story.

As the tale of Erendira carries on, the desert and wind come back as she does her chores: "Around eleven o'clock, when she was watering the desert weeds, she had to fight off the anger of the wind, which had become unbearable, but she didn't have the slightest feeling that it was the wind of her misfortune" (4). The act of watering the desert weeds, trying to restore life to something already dead, is similar to Erendira's situation. Because she is under her grandmother's spell, in a way she is the desert weed. She can't live her life, so she is basically lifeless, as long as she remains in the trance controlled by her grandmother. These symbols of the desert and the wind add to the magic realism technique that Marquez used to reinforce the story. They enchant the story, but at the same time, they still reveal the horror of reality, when the grandmother manipulates Erendira.

A turning point in the plot happens when Erendira's candle starts a fire in the house. Marquez notes, "the wind of her misfortune came into the bedroom like a pack of hounds and knocked the candle over against the curtain. At dawn, when the wind finally stopped, a few thick and scattered drops of rain began to fall, putting out the last embers" (7). From this point forward, Erendira experiences the worst part of her "misfortune" and spell, as she becomes a part of child trafficking. The wind that caused the fire is a damaging force and could be considered evil. However, the rain contrasts with this. The rain contrasts with this, because it is calming in this situation. It put the fire out and is the form of nature that tries to aid Erendira. Erendira awakes "relaxed by the sound of the sea" (47) at the end, confirming that the rain and sea are elements of relief. The rain could also suggest a quality in Ulises, because he too is soothing for Erendira and ultimately helps her escape her spell.

As Erendira's grandmother is auctioning her to a widower, all of a sudden, a storm appears. The author states, "The storm threatened to knock the house down, and there were so many leaks in the roof that it was raining almost as much inside as out" (8). First the wind/fire symbolized the downfall of Erendira, and now the storm is another element that suggests further destruction too. The storm continues as Erendira is forced into bed with the widower—her innocence being lost, and her body being destroyed. The events in the story clearly correlate with the weather conditions.

The next nature element that Marquez uses to enhance *Innocent Erendira* is the sun. He writes, "The grandmother protected herself from the sun with a tattered umbrella and it was hard for her to breathe" (10). The sun conventionally represents light and

goodness, which is the complete opposite of the grandmother. She is the villain in this story and thus cannot face the sun. The grandmother is seen shielding herself from the sun in another instance as she travels through the towns: “She [the grandmother] was protected from the motionless sun by the half-spoked umbrella that Erendira held over her head” (15). The grandmother cannot absorb any of the light radiating off of the sun, not just because of her advanced age, but because the sun is like poison to her. She is full of darkness, and even though Marquez doesn’t explicitly state this, it can be inferred.

Once Erendira’s innocence is broken, the grandmother suggests that she “take a bath in sage water to get [her] blood back into shape” (18). Water, like the element of rain, is needed in order for all things to grow. Here it is seen as though it too has healing powers and can purify Erendira’s body. This is yet another, not so obvious example of the mystical side of Marquez’s story. A few pages after, when Ulises meets Erendira, and she claims she is going to die, he says, “My mother says that people who die in the desert don’t go to heaven but to the sea” (20). As already established, the desert suggests isolation, and the sea is associated with Ulises; he is giving Erendira hope that even though she may be isolated because of her grandmother, she won’t be that way when she dies, she will go to the sea—Ulises. Ulises then goes on to explain that the sea “[is] like the desert but with water” (21). Water, an element that heals, could heal a desert, making more life forms possible to live there, and symbolically, Ulises could heal Erendira’s loneliness. Ulises’s mother mentions “purifying baths” (33) likewise, after she learns that he has become “lovesick” (33) over Erendira, also suggesting that water heals.

The wind of Erendira’s misfortune changes to “a wind as fierce as the wind of misfortune” (23) when a bunch of missionaries stand in the middle of the desert, holding up crucifixes. This change is significant because the missionaries go on to shame the grandmother for Erendira being underage, which infuriates the grandmother, causing the wind to become fierce as well. Thus we see the grandmother’s emotions continue to correspond to the wind. The spell grows stronger, fiercer, as she turns bitter. The wind also becomes “wild” (26) as the grandmother gets annoyed with the photographer. According to the article, “The Conquest Revisited: The History of Innocent Erendira From A Postcolonial Perspective,” Cesar G. Lopez discusses this meaning of the wind. He talks about how Marquez makes a distinction between “the wind of her misfortune” and “the wind as fierce as the wind of misfortune”. He notes, “The first refers symbolically to the wind that drove Columbus’ ships to the coast of America, and which start the fire which brings slavery and exploitation to Erendira/America; for that reason it is the wind of her misfortune” (87). He then explains, “The wind blows every time Erendira tries and fails to obtain her liberty” (87). The wind as fierce as the wind of

misfortune (the wind of the missionaries) is different because although it brings conflict, it tries to help them at the same time (87). This is true, because Erendira won't truly be free until the spell is broken—when the grandmother dies. The wind often appears throughout the novella, and Marquez makes it a focal point, while bringing reality to the fantasy side of the plot.

The desert then becomes a temporary barrier between Ulises and Erendira. Marquez states, “He [Ulises] traveled across the desert for the rest of the night and at dawn he asked in towns of villages about the whereabouts of Erendira” (34). Ulises has to find his way through the barren fields, to get to Erendira, only to discover that she is headed toward the sea.

Towards the end of the plot, the wind starts to pick up speed, and its effects are seen through Erendira. For example, “during the pauses in the wind she [Erendira] was tormented by uncertainty” (40). Marquez notes, “She heard the wind barking about, but she didn't recognize it as the wind of her misfortune that time either” (40). The longer Erendira is in her grandmother's spell, the more damaged she gets. However, the spell can be broken, and “her instinct for freedom in the end prevailed over her grandmother's spell” (40). Erendira longs to escape the horrors of exploitation, another political idea infused into the magic realism.

The story wraps up with Erendira “running into the wind” (59), symbolizing the spell shattering. Erendira runs “until the natural science of the sea ended and the desert began, beyond the arid winds and the never-ending sunsets” (59). The action of Erendira running until the sea ends, suggests that she is also running away from Ulises who serves as the sea/rain/water symbols. She flees away from the winds, no longer drawn in by the spell, no longer controlled by her grandmother who finally died. Erendira runs towards the sunsets, gaining light, but not necessarily leaving the darkness—greed—that filled her grandmother, because she takes the gold vest with her. Although Ulises is a positive symbol, he is nonetheless still part of the fairytale. Thus Erendira is escaping the Cinderella narratives as well as the spell.

In *Innocent Erendira*, four main elements of nature: wind, desert, rain/water/sea, and sun, all have symbolically created a greater understanding of the story. These symbols contribute to the magic realism, a style well-known by Marquez. Marquez is able to turn a story about political corruption into one with charm and illusion. Erendira may have broken the spell from her grandmother, but as she runs with the gold vest, she might just run into another spell of desire.

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# **An Analysis of the Influence of Christianity and French Naturalism on Vincent Van Gogh's Relationships with and Depictions of Women**

Sandra G. Minchala (Chemistry)<sup>1</sup>

Vincent Van Gogh, the legend, is known for being one of the pioneer bohemian artists of his time. Due to this classification of “bohemian,” little is mentioned of his avid and extensive literary knowledge. With his citing hundreds of authors who wrote in several languages including French and English – apart from his native Dutch – it is a marvel that more is not mentioned about his intellect. Vincent, as he wished to be referred, also included the Christian bible in his extensive library due to his deep connections to the Dutch Protestant Church. Not only was he the son of one of its ministers, but he was a student of the church from his youth into his early adulthood. This Christian doctrine gave Vincent a longing to care for those in need and a yearning to join the marginalized in their strife. In complement to his established desire to help the oppressed, Van Gogh's library included multiple authors whose writing was heavily based on heart-felt moral sentiments. These authors included Charles Dickens and Harriet Beecher Stowe, who each wrote about the need to be moral towards the poor and towards African Americans; their works included *A Christmas Carol* and *Uncle Tom's Cabin*, respectively. Van Gogh saw a lot of his early Christian influence embedded within these works, which allowed him to relate with them deeply (Hoek 1993).

Although Vincent found these moralistic authors' works enlightening, they were not the culmination of his literary influences. In the 1880s, Van Gogh became largely attracted to modern French literature, and in particular the Realist and Naturalist movements. Realism was an artistic and literary movement in the 19<sup>th</sup> century, which aimed to make the common people the subject of its works. Jules Michelet was among the main authors who belonged to this movement and whom, interestingly enough, Van Gogh cited repeatedly in his letters. Naturalism, a movement that emerged from Realism, proposed to do more than what Realism conveyed in art and writing; Realists did not only make peasants the subject of their work, but they also thoroughly *explained* their condition through a scientific and historical approach. Van Gogh's strongly rooted social conscience was heavily strengthened by this movement, as he heavily quotes many of

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these authors including Guy de Maupassant, the Goncourt brothers, Alphonse Daudet, and most importantly, Emile Zola (Hoek 1993 & Cable 2005). It is upon this framework that an important question arises: how do all of these literary influences shape the way that Van Gogh views, and as an artist, portrays, arguably one of the most oppressed subjects at the end of 19<sup>th</sup> century – the woman? This paper will aim to answer this question through a close study of how Van Gogh's views, relationships with, and depictions of women were heavily influenced not only by his social conscience, but more importantly by his literary influences, particularly those of the French Naturalists.

Van Gogh, as the son of a protestant minister was fond of the Christian Gospel teachings for a majority of his youth, but this perspective changed as he entered adulthood and found that literature could provide more concrete and real teachings for his time (Sund 1992). It seems, though, that Van Gogh by no means abandoned his deep spirituality and his profound humanitarian intentions, but he “instead sought an alternative vessel for his Christian convictions in a self-styled religious humanism that drew on the ideas of several nineteenth-century novelists, philosophers, and social crusaders” (Sund, 1992, 37). Regardless, as Van Gogh grew older, he analyzed that teachings that the Protestant Church that he once took as truth, were highly hypocritical; he believed that the authors that he read instead provided him with what he saw as “modern equivalents of the Gospels” (Sund 1992, 37).

The moralistic and Realist authors from whom Van Gogh received his new gospels were Michelet, Beecher Stow, and Dickens, but the good news they proclaimed about women were questionable. Michelet in his two novels, *L'Amour* and *La Femme*, portrays women as domestic, docile creatures who are “suitably passive, naïve, and cloistered” and who also show “passivity, modesty, [and] disconnectedness from the world” (Sund 1992, 19). It is also evident that Michelet's sentimental and often patronizing view of a woman as an “endearingly alien creature whose fragility demands compassionate protection had a permanent impact on Van Gogh's vision of the opposite sex,” so much so that and he even “memorized certain Micheletian maxims on women that cropped up in his letters to the end of his life” (Sund, 1992, 43). Beecher Stowe, a female author that Van Gogh frequently cited was another influence that perpetuated both “offensive [and] stereotypic views on both blacks and women” (23), as she “calls upon women to recognize the sanctity of their mission as wives and mothers and work to attain feminine dignity and self-fulfillment within their rightful contexts: home and family” (43). The novels that Van Gogh most heavily refers to are her *Uncle Tom's Cabin*, *My Wife and I*, and *We and Our Neighbors*. Over all, the moral of their stories, and the idea



that these authors instilled on Van Gogh, was that in order to be happy and to fulfill her duties, a woman *needed* to be with a man.

The moralistic views instilled on him by the Realist literature of Michelet, along with Beecher Stowe, and Dickens created in Van Gogh the complex that he is often known for – the savior complex. It is with this knowledge that his early relationships with women can be understood, particularly his attempt at courtship in 1881 with his cousin Cornelia Adriana Vos-Stricker, known as Kee. His cousin was a recent widow with a child and he, as her savior, wanted to provide her with what she needed. According to Vincent, and likely fueled by his belief that a woman could not be satisfied without the presence of man by her side, she had no reason to reject him, and her answer of “no, never, never” simply baffled him. In a letter to his close friend and brother, Theo, he explains: ‘to express my feelings for Kee, I said resolutely, “She, and no other.” And her “no, never, never,” was not strong enough to make me give her up. ...Notwithstanding this refusal, which I thought was like a piece of ice that would melt... I could find no rest’ (Meissner 1999, 272). Van Gogh clearly believed that his desire to be with her would not go unreciprocated – he firmly held that a woman could not live without a man, an idea that the Realists had strengthened within him.

By 1882, Van Gogh, thoroughly immersed within Realist literature and the secular gospel, moves to The Hague, and it is here where his literary climax is reached. Van Gogh meets both modern French Naturalist literature and Clasina Maria Hoornik – one of the most important women in his life as an artist. To fully understand his relationship with Maria, whom he calls Sien, it is important to first understand the basis of the Naturalist literary movement in France. Naturalist literature, like Realist literature, conveyed ideas about the dignity of the laborer and peasant, but it also claimed that a person is the product of their circumstances. At the turn of the century, new scientific horizons were being reached, in particular that of Charles Darwin’s Theory of Evolution (Carol 2004 & Baguley 1990). This scientific feat, explaining the condition of humanity as a continuous evolution due to natural occurrences, gave the Naturalists the tools needed to explain the condition of the poor as being a consequence of their natural circumstances. At the time, though, these views are overshadowed by the predominant beliefs that poverty was not a symptom, but that it was instead, the disease. Having a deeply rooted Christian social conscience, Van Gogh was largely moved by the former naturalist movement that aimed to explain the human condition of poverty. In this light, it is necessary to analyze how this Naturalism seeped into Van Gogh’s conscience and influenced the relationship that he shared with Sien, and ultimately how this translated into his artwork.

Sien was a prostitute and seamstress whom Van Gogh meets in 1881 when he is living at The Hague in the Netherlands (Zemel 1987). Van Gogh, feeling bad for her, as in the middle of the winter, she has a small child and is pregnant with another, sees it as his moral obligation to take her in and care for her (Sund, 1992). While receiving services from prostitutes was acceptable at the time, living with one was certainly not. It is among these circumstances that his relationship with Sien needs to be analyzed: Why does Van Gogh take her in? And, once he does take her in, how are his relationship and depiction of her affected by the Literature that he is exposed to at The Hague? Carol Zemel (1987), an art scholar and professor, offers a plausible answer for these questions. She argues that Van Gogh defends Sien's prostitution. In one of his letters to Theo, he compassionately wrote that "no matter how good and noble a woman may be by nature, if she has no means and is not protected by her own family, in the present society she is in great immediate danger of being drowned in the pool of prostitution" (Carol Zemel 1987, 354). This view that Van Gogh has of Sien stands as complement to not only the views of women that Michelet – a Realist author Van Gogh read extensively – had, but also with current Naturalist ideas about the circumstantial nature of humans. To explain it explicitly, this was the belief that women, like all other people, were subject to their social conditions, and were therefore unequivocally molded by them; therefore, only logically, prostitution was not a sin, but rather the unavoidable conclusion to unfortunate circumstances. Van Gogh now, with all of this influence feeding his intentions, sees the need to "rescue the fallen woman, [the] type one might find in the pages of a [Naturalist] Zola novel" (Cable, 2005, 57).

This Realist belief that he had to rescue Sien from being alone, as well as the Naturalist view that she was trapped in this inevitable outcome of poverty and calamity sparks in Van Gogh the need to depict her accordingly. After Van Gogh takes her in – something she needs as she is a woman without a man – she becomes the muse of his artwork. In a sketch entitled "Sorrow," Van Gogh shows a naked Sien, but relieves her of any sexuality by instead focusing on her pregnant belly, and her maternal breasts, atop her mourning expression as a consequence of her poverty. According to Michelet, and to Realist thought, it is only through her maternity and her following conventional roles within the home that she is uplifted from her circumstance of prostitution (Zemel, 1897). Due to this influence, Van Gogh becomes fixated on her performing tasks of the home in order to rescue her from her condition and succumb to what the Realists believed were a true woman's duties. In this context of Realism, Van Gogh made Sien complete by providing her with a man, focusing on her maternity, and by depicting her as a home-keeper in his works. In the context of Naturalism, this was his way of cleansing her of the

circumstances that forced her into the world of prostitution. In either context, he was saving her.

In addition to his depictions of Sien, Van Gogh also draws “The Great Lady” while in The Hague (Sund, 1992, pg. 68). This drawing of “The Great Lady” is not only evidence that his reading influences what he creates, but it also suggests that he wants to make evident the contrast between this woman and Sien. In addition, his “The Great Lady” makes clear that Van Gogh’s social conscience remains alive through all of his works. Describing his inspiration for the piece, he states in one of his letters “There is a poem by Thomas Hood... telling of a rich lady who cannot sleep at night because when she went out to buy a dress during the day, she saw the poor seamstress... sitting at work in a closed room. And now conscience-stricken about her wealth, and starts up anxiously in the night...” (LT185). Van Gogh makes it clear that while Sien is a guilt-ridden woman that is rescued from her wanton ways through her encounter with him, the “great lady,” guilty of her prodigal ways is rescued from these through her encounter with that poor woman. While Sien is revived to be a “good” woman through his rescue, the wealthy woman is made anew by the revival of her social conscience – both things which lay at the heart of Realist thought (Zemel, 1987).

As his time at The Hague continues, Van Gogh becomes familiarized with Zola’s novels and he is suddenly no longer content with Sien in his life. The connection between these two events is clear: Zola’s novels insisted that a woman fulfill her proper role once she is rescued by a man. Sien, on the other hand, started to refuse acting as a domestic house-wife, and she instead continued to earn her wages as a prostitute while living with Van Gogh. Seeing that Sien no longer was following the mold set out for him by Zola, Van Gogh begins to complain formally about Sien in letters to his brother Theo, in one of which he states that she is like ‘an ugly, even venomous insect’ and even complains that she is ‘entirely spoiled’ (Zemel, 1987, 363). This view that Van Gogh has is completely radical from the initial compassion and desire to save Sien that he has when he first meets her. But, as Carol Zemel (1987) beautifully puts it, “the tale of the fallen woman and domestic rescue was imagined, written, and pictured by men. Bolstering Van Gogh’s experience and his images, after all, are the voices of Michelet, Hugo, Zola... just to name a few. The voice we do not hear – or only very selectively, muffled through the letters – is Sien’s” along with all of the other women that he depicts (365). It is clear that what Van Gogh sees in her changes to match what he reads. It is also comes as a corollary that he desires to fit her into Realist then Naturalist literary molds, with little regard to what she, as a real person, wants to do.

After his stay at The Hague and his failed relationship with Sien, Van Gogh moves to Nuen in 1885, where he, no longer having Sien as a model, depicts women workers in their working spaces (Sund 1992). These depictions – *Peasant Stooping Seen from the Back and Side* (1885), *Kneeling Peasant Woman Seen From Behind* (1885), and *Peasant Woman Seen from Behind* (1885) – according to Van Gogh scholar, Sund (1992), have a more raw approach to them as they, as their names state, always show women from their back-side. She states that these depictions therefore emphasize the sexuality of the women as opposed to the fragility of women needing to be saved, as was the case with Kee and Sien. Sund (1992) argues that “it is likely that Zola’s graphic descriptions of working women in *Germinal*, ... informed Van Gogh’s artists decisions as he depicted female laborers in the months that followed his enthusiastic reading of that novel” (106). These “decisions” that Van Gogh made seem to be heavily focused on the sexuality of women, but Griselda Pollock (1994), another art scholar, argues that these depictions instead show proof of an internal battle between maternal aspects of women and animalistic sexualized aspects of women. She states that Van Gogh’s own torn ideas about his society’s views and those of the authors that influenced him (particularly Zola) made these depictions a mixture of both.

Pollock (1994) strongly argues that Van Gogh’s depictions are not so clear-cut and polarized. She states that unlike the distinction that his society made about women either fulfilling the role of mother or prostitute, his depiction of them “reveals another, equally compelling, fantasy that oscillates between the mother and the peasant nurse” ideas that were “produced in the social and psychic conditions of those historically-specific relations between bourgeois men and working-class women” (810). Van Gogh and Zola, both men coming from the bourgeois class, were those very men that perpetuated this conflict in the perception of women. They saw the peasant woman as both a motherly figure of nurture and care – a wet-nurse and a comforter – but at the same time, an object of animalistic and available sexuality. Sund therefore argues that in contrast to Van Gogh’s view of Sien as woman that was forced to be a prostitute, but whom he could save, “Zola’s suggestion of the sexual availability of such [lower class] women clearly did not offend... [him], and the author’s assertion of their animality probably encouraged the painter to unleash the ‘beast’ he saw within himself...” (101). For Van Gogh, his role of saving women from their situation was no longer needed after both of his failed attempts with Kee and Sien; instead, he now had the ability to explore his own raw sexuality once he left The Hague. Pollock (1994) then explains that this is why the women are depicted from the point of view of an observer looking down upon them as opposed to the more neutral point of view of Van Gogh’s earlier works of Sien.

This new point of view is the very claim that due to their lower standing in class, the bourgeoisie man can exploit them as sexual objects. After his lengthy stay in the Netherlands and his failed relationships with women, Van Gogh moves to France where he now frequently visits the brothel, exacerbating the sexualization of women, and definitely no longer showing the same convictions as he did about women when he was reading the moralist authors like Dickens and Stowe. Van Gogh's exposure to several of Zola's novels is clear and as his artistry is developing and he decides to move to Arles where he hopes to build his utopian Studio of the South. It is here in Arles that Van Gogh meets the Arlesiennes, the supposed most attractive women in France. His desire to depict them is evident as he proclaims to his brother, Theo that he has finally found an Arlesienne willing to pose for him (Sund, 1992). This Arlesienne was none other than Mme Ginoux, the wife of the owner of the café that Van Gogh and his fellow artist, Paul Gauguin, often frequented. Sund (1988, 1992) argues that his first depiction of her (*L'Arlesienne I*, 1888) was depicted in the café around her natural surroundings, but in a second depiction (*L'Arlesienne II*, 1888), Van Gogh "literally transformed Ginoux..." and she "...became... an intent reader – and in this incarnation she is much a reflection of the artist as of his model" (209). This depiction of Ginoux included Naturalist novels, an interest that Ginoux did not seem to have based on evidence found by Sund (1988, 1992). Sund continues to argue that the influence that Van Gogh had received up to this point from Naturalist literature included the notion that in order to be modern, everyone, including women, had to be well versed in Naturalist literature. He writes this in a letter to his own sister Wil, saying, 'One can hardly be said to belong to one's time if one has paid no attention to [French Naturalism]' (Sund 1992, 210).

Van Gogh, while in Arles, continued to paint a multitude of works of books and one other particular painting of a woman reading a book: *Une Liseuse de romans* (1888). According to Sund (1992), "The painting's colors and tonalities emphasize the books' relation to light and conform to Van Gogh's notion that modern literature was at once figuratively and literally illuminating" (212). His idea of the modern woman was clearly delineated in his desire that women, in particular his sister, read the current and powerful literature that had so heavily influenced his perspective. Women reading novels which were written by men about their own condition, unfortunately, soon showed to be a problem as Wil, Van Gogh's sister, said to him that she did not like them, but instead preferred other literature (Sund 1988). According Naturalist literature itself, this was not the place of the woman, and therefore Van Gogh again became convinced that women were not meant to read novels of such class (Sund 1988). Soon after these exchanges with his sister, Van Gogh becomes ill and is forced to move to a sanitarium in S. Remy.

It is only after 1888 that Van Gogh, given his deteriorating state of mind, almost fully abandons French Naturalist literature (Sund, 1992). Van Gogh, now influenced by Loti, author of a novel of a sailor “wherein the author describes the sea as a nurse who rocks the sailor in his cradlelike ship” (218). It is here where his depiction of Mme Roulin, the wife of his postman friend, as “La Bercuse” arises. Van Gogh becomes fascinated with the consoling nature of this woman “whose hinted roles included those of mother, nursemaid, and wife” (220). For Van Gogh, these traits were “also...allied in his mind with Christian prototypes” which allowed him “to create... modern secular variant[s of Mme Roulin based] on traditional devotional images of saintly women” (220). Sund (1988) argues that Van Gogh’s multiple depictions of “La Bercuse” indicate his need for a comforting figure in his time of internal turmoil. This return towards a more sentimentalist view of the woman, can be traced to his abandonment of the scientific Naturalist literature and his return to novels he read as a young man.

Van Gogh, as his condition worsens, begins to come full circle and returns to the literature of Charles Dickens and Beecher, which he held so dear during his younger years. It is in 1890 that he paints his final depiction of Mme Ginoux (*L’Arlesienne*, *Mme Ginoux*) in which he includes Dicken’s *A Christmas Carol* and Beecher Stowe’s *Uncle Tom’s Cabin* instead of the Naturalist books he depicted her with just two years before (Sund, 1988). According to Sund (1988) Van Gogh does this to serve three purposes. The first being that he needed to create a piece that helped mirror his own state of mind, slouched and pale, and bring him comfort. The second, being his need to show his detachment from Naturalist literature. And finally, the third, to regain control of influencing the modern woman’s literary choices even if only in his paintings, as his sister was no longer taking his advice on literature. Van Gogh, during his time at S. Remy, paints a total of five La Bercuse paintings, in addition to his three *L’Arlesienne*’s, showing his true, almost desperate need to connect himself once again with the care and comfort of the ideal woman from his Christian youth.

The progression of Van Gogh’s artwork becomes a clear marker that, as literary influences change, so does his perspective on women. His moralistic, realist, and naturalist literary influences truly shape the way he relates to and depicts women, beginning with Kee, and continuing with Sien, Mme Ginoux, and Mme Roulin. It is also evident that, although Van Gogh abandons his convictions to formal Christian teachings, the Naturalist movement allowed him to fit his Christian convictions of standing up the marginalized within a modern context. Van Gogh found, in literature, the modern gospels he searched for. It is therefore clear that among all the literary movements, and regardless of his return to Moralistic Literature, that French Naturalism was key in his complex view

of women. Whether for good or for bad, these literary influences made him the worldwide known and bohemian Van Gogh that we know today.

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## **Role, Representation and Symbolism of Objects in *The Back Room***

Karina Cusumano<sup>1</sup>

Everything has meaning. Look around you and every single object in your life has a purpose. Carmen Martin Gaité's novel, *The Back Room*, is full of objects that have significant meaning to the characters within the text. As Stephanie Sieburth stated in her journal article, "In the novel, the middle-aged narrator-protagonist, C, has a midnight interview with a mysterious man in black, in which she strives to recapture her past as she lived it during the Republic, the Civil War and the postwar period" (78). The protagonist, Carmen (C.), is disrupted in the early hours of the morning by an interviewer, The Man in Black, to whom she reveals her secrets and past memories. Throughout the telling of her stories she relies on certain objects to help her revisit her past and recount memories of an earlier time. As Herbert E. Craig writes, "...specific words, ideas and objects in her presence allowed her to recover in detail forgotten moments from her past" (102). These objects also represent the chaos of the character's mind and her way of living. Symbols such as the mixed up contents of her sewing basket, the cockroach in her kitchen, the reappearing images of mirrors and the growing piles of paper all help the narrator analyze her former days. The various objects in *The Back Room* are utilized to understand the narrator's identity and reestablish her memory from before the Spanish Civil War.

The novel starts out with a sleep-deprived narrator who contemplates her sleeping positions while lying in bed. She analyzes her many restless nights and her thoughts begin to scatter in her mind. As she decides to get up out of bed, she takes a walk to a shelf that holds books supported by a sewing basket that had belonged to her Grandma Rosario. As she struggles to reach the Todorov book she was hoping for, she trips and the sewing basket falls open upon the floor (Gaité 11). The contents from within come pouring out: "From the half open wicker lid there come spilling out spools of thread, electric plugs, cubes of sugar, thimbles, safety pins, bills, a candle end, snapshots, buttons, coins, bottles of pills, everything imaginable, all tangled up in colored thread" (11). This is not any ordinary sewing box filled with sewing materials, but it is scattered with random objects. The sewing basket is used to represent the role of women during the

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<sup>1</sup> Written under the direction of Dr. Marilyn Kiss and Dr. Katica Urbanc for LC 5: *Exploring the Hispanic World Through Language and Film*.



Franco regime. Women are known for their domestic duties, and a sewing basket of ready to use items is always necessary in those of a woman's household. Carmen's basket however, was not like the others. Her basket of random objects shows her rebellious nature to the regime and the fact she did not follow the typical "womanly standards" of the time.

The scattered objects in the sewing basket also are used to reflect the state of the narrator's mind. Carmen's jumbled up thoughts coincide with the items of the sewing basket. They are sprawled out, but connected by one force. Like the materials in the basket that are connected by the colored thread, the thoughts of Carmen are reflected back to her interview with the Man in Black and the time before the War. As Deborah A. Castillo states in her article, "When the narrator trips over Todorov's indispensable book on the fantastic and spills the contents of the basket, all this varied cache becomes tangled together by the colored threads, the force that stitches together the disparate elements of the narrative" (826). As the narrator hopelessly searches for her misplaced objects she comes to the conclusion that she does not remember the objects within the basket and how they have all gotten there. She then comes to realize there is a folded sheet of paper hidden within the items and recognizes it as a long letter that she then sits down to read. The letter forms a part of one of the first stories she tells in the novel. The sewing basket represents the "textual allegory for that other 'confused mess' that was our head" (826) as stated by Deborah Castillo. The basket exemplifies the clutter of things the narrator has both physically in her home and mentally in her head.

When the Man in Black arrives to the narrator's house, she hurries to put clothes on to run downstairs. As she makes her way into the kitchen, she stumbles upon a barrier, keeping her from crossing the floor. A big cockroach is standing still in the middle of one of the tiles (Gaite 20). She struggles as to how to make her way around it and says, "There is a source of strength to it. Its plan seems to be to keep me from getting past it, I don't know how long we remain there confronting each other, both of us paralyzed, as though trying to decipher each other's intentions. Finally, I reject all intention of attacking it and opt for that of fleeing from it..." (21). The cockroach stood as a barricade for C, for she had a fear of going past it. The cockroach stands as a symbol of the Man in Black. She was at first scared of opening up to him or getting past the barrier of her mind where all of her memories and stories are stored. Mary T. Hartson states in her article, "The arrival of the man coincides with the appearance of an enormous cockroach and the relative position of the narrator it established. She rejects possibility of defending her territory and opts instead to give way before the cockroach, just as she does before the man" (1). The cockroach and the man came at parallel times to one another in the novel.

The narrator expresses her fear of the Man in Black, as she does of the insect. Just as she has done with letting the Man in Black become comfortable in her home, she does not defend her territory but lets the cockroach run away without killing it; she gives in to both of them. The cockroach had also popped up out of nowhere, just as the Man in Black did; they are both unpredictable creatures. While Carmen explains to the man what just happened in the kitchen he answers, “They’re mysterious, like all apparitions” (23). This is again alluding to the man himself.

The cockroach may also represent Franco, dictator of Spain, and the times during the war. She shielded herself during these times, keeping herself away from the social norms of his regime. She kept her writing to herself and felt she could not be who she was publicly without facing consequences. Carmen compares her fear of cockroaches with that of her rebellious friend she had met at the institution. She tells of how her friend once caught a cockroach in the kitchen and Carmen proceeded to ask, “Aren’t you scared of it” (Gaité 52), to which her friend replied, “No, why would I be? It’s not doing anybody any harm” (52). The contrast between Carmen’s fear and her less defiant side to that of her friend’s was evident through the cockroach. After the session with the Man in Black is over, Carmen wakes up to her daughter. As she is in the bedroom she hears a screech from her daughter in the kitchen. She, too, has sighted the cockroach and is screaming in fear. As Carmen proceeds to say how she thought she was screaming over something much worse, she tells her daughter, “Cockroaches are harmless, my girl” (213). For the woman who previously screamed for the same reason to say that they are harmless was a milestone. She now was saying what she was previously told. She had gotten over her fear of the cockroach and realized that it was something that should not have caused such distress. The fear she once had, was now her daughter’s fear. As Carmen states, “Another person’s fear helps one to overcome one’s own” (214). Just as the Man in Black helped Carmen to overcome her fear she was to help her daughter overcome her fear as well. The cockroach not only stands as a figure of importance to show Carmen’s growth and triumph over her fears, but also shows that she has overcome the refuge she had taken all of these years. After the defeat of the Franco regime and opening up to the Man in Black, she was able to step over the boundaries, such as the cockroach, and have a clear mind of who she was.

Throughout the novel Carmen seems to be looking into mirrors quite often. Her reflection helps her to remember times she may have forgotten about and to analyze her past experiences. Janet Pérez claims, “Philosophically mirrors are related to thought (both serve as instruments of self-contemplation). Metaphysically, they help to evoke apparitions and serve as doors to the other world” (149). When the symbol of the mirror

is first mentioned in the novel, Carmen sees her reflection in the “yellow light” of the mirror and notices the imperfections of herself and the room around her. She writes:

The room reflected in its quicksilvered depths seems unreal to me in its static reality. Behind my back everything is right side up again, perfectly in plumb, and I am so taken aback by the gaze of that vertical figure, with its arms dangling down the side of its blue pajamas, beaming back from me from the mirror, that it scares me...but outside the mirror the normality that it has reflected persists, and perhaps for this very reason the disorder that reigns there is even more depressingly obvious. (Gaité 8)

As C looks into the mirror she uses the pronoun “it” to describe herself. She does not recognize herself nor the mess that seems to be growing in the space around her. Looking into the mirror brings her both into reality and out of it. In this case the idea of reality versus fantasy was evident as she saw a clear vision of what was actually going on around her. As Erin J. Paul Scheutter adds, “The surprise and lack of recognition of the image reflected in the mirror provides an element of destabilization and the presentation of C’s identity” (147). Carmen’s inability to identify herself in the mirror displays her confused identity and her lack of knowledge about who she is as a person.

Mirrors throughout the novel also help to perform memory work for C. They help her to relive times of her childhood and compare her identity then to her identity now. Carmen confirms, “Now the little girl from the provinces who can’t manage to fall asleep is looking at me in the light of the little yellow lamp...” (Gaité 16). She still sees herself as a child when she looks at her reflection. She is also able to remember her childhood experiences more vividly by looking at her image in the mirror. Erin Schuetter writes, “...C sees her reflection in a mirror that in Carmen’s youth hung in her grandparent’s home and she narrates childhood experiences that occurred in the presence of the mirror” (14). The mirror that belonged to her grandparents has significance in reflecting on times at her house and before the war that she believed were happy ones in her life. The mirror also serves as a reminder of who Carmen used to be compared to her former self. She engages with objects, such as the mirror, for memory from the Franco Regime. Scheutter again states, “These past selves criticize her when, in the present moment they observe her doing domestic chores. This action occurs in an interior monologue, until the moment when C responds to the younger versions of herself by reassuring them she has not abandoned her impromptu style” (26). Carmen sees herself doing chores and duties around the house which she has never done before. She has come to terms with herself and the person she has become is revealed when she states:

I raise my eyes and see myself reflected with a hopeful, cheerful expression in the mirror with an antique frame hanging on the wall to the right, above the maroon sofa. There is just a touch of mockery in the reflected smile on noting that I am carrying a dust cloth in my hand. To tell the truth, the girl who is looking back at me is a child of nine and then a youngster of eighteen, standing in the huge dining room of my grandparent's apartment in the Calle Mayor in Madrid, come back to life from the depths of the mirror. (Gaité 68-69)

As she sees herself in the mirror she smiles, unlike previous times of shock as she stood before the glass frame. Carmen witnesses herself in the mirror doing chores. She is not used to this Carmen, for she had never been a person to fulfill the household tasks of women in the Franco Regime. Carmen uses this object to engage in an interior monologue. She reassures herself that she is the same person and although she may look different, she still sees herself as a young girl through her reflection in the mirror. Her younger self begins to "talk" to her through the mirror saying, "Well, well you're cleaning, I'd never thought I'd live to see the day!" (69). Carmen, as her older self, then replies, "Thanks, my girl, but don't worry, really I'm the same as always, I haven't let myself be brainwashed" (69). Through this inner monologue Carmen proves to herself that she still is the same person with the same beliefs. Her younger self consistently appears through the mirror to remind Carmen of the "dangers of domestic life." (69). Although performing the domestic duties that Carmen said she would not commit to contradicts her rebellious nature, the mirror symbolically reveals that her spirit has not changed, but has matured through time. Erin Schuetter confirms this maturation when she writes, "The mirror has served as a tool used to trace her steps and confirm what she already knew; her essence has not changed, it has evolved over time into a more mature version" (161). Carmen will always be the same person, but she has significantly grown through her experiences, now looking back and appreciating all of the times she has had.

Carmen's pile of papers is constantly referenced by the Man in Black and Carmen herself throughout *The Back Room*. As she sits in silence for a few moments between conversations, she notices the pile sitting against the wall like a castle. She states, "I seem to see a castle with paper walls rising in the air, or rather, a castle made of papers stuck together like bricks and full of words and deletions in my very hand. It grows bigger and bigger, taller and taller. It is going to tumble down at the slightest sound, and I take refuge inside it..." (Gaité 51). This "castle of papers" that she continually talks about is her writing. She writes on the typewriter and the papers grow as time goes on. She never really notices that this pile grows, for she is too consumed in the words she is printing. She confirms that this pile is where she takes refuge. It is where she

opened up and was able to express herself during the Franco dictatorship and the war while in Salamanca. As Erin Schuetter notes, “The papers in their accumulated un-reflected upon state represent a collection of ideas that can only be un-archived once Franco dies and memory can flow freely” (183). The papers consist of notes, research and experiences while she was undergoing the violence of the world around her. As she looks at the papers she recalls more memories from her childhood that she shares with the Man in Black. The papers are a mess of ideas; confirmed by García Martha in her article, “Los folios son el resultado del arte de hilar y tejer nudas de interlocución ginergetica” (131). The pile continues to accumulate throughout the novel and as she speaks she continues to write her ideas down without even realizing it.

Towards the end of the novel a gust of wind comes in through the house and reaches the pile of papers. The castle she once built and hid in was now destroyed; pages were blown all over, to be picked up by the man (Gaité 203). This symbolizes the closure she had and the fact that she no longer takes refuge inside her writing, but is able fully to express herself allowing her thoughts to be free. Carmen had asked the man to bring her shawl to her which he then wraps around her to keep her warm. She tells the man she is sleepy, but not to leave as she drifts to sleep (204). She is awakened the next morning by the sound of her daughter’s voice coming home. Carmen is confused to find an empty room, her shawl lying on the couch and the pile of papers still in tact. She writes, “...on the floor, is a large, neat pile of sheets of paper, with a paperweight on top, inside which is a miniature Gothic cathedral with iridescent columns” (210). The pile of papers remains in an organized pile that the Man in Black supposedly put together for her. As she examines the papers she reads the first page of the pile, “On the first one is written in capital letters with a black ballpoint pen: THE BACK ROOM. I pick it up and I begin to read” (215). The pile of papers reveals the memories she spoke to the man about and is written down taking shape of the novel we are now reading. Janet Pérez concludes, “*El caurto de atrás* lacks definite closure; the ending is a reflection of the beginning as the narrator, alone- again turns to a growing pile of papers beside her type writer and reveals the novel’s opening words” (52). The memories she was sharing throughout the novel were the memories she was writing down that consist of the novel itself. The last page of *The Back Room* transports us back to the beginning. She reads the opening phrases of the novel while she again is in her bed contemplating her normal sleeping position.

Carmen Martin Gaité’s gripping novel, *The Back Room*, consists of the character Carmen, who tells of her stories from the past through the various objects she encounters. Throughout the novel she is able to draw out information from her mind through the items that are most important to her. When a mysterious Man in Black rings her bell late

one night, she finds herself pouring out all of her deepest, darkest thoughts. As Elizabeth Espadas states, “El cuarto de atrás es fascinante desde otro punto de vista ...” (75). The novel consists of a jumble, scattered arrangement of her ideas and the recollection of memories from the past. Through the various objects including the sewing basket, cockroach, mirrors and the growing pile of papers she is able to transform her thoughts into dialogue to share her story out loud. These items reveal her disorganized mind, childhood experiences and the acceptance of who she is. The various objects in *The Back Room* are significant to the principal themes of the novel, and stand as symbols to the story line of the character.

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# **In Search of True Freedom in Post-Independence India: An Analysis of The Apu Trilogy**

Avika Sagwal (Business Administration)<sup>1</sup>

Admired for its “Bollywood” musicals and melodrama, Indian Cinema got a new direction with Satyajit Ray’s humanistic films. Ray encouraged the nation to rise above the boundaries of caste and poverty and the horrors of its colonial past. Inspired by Italian Neorealism and Soviet Expressionism, his films made a global impact after the devastation of World War II and decolonization. He pushed India to a fresh beginning. The Apu Trilogy comprises of three Bengali movies directed by Satyajit Ray: *Pather Panchali* (1955), *Aparajito* (1956) and *Apur Sansar* (1959). These stories are mainly based on two of the novels of Bibhutibhusan Bandopadhyay. It is a life journey for Apu that revolves around his struggles, losses, poverty and dreams. Each film in the trilogy beautifully compliments the others and represents a different phase in Apu’s life. It can be seen as a circle of life, where *Pather Panchali* shows Apu’s childhood and *Apur Sansar* ends on Apu’s reunion with his abandoned son in his childhood. Ray directs his movies in such a way that the whole nation can empathize with the sufferings and choices made by one individual. Through his movies, Ray brings out the dilemma of a newly emerging nation choosing between tradition and modernity, individualist ethics and communal solidarity, freedom and responsibility. Ray wanted to encourage greater self-consciousness among individuals to define themselves amid the paradoxes of an emerging nation.

## Background

“What Indian cinema needs today is not more gloss (unlike Hollywood films), but more imagination and more integrity... The raw material of cinema is life itself,” said Ray during one of his interviews.<sup>2</sup> Ray was born in 1921 in an intellectual and affluent Bengali family. His father and grandfather were distinguished writers and poets. At middle school, he became a film fan and an admirer of western classical music. After school, he was sent to Shantiniketan to train in Indian art by a great Bengali poet,

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<sup>1</sup> Written under the direction of Dr. Lori Weintrob for HI286: *On the Screen: Class, Gender and Culture in Film*.

<sup>2</sup> “Calcutta Film Society,” *satyajitray.org*, Accessed on November 19 2015, [http://www.satyajitray.org/bio/film\\_society.htm](http://www.satyajitray.org/bio/film_society.htm)

Rabindranath Tagore. His visits to the nearby village for sketching activities were his first encounter with the rural India. Soon, he learned to appreciate the hidden beauty and meaning of Indian art, a quality that can be seen in his films later on. In 1947, he along with his friends co-founded a film society. *Battleship Potemkin* was the first film they screened. Around this time, Ray started writing screenplays for his films.

As many say, his trip to London in 1950 was his turning point. He wanted to make a film on real locations with non-professionals about daily lives, an idea dismissed by his friends back then. Around this time, De Sica's *Bicycle Thieves* left a profound impression on Ray. *Bicycle Thieves* reconfirmed his conviction to make realistic films. Inspired, Ray started filming his first film *Pather Panchali*. Critics like Suranjan Ganguly have read Ray's work to understand *Pather Panchali* in terms of Italian Neorealism and write, "'The Apu Trilogy, it can be argued, is the first work of Indian Cinema that shifts the emphasis from exteriority to interiority', by which he means an investment in the inner subjectivity of 'psychological realism'."<sup>3</sup>

With utmost simplicity, Ray brings out the contrast between the alienating solitude of the city and the close proximity of nature and family. He paid great emphasis on the eyes of the actor and used shadows and reflections through mirrors and water to steal millions of hearts worldwide. In his introductory shot of Apu in *Pather Panchali*, Durga opens his eye forcefully. Similarly, Ray uses a close up in *Apur Sansar*<sup>4</sup> to capture Kajal's eyes to remind us of Apu in his childhood.

At Cannes 1956, *Pather Panchali* won a special prize for "Best Human Document", to which Lindsay Anderson said, "Cannes 1956 has discovered a new masterpiece of poetic cinema. You cannot make films like this in studio not for money. Satyajit Ray has worked with humility and complete dedication."<sup>5</sup> Despite opposition from the Government of India for its depiction of poverty in the film, Jawaharlal Nehru, the first Prime Minister of India, sent *Pather Panchali* to Cannes. The film supported his goals of industrialization and modernization and his anti-caste agenda.

### Poverty and Colonialism

India was a British colony for over two hundred years and finally rose to independence in 1947. Colonialism had destroyed the traditional economic and socio-

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<sup>3</sup> Bill Nichols, "Pather Panchali" in *Film Analysis: A Norton Reader*, ed. Jeffrey Geiger and R.L. Rutsky. New York: W.W. Norton, 2005. 351

<sup>4</sup> Ray. *Apur Sansar*, 1959

<sup>5</sup> Andrew Robinson. "The Apu Trilogy" in *Satyajit Ray: The Inner Eye: Biography of a Master Film Maker*. London: I.B. Tauris, 2004, 102.

cultural system in the country to give birth to the desire of material advancement and better amenities and living conditions of individuals. The films shot in the 1950s actually show the life of an average Indian under the colonial government of the 1930s. In *Pather Panchali*, when Apu is following Durga, he finds himself in a strange land. Ray describes the strangeness of the land by strong winds and a long shot of the landscape. He builds up anxiety when both Durga and Apu put their ears against an electric pole while their feet are dipped in water. When the sound of a steam engine is heard from the far end, the camera is placed below the train to capture both the speed of the train and the excitement of Apu running towards the train.

However, even after the introduction of railways and electricity in the country, a rural family still lived in the dark, both literally and metaphorically. In *Pather Panchali*, Apu's family barely earns enough to make both ends meet. There are not enough resources, job opportunities, electricity or school education around the village to bring about a change in people's lives. In one of the scenes when Apu's dad, Harihar is talking about taking up a job as a priest for a rich family, he dreams ahead and says "Two good meals a day, new clothes twice a year. What more could we want?"<sup>6</sup> Harihar's life and struggles have made him expect so little from life. In *Aparajito*, Apu's mother has to work as a cook to pay for his school fee. When Apu goes to Calcutta for the first time he is fascinated with having electricity and repeatedly plays with the switch. In *Apur Sansar* the poverty of Calcutta lingers on the fringes of each scene. The film opens with a close up of a recommendation letter written by one of Apu's professors, who wishes that Apu could have studied more. Apu responds, "I know sir, but I can't afford it." However, the professor encourages Apu to pursue his talents of writing. As the camera moves towards the door we hear a crowd striking in the background, shouting "*Inquilab Zindabad*" ("Long live the Revolution"), which was a famous phrase used during the Indian Independence Movement against Colonialism. Ray's *mise en scene* in the opening scene beautifully sums up the Apu's poverty restricting him to go for higher education and the tensions building up the against the colonial government.

#### Musical, Traditions, Class and Gender

Ray through his movies has uplifted the struggles of the young Indian population choosing between some of its outdated traditions and the new lifestyle from the west. India has always been very rich in culture. Even in the face of adversity, people choose to smile and enjoy the festivities. In *Aparajito*, a sequence of events in Benares beautifully depicts the cultural celebrations of India. First, we see Sarbajaya and Apu

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<sup>6</sup> Ray. *Pather Panchali*, 1955

visiting the chief shrine of Benares, where they gaze at the evening ritual of chanting and bell ringing through the haze of incense. Then Sarbajaya decorates her ground-floor room with *diyas*, candles and little lights for the festival of Diwali. But Harihar has over-exerted himself and is in a weak condition. A series of firework explosions in a burst of light can be seen and heard in the background. Being Apu's first Diwali, Apu is carrying a large sparkler in his hand and is excited to play with his friends. But looking at his father's condition, his face falls. Harihar senses his eagerness and gently releases him to go enjoy the festival of Diwali.<sup>7</sup> Similarly in *Apur Sansar*, Ray covers all aspects of an Indian rural wedding where the bride is dressed in red and gold, and the bed decorated with flowers on the wedding night.

While he honors important traditions and beliefs of the culture, he also manages to critique the unnecessary beliefs present in the society that are destroying the culture. For example, Pulu approaches Apu and pushes him into marrying Aparna, explaining if she doesn't get married soon then she will be cursed. Apu, who is a little shaken by the situation exclaims, "Are you living in the Dark Ages?"<sup>8</sup> Elders at the wedding saw Apu as Lord Krishna supported by low-angle shots. The wedding sequence also raises concerns about Aparna's right and say in choosing her life-partner. Gender inequalities can be spotted in numerous scenes in the trilogy. For example, all the girls are refused basic education and are expected to work in the kitchen at a very young age. In *Pather Panchali*, Sarbajaya says "Durga, at your age all the other girls know how to cook meals".<sup>9</sup> However later on the trilogy we see a very modern outlook on gender, where Apu offers to cook for Pulu someday. Moreover, in Apu and Aparna's marriage both of them possess equal rights. The fanning scene, where Aparna fans Apu while he is eating and then Apu fans Aparna while she is having her meal shows the changing gender values within the youth.

Class differences are also apparent in the trilogy. While Ray manages to throw light at the beautiful friendship of Apu and Pulu, he also makes sure to show some major class differences between the two. Pulu is from an upper middle-class family, who lived in the city and later goes on to work outside the country to earn money. In *Aparajito*, when Apu and Pulu are lying on the grass and staring at the steam ships, Pulu asks Apu if he is ambitious enough to go with him to England. Apu replies, "If I weren't ambitious I would have stayed home," showing the limitations of being from a lower-class family. Similarly, in *Apur Sansar* Pulu is dressed in shirt and trousers whereas Apu is wearing a

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<sup>7</sup> Ray. *Aparajito*, 1956

<sup>8</sup> Ray. *Apur Sansar*, 1959

<sup>9</sup> Ray. *Pather Panchali*, 1955

torn *dhoti-kurta*. In the restaurant while Apu is eating food with his hands, Pulu is seen using a fork. Later in the evening, Apu reveals, "I've had my first good meal in months, thanks to you (Pulu)."

Indian music has been used with great precision to highlight the nobility of serenity of emotion of the scenes. For example, in *Aparajito* when Harihar's soul departs his body, a huge flock of pigeons takes flight accompanied by the falling notes of a flute playing a melody of raga Jog. The same tune is played when Sarbajaya dies and when Apu is heartbroken after Aparna's death. In the closing scene of *Apur Sansar* when Kajal runs towards Apu, a piercing sound of high *tershenai* is played in the background. This tune was also played when Harihar and Sarbajaya lost their daughter Durga. It is as if the love that was destroyed then has revived now through Apu and Kajal.

#### Education, Modernization and Dream

Apu's journey inspires its audience to dream and to go after those dreams. Despite poverty, loss of his family and the societal pressure to become a priest, Apu rose above the system to give his dream of becoming a writer a chance. Harihar wanted to be a writer himself however due to his poverty he couldn't realize his dreams. In *Pather Panchali* he believes, "my ancestors were writers and they left a legacy that cannot be ignored" and expresses his desire to "write new kinds of plays and poems." In *Aparajito* after his father's death Apu moves back to the small village of Mansapota and is forced to learn to perform prayers and rituals so that he can carry on with his family tradition. Apu has other dreams and desires, and chooses to live his life on his own terms. One day he follows the kids in the uniform to school and insists "Maa I want to go to school."<sup>10</sup>

He puts his heart into studying and excels at school. However the school he goes to is only up to middle school. His headmaster calls him into his office and awards him a scholarship for higher studies in Calcutta and says, "We live in a corner of Bengal but that should not limit scope of knowledge." Motivated to come out of his shell of caste boundaries, restrictions and lack of opportunities, Apu moves to Calcutta and starts working part-time to support himself. When Apu comes back and learns that his mother died, he is completely shattered. His granduncle suggests that he should stay back and work as a priest. He refuses, "I can't be a priest all my life" and picks his bag and heads back to Calcutta. He has seen the misery of his parents by giving up on their dreams and he is determined to follow his dream even if he has to face poverty.

In one of the most popular scenes of the Trilogy, Apu is describing the plot of his novel to his friend Pulu. He writes about a Brahmin boy who is alone, poor but

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<sup>10</sup> Ray. *Aparajito*, 1956

ambitious. Both of them are walking on the railway track in the dark, where the only source of light is placed right behind Apu, showing how Apu is an inspiration to others living in the darkness of system. The camera closes up on Apu as he further elaborates on his novel with a sense of passion and joy in his voice, “He has greatness in him but he is not able to do much. However he doesn’t escape and he wants to live.” Pulu argues that the novel seems autobiographical. Shot in the post World War II era, Ray wants to encourage the home audience to live freely and to break through from caste and class boundaries. However, after Aparna’s death Apu’s life takes a drastic turn, he gives up on everything he has ever believed in and starts working in the coal mines of Central-India. “At key points in the trilogy Apu faces death-borne separation from significant persons in life (all women): his sister, his mother and his beloved wife. Yet each separation marks the stage of a new freedom, expanded potentiality in Apu’s life.”<sup>11</sup> When Apu comes back to the village, he finds a reflection of Aparna and himself in Kajal, and finally takes responsibility to raise his child.

The trilogy is about Apu’s life journey and each film in the trilogy share a similar closing scene showing Apu walking on a path that would lead him to the next phase of his life. In *Pather Panchali*, Apu can be seen moving with his parents to Benares, in *Aparajito* he heads back to Calcutta and in *Apur sansar* he along with Kajal on his head, is moving into a fresh beginning together. Ray shot the closing scene of *Apur sansar* with a low-angle shot, where both Apu and Kajal are smiling and ready to cope with any challenges that lie ahead. Apu is a single dad who finally takes responsibility of his son and chooses to raise him in a modern way where they share a bond of friendship and not force. The Trilogy ends on a very positive note where the whole country through the eyes of Apu can forget its feudal and colonial past and step into a modern world responsibly.

### Conclusion

In the country where musicals have been a part of filmmaking, Ray’s cinema was widely appreciated for its serenity. Unlike other Bollywood heroes who lived extraordinary lives, Apu's heroism was his portrayal of courage and hope in his ordinary life. It was the first time that in a big country like India, people appreciated the realistic cinema and discovered that there is a hero in each one of them. Ray’s films stood out of

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<sup>11</sup> Peter J. Bertocci, “Bengali cultural themes in Satyajit Ray’s ‘The World of Apu’”. *South Asian Literature*, Michigan State University, no. 19 (1984): 33, accessed November 19, 2015, <http://www.jstor.org/stable/40872633>.

all Bollywood films of that time because they brought a fusion of modern western cinematographic techniques and heart-warming Indian traditions.

Ray brought real and ordinary stories up on the screen, where people are born, live and then accept death. However, these stories stirred up deep passions within the audience at home and audiences in the western countries. He motivated the nation to let go off the past and to take responsibility for the challenges ahead, striking the right balance between tradition and modern values. While he wanted the nation to walk on the path of progress together in communal solidarity, he also valued the individualistic ethics of a young Indian. These films demonstrated that progress and independence come at a cost, for both an individual and a nation, and attempted to awaken a recently independent nation to understand the meaning of true freedom.

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# St. Thomas and the Individuality of the Human Soul<sup>1</sup>

Alyssa Thompson (Philosophy)<sup>2</sup>

In Article I of *The Soul*, St. Thomas Aquinas raises a significant question concerning the nature of the human soul. He asks: “Whether the soul can be a form and a particular thing?”<sup>3</sup> Article I has been the subject of much scholarly commentary. Unfortunately, as I shall show, these commentators have overlooked part of St. Thomas’ message. They correctly show that the soul exists as a form and as a spiritual or self-subsistent substance. Yet, they neglect – for the most part<sup>4</sup> – the particularity of the soul. I intend to highlight St. Thomas’ account of the soul as a particular thing, which he stresses in the article.

Consider, for example, some of the scholars who have commented on St. Thomas’ Article I. Armand A. Maurer states that the human soul is, in St. Thomas’ opinion, an “intellectual substance and the form of the body;” and as such, the soul “has its own act of being and hence exists by itself.”<sup>5</sup> Vernon Joseph Bourke states that the human soul, for St. Thomas, is “a substantial, self-subsistent entity”<sup>6</sup> that exists as “the form of the human body.”<sup>7</sup> M.C. Fitzpatrick and J.J. Wellmuth make a similar point: they state that the human soul, according to St. Thomas, is a “spiritual substance” as well as “the form of the body.”<sup>8</sup> The point I would like to make here is that these commentators

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<sup>2</sup> Written under the direction of Dr. John Danisi for the honors independent study PH593: *Contemporary Theories of the Self*.

<sup>3</sup> From St. Thomas Aquinas, *The Soul*, trans., J. P. Rowan (St. Louis: B. Herder Book Company, 1959), 142.

<sup>4</sup> An exception to the claim is found in W. Norris Clarke, “Living on Edge: The Human Person as a ‘Frontier Being’ and Macrocosm,” *International Philosophical Quarterly* 36.2 (1996): 183-199.

<sup>5</sup> From Armand A. Maurer, *Medieval Philosophy* (New York: Random House, 1962), 181.

<sup>6</sup> From Vernon Joseph Bourke, *The Pocket Aquinas* (New York, Washington Square Press, 1960), 111.

<sup>7</sup> *Ibid*, 114.

<sup>8</sup> From M.C. Fitzpatrick and J.J. Wellmuth, “St. Thomas Aquinas: On the Nature of Man.” *Spiritual Creatures* (Milwaukee: Marquette University Press: 1949), 141.



capture St. Thomas' view that the human soul is a form of the human body, and that the soul is a spiritual substance, but they do not address the entirety of St. Thomas' question: namely, they leave out the notion of the soul as a particular thing. In overlooking the particularity of the soul, they rob the soul of its uniqueness and individuality, a view that is contrary to St. Thomas' account of the human soul in Article I. He states, in a memorable sentence:

The soul is a particular thing and that it can subsist of itself, not as having a complete species of its own, but as completing the human species by being the form of the body. Hence it likewise follows that the soul is both a form and a particular thing.<sup>9</sup>

Let us now turn to Article I to see the manner in which St. Thomas develops his account on the particularity of the soul. St. Thomas, like Aristotle before him, begins his account by addressing the metaphysical question: what truly exists, or what is really real? Following Aristotle, St. Thomas maintains that what truly exists are concrete individual things. These things have not only actual and positive existence in the world, but they also exist as distinct individuals. Some of these things are living things, namely, plants, animals, and human beings. From studying these living things, St. Thomas was able to bring into view the universal capacities or activities of living things, such as life, nourishment, reproduction, motion, sensation, perception, recollection, and intellection. He found that plants have the activity of life, nourishment, reproduction, and motion; animals display these capacities as well as sensation, perception, and recollection. More importantly, human beings carry out all of the aforementioned capacities, as well as a unique capacity, namely, thinking, which he calls intellection.

The question arises: How does St. Thomas explain the existence of those capacities in living things? Following Aristotle, St. Thomas introduces the soul as the active operating power. It is precisely the soul, and not some physical thing, that allows those living things to exist and act in a determinate way. St. Thomas concludes that there is a hierarchy of souls, that is, souls of varying degrees of spirit: plant souls, animal souls, and human souls. What interests us is the human soul, which he calls the rational soul.

How are we to understand the mode of the human soul's existence? In Article I, St. Thomas provides us with an answer. He states: "The human soul's mode of existing can be known from its operation, namely, intellection."<sup>10</sup>

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<sup>9</sup> Aquinas, *The Soul*, 143.

<sup>10</sup> Aquinas, *The Soul*, 144.

St. Thomas is concerned here to show that the human soul, through its operation of intellection or thinking, is a human function that is capable of knowing and grasping universals. St. Thomas agrees with Aristotle's explanation of the soul, namely, that the soul's operation of intellection has the capacity to know universals. The activity of intellection has the task of bringing into view universal truths, which are, as St. Thomas puts it, embedded in "matter and material conditions" by way of abstraction, and not by way of recollection.<sup>11</sup> Here St. Thomas and Aristotle are seeking to distinguish their explanation of knowing from that of Plato. All three speak of the act of knowing or thinking as central to grasping universals, but Plato insists that universals are recalled or recollected by human beings, and that they exist apart from matter and material conditions. In Article I, St. Thomas compresses his explanation of knowing into this sentence:

The rational soul, whose operation consists in understanding, and in abstracting species not only from matter, but from all individuating conditions, this being required for the understanding of universals.<sup>12</sup>

To be sure, St. Thomas does agree with Aristotle. However, he seeks to complete Aristotle's explanation of the human soul in its operation of intellection. St. Thomas reminds us that the operation of intellection is carried out by a human being, more specifically, a particular human being; and as such, it is his or her thinking that does the abstracting of universals, which are embedded in things. The commentator, Gerald Kreyche, seems to be on the right track in describing the activity of thinking as "man's thinking."<sup>13</sup> Here he notes that the act of thinking is performed by human beings. But unfortunately, he does not highlight the fact that the act of thinking is carried out by a particular human being; and, as a result, he does not account for the soul as a particular thing.

Furthermore, St. Thomas holds that in the case of the rational soul, as understood as a particular thing, another feature must also be highlighted: specifically, that the soul, in its activity of thinking, performs that activity without the aid of the body. In Article I, St. Thomas puts this point clearly and succinctly:

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<sup>11</sup> Ibid, 142.

<sup>12</sup> Aquinas, *The Soul*, 142.

<sup>13</sup> Jesse Aloysius Mann and Gerald F. Kreyche, *Reflections on Man: Readings in Philosophical Psychology from Classical Philosophy to Existentialism*, (Harcourt: Brace & World, 1966), 53.

In the case of the rational soul, something of special importance must still be considered, because not only does it receive intelligible species without matter and material conditions, but it is also quite impossible for it, in performing its proper operation, to have anything in common with a bodily organ... Thus the intellective soul, inasmuch as it performs its proper operation without communicating in any way with the body, must act of itself. And because a thing acts so far as it is actual, the intellective soul must have a complete act of existing in itself, depending in no way on the body. <sup>14</sup>

In so far as the human soul carries out the operation of intellection, St. Thomas argues that the human soul or the intellective soul is a “self-subsisting thing.”<sup>15</sup> St. Thomas further explains that although human beings consist of a union of soul and body, wherein the body is required for the activity of perception, the soul eventually surpasses the body when engaged in its unique operation of intellection. The intellective operation of the soul transcends the body, insofar as the soul does not make use of any of the bodily organs when grasping universal concepts. To use the words of St. Thomas, the intellectual soul “must act of itself.”<sup>16</sup> St. Thomas again makes this point clear: “inasmuch as the human soul has an operation transcending the material order, its act of existing transcends the body and does not depend on the body.”<sup>17</sup> Since the soul has an operation distinct from the body, it must exist by itself, that is, as a self-subsisting thing.

In sum, St. Thomas, therefore, has enabled us to see the human soul’s mode of existing by way of its unique operation, namely, intellection. To make his position clearer, let us illustrate the human soul’s mode of existence by way of an example. Consider a student learning a mathematical law, namely, the Communicative Law of Addition. This law states that A plus B is equal to B plus A. To assist the student, we would begin by writing particular arithmetic equations on the chalkboard such as:  $3+5=8$ ,  $6+1=7$ ,  $2+3=5$  and so forth. Note that these equations are sensible objects, that is, humans can perceive them with their sense of sight. Next, we would get her to notice that the order of the numbers being added may be reversed and still yield the same solution:  $5+3=8$ ,  $1+6=7$ ,  $3+2=5$ . Looking closely at the equations, she would now begin to recognize that  $3+5=5+3$ ,  $6+1=1+6$ ,  $2+3=3+2$ .

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<sup>14</sup> Aquinas, *The Soul*, 142-143.

<sup>15</sup> Aquinas, *The Soul*, 143.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid, 144.

At that point, she would go on to entertain this group of equivalent arithmetic equations, entertaining them by thought, wherein she would abstract the Communicative Law of Addition. She would come to understand that these equations are simply illustrations of the Communicative Law of Addition. Notice here: that the student's thinking enables her to lift out from those perceptual objects, something not seen, something that is not visibly written on the board, namely,  $A+B=B+A$ . By way of intellection, the student is able to move beyond sensory perception, namely, the perceived equations on the board, and bring into view, what St. Thomas refers to as "immaterial knowledge," that is, something that was not seen, nor understood before, namely, the Communicative Law of Addition.<sup>18</sup>

Furthermore, it is not merely the activity of thinking that brings into view the universal concept, but her thinking. It is this particular student's thinking that is able to grasp the universal. Moreover, the particular student is not using any bodily organs, in this case, her physical eyes, to bring the universal concept into view. Rather, her operation of intellection acts by itself when grasping the mathematical law. And in so far as her particular thinking grasps the law without the aid of the body, the human soul proves to be a particular thing and to be a self-subsisting thing.

As a particular, self-subsisting thing, St. Thomas maintains that the soul not only gives life to the body, but also lends its life to the body; and as such, the soul is capable of existing independently of the body. As St. Thomas puts it: "The soul is a particular thing and that it can subsist of itself, not as a thing having complete species of its own, but as completing the human species."<sup>19</sup>

The self-subsisting part of the soul is separate from the body, not as another substance, but as the other component of a human being. In Article I, St. Thomas clearly states that "it is impossible and inconceivable for the intellect to be one of the separate substances."<sup>20</sup> He therefore considers human beings to be embodied souls, rather than a composite of body and soul. Commentators concern themselves with showing that the soul is a separate, independent substance that survives the death of the body. That is only part of St. Thomas' account. He is more concerned with the soul as a particular substance, in that, it is the individual soul that survives the death of the body.

The human soul as thus understood, has been confirmed by St. Thomas in Article I, wherein he has given a metaphysical treatment of the notion of the soul, along with his account of what truly exists. If the soul does not exist in anything else, but exists

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<sup>18</sup> Aquinas, *The Soul*, 144.

<sup>19</sup> Aquinas, *The Soul*, 143.

<sup>20</sup> *Ibid*, 147.

in its own right, it must have independent existence. It follows that since all existing things are concrete individual things, that is, things that have actual, positive and particular existence, then, the human soul is also a thing that has actual, positive and particular existence. St. Thomas' account of the soul existing as a self-subsisting thing and a particular thing is important for understanding Christian theology, and especially his works. Indeed, it becomes the foundation of his theology, wherein the salvation of individual human souls has a central place.

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## **Mentor Programs for New Registered Nurses**

Juliana R. Ohanian (Nursing)<sup>1</sup>

Currently, the healthcare climate is characterized by an unstable supply and increasing demand for registered professional nurses (RNs), especially in hospital settings (Green & Puetzer, 2002). As the population ages, and continues to demand the best and most advanced health care, the recruitment and retention of nurses along the continuum of health care settings remains critical (Fox, 2010). In an attempt to combat attrition and improve retention of RNs in these environments, many healthcare institutions adopt mentorship programs, which also can attract others into the system. Such efforts are done to support novice nurses in their delivery of high-quality patient care (Greene & Puetzer, 2002). These models vary in duration, type of education, and available resources. Nevertheless the presence of a mentorship program improves retention and competency of new graduate RNs with important cost benefits (Rush, Adamack, Gordon, Lilly, & Janke, 2012). It is evident throughout the literature that the installation of a nurse mentor program benefits workplace culture, increases job satisfaction, and decreases hospital spending and costs, while also leading to positive patient outcomes.

In order to fully comprehend the beneficial effects that these programs have had on patient care, the role of the nurse mentor in the workplace must be understood. A nurse mentor is “an experienced and competent staff nurse who serves as a role model and resource person to a new staff member,” (Greene & Puetzer, 2002, p. 68). Nurse mentors provide new graduate registered nurses with the guidance necessary to become successful and professional RNs (Latham, Ringl, & Hogan, 2011). Both mentors and mentees described eight mentoring functions perceived as most significant to their success (Latham et al., 2011). These included personal and emotional guidance, coaching, advocacy, career development, role modeling, strategies and systems advice, learning facilitation, and friendship. Availability is also a key function of a mentor, as mentees identified the importance of going to mentors in times of uncertainty or stress (Beecroft, Santner, Lacy, Kunzman, & Dorey, 2006). Mentors also assist with situations, such as interpreting data, communicating with other healthcare workers, and assisting

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<sup>1</sup> Written under the direction of Dr. Annemarie Dowling-Castronovo for the independent study NR593: *Nursing Mentorship for New Nursing Grads*.

mentees in assimilating into the workplace culture by providing a unique perspective of the workplace (Latham et al., 2011).

### Facilitating Assimilation into Workplace Culture

Assimilation into workplace culture may be one of the most difficult aspects of transitioning into a new job. To counter this stress, one of the primary roles of nurse mentors is to socialize new RNs. They facilitate the new RN's socialization into their new workplace by actively integrating them into the facility's social culture. By doing this, new RNs can feel more comfortable and welcome in peer groups among co-workers and with the overall organization (Beecroft et al., 2006).

The workplace culture in hospitals encompasses the social norms, programs, policies, and procedures of the organization (Latham, Hogan & Ringl, 2008). Organizational culture simultaneously operates along at least three levels of all healthcare organizations and institutions. The micro level stems from the assumptions of the individual workers. Their values, beliefs, thinking frameworks, and behaviors, are learned and shaped by the power relations among influential social groups. The meso level includes the ascribed social groups, such as ethnicity, gender, age, and religion, in which people belong to and interact with and among. The last of the three levels, the macro level, includes the formal structure and processes of an organization. Within each of these levels of organizational culture are deeply rooted values, beliefs, assumptions, and habitual ways of behaving. The organizational culture of a hospital plays a significant role in framing the daily lives of its employees (Latham et al., 2008). Mentor programs ease this stressful period of assimilation providing new RNs with the ability to focus on patient care, which has shown to lead directly to enhanced patient care (Beecroft et al., 2006).

### Nurse Mentor versus Preceptor

A major misconception in the nursing community is distinction between the roles of mentor versus preceptor. Gordon and colleagues (2014) offer an illustration that clarifies the differences:

A mentor is concerned with the development of a more long-term relationship with a nurse that focuses on their professional development and growth.

Whereas, the preceptor engages in a more short-term clinical teaching and instruction with a focus on orientation and role socialization with the aim of building the nurse competence. (p. 5)

While it is extremely important to have clinical instruction, it is equally important to enhance the novice RN's professional development and growth. Latham and colleagues (2008) and Smith (2013) agreed that fostering professional growth and development enhances the self-awareness of the nurse and leads to their making better patient-related decisions. This has been evident in improved measures of patient and nurse satisfaction and safety. An example of the latter was improved patient safety outcomes relating to fall and pressure ulcer prevention, as well as use of restraints (Latham et al., 2008).

The relationship between the mentor and mentee is viewed as critical to the positive development of the mentee's career. The ultimate goal of the mentorship is to achieve safe and competent practice (Greene & Puetzer, 2002). This is achieved by accentuating career advancing skills, such as critical thinking and cultural competency, to guide mentees to present themselves in a manner that shows advanced professional development when completing their mentorship and becoming independent (Beecroft et al., 2006; Latham et al., 2008; Rush et al., 2012). The competence of a mentee can be measured by determining the integration of the knowledge, attitude, and skills necessary to function in a specific role in an assigned clinical setting (Greene & Puetzer, 2002).

In addition to positive mentee outcomes, another substantial outcome achieved was increased job satisfaction among all staff, especially among the mentors (Fox, 2010). One study that captured this mentor satisfaction is The California Nurse Mentor Project (Mills & Mullins, 2008). The California Nurse Mentor Project was designed to create a replicable program to improve the quality, sensitivity and effectiveness of patient care through enhanced retention of nurses. Mills and Mullins (2008) stated that mentors reported revitalization and enthusiasm for their jobs as well as for nursing as a career. Perhaps the best illustration of the value of being a mentor was this personal quote by a mentor, "As mentors, we see this experience as an opportunity for personal growth; meeting our professional responsibility to help nurses stay in nursing," (Mills & Mullins, 2008, p. 313)

Another study of 89 mentors and 109 mentees in two southwestern United States hospitals suggested mentor programs enhance professionalism of frontline RNs: "Mentors report feelings of being valued with improved engagement and less burnout following engagement in the mentoring process" (Latham et al., 2011, p. 345). The majority reported feeling completely "reinvigorated." Mentors not only became more engaged in supporting fellow RNs, but also with enhancing the overall work environment for RNs. Mentors reported having positive self-perceptions of their mentoring skills, and were often sought out by other RNs on their unit, thus boosting their self-esteem (Latham et al., 2011).



### Elements of Mentoring Programs

In the literature several elements of mentoring programs emerged. Three elements seemed more critical than others: mentor-mentee matching selection process, education and preparation, and incentives.

#### **Mentor-Mentee Matching and Selection Process**

Success in the mentorship requires risk taking on both part of the mentor and mentee in order to achieve desired outcomes. It is necessary they work to discover abilities within themselves that permit growth, avoid over-dependency, and identify when the relationship has achieved its goals (Greene & Puetzer, 2002). Some of the key factors that contribute to the success of mentor-mentee relationships are an organizational matching and selection process that includes the criteria to be a mentor or mentee. Although the process of mentor-mentee matching among the literature differs, there are common elements that are essential.

It is an expectation among most programs that the mentee possesses some of the following characteristics: openness to receiving help, interest in seeking challenges or new responsibilities, has a strong sense of self-identity, shows career commitment and competence, and excitement about nursing (Greene & Puetzer, 2002; Fox, 2010; Owens & Patton, 2003). Criteria to be a mentor is more variable among the different programs, however the most common characteristics included willingness, availability, knowledge, experience, and competence (Greene & Puetzer, 2002; Fox, 2010; Owens & Patton, 2003). This was clearly evident in a study that examined the effectiveness of mentor programs that selected mentors who had good communication skills, high level of expertise, familiarity with the organization, and motivation to assist fellow nurses (Fox, 2010).

Fox (2010) identified the importance of mentors and mentees coming from the same educational background, working the same shift, and having generational compatibility between both parties. In the literature, there is a strong emphasis on availability of the pair to meet on a regular basis; and that this availability can be linked to having mentors who volunteer and are committed to accommodating mentees into their busy schedules (Beecroft et al. 2006; Fox, 2010; Latham et al., 2008; Latham et al., 2011). Another common element is matching based on personality types and compatibility between the mentors and mentees (Beecroft et al., 2006; Fox, 2010; Greene & Puetzer, 2002). Conversely, Latham and colleagues (2011) suggested that personality and compatibility were not the most important factors for successful mentor-mentee teams. However, they do believe that the data gathered on personality and learning style assist the mentor-mentee pairs with self-reflection and improvement of future communication (Latham et al, 2008).

## **Education and Preparation**

Another essential element was the type and amount of education and preparation provided to both mentors and mentees prior to, and integrated into the program. Education programs were individualized on a programmatic basis and varied among published reports. The individual mentoring program education provided prior to mentoring were effective for most. An effective program included mentors and mentees taking the classes together, which facilitated bonding (Fox, 2010). Another program incorporated interactive activities between mentors and mentees during educational classroom sessions, in addition to mentors attending two mentor-only support sessions each year (Latham et al., 2011). Providing structured time for mentors and mentees to establish written goals during the education sessions acted as a guideline for the growing relationship (Latham et al., 2008; Mills & Mullins, 2008).

Among the literature reviewed, only Beecroft and colleagues (2006) specifically discussed issues that arose from inadequate education of mentors and mentees prior to the initiation of the program. These included not being educated on specific role details of the mentor and mentees or career advice and networking opportunities (Beecroft et al., 2006). Adding strength to this was Latham and colleagues' (2011) finding that mentors requested extra skills and classroom time in addition to what was provided. This included, "team building, review of critical communication skills, cultural competency, time management, conflict resolution, and feedback on personality and learning styles," (Latham et al., 2011 p. 347).

## **Incentives**

Incorporation of incentives facilitated the success of mentor programs. Monetary compensation took a variety of forms: end of the year bonuses, stipends, and paid classroom education time for mentors (Fox, 2010; Gordon et al., 2014; Green and Puetzer, 2002; Latham et al., 2008). One program also incentivized by awarding continuing education units for the mentors (Latham et al., 2008). Other incentives included staffing and scheduling flexibility, such as holiday time off, and title and leadership recognition in the hospital organization (Green & Puetzer, 2002). Similarly, others established career ladders for professional advancement (Latham et al., 2011). Although not explicitly stated, the positive outcomes of the majority of the mentor programs may be attributed to these incentives.

### Effects Clearly Defined

As previously mentioned, implementation of mentor programs positively affects the workplace, the personal and professional development of both the mentor and mentee,

and patient outcomes related to both increased safety and satisfaction (Latham et al., 2008). The most predominant positive outcome mentioned in the literature reviewed was increased retention and decreased attrition among the RNs related to improved job satisfaction (Fox, 2010; Latham et al., 2008; Latham et al., 2011; Mills & Mullins, 2008; Parsh & Taylor, 2013). A major contributor to increased retention is the significant effect mentors have had on improving the workplace, consequently improving job satisfaction (Latham et al., 2011). Job satisfaction increases retention by decreasing stress and promoting positive self-esteem and confidence among nurses in the patient care setting (Beecroft et al., 2006). In the California Nurse Mentor Project, retention and job satisfaction were also attributed to feeling a sense of achievement, developing professional confidence and autonomy, having established relationships with colleagues and managers, leading to an overall sense of fulfillment at work (Mills & Mullins, 2008).

The hallmark effect of these mentoring programs is improved nurse retention rates, which leads to economic savings (Latham et al., 2011). By decreasing the turnover rates of nurses, healthcare facilities save money that was previously spent on hiring and training new RNs. Latham and colleagues (2008) illustrated the cost-effectiveness of mentor programs: "Overall, the mentors prevented more than 24 RNs from leaving the 2 hospitals, with a cost savings of almost \$2.5 million dollars using a \$100,000 per RN replacement charge" (p.37-38). While another documented an annual expense of \$291,000 for the mentoring program, that decreased the attrition rate of nurses by 93.71%, for a total savings of just over one million dollars (Fox, 2010).

Other outcomes achieved by the implementation of mentor programs should not go unrecognized. In particular, one mentor program described as an "overwhelming success" initiated by the nursing department, resulted in other departments initiating similar mentoring programs (Fox, 2010). Similarly, Latham and colleagues (2011) defined the potential of these programs: "this type of mentor development work also could be used to enhance faculty and student mentoring in nursing education programs, so that mentoring is not a new concept to newly employed RNs," (p.352). Another incentive for hospitals to initiate mentoring programs is the fact that it is a requirement for achieving the prestigious Magnet status designation (Latham et al., 2011). The American Nurses Credentialing Center (ANCC) awards Magnet status to hospitals that achieve the gold standard for nursing practice. In order to be awarded Magnet status by the ANCC:

Hospitals must include mechanisms for mentoring and professional development of nurses as well as succession planning. In the application process, examples

must be provided that speak to mentoring for these purposes. (Melnyk & Fineout-Overholt, 2011 p. 347-348)

#### A Need for More Information

The search and analysis of the literature did not reveal evidence of nurse mentor programs in New York City, a geographical region that has three hospitals with Magnet status. Since the literature clearly defined the importance of mentor programs, and it is a requirement for magnet status, an understanding of how New York City hospital systems institutionalize mentoring programs in a geographical area that is culturally and socio-economically diverse will be informative. In order to gather such information, I propose a survey tool developed from this current literature review (See Appendix A). The tool draws upon the strengths of those published. More importantly, it addresses weaknesses reported and identified. The information gathered will enhance the understanding of current state of mentoring.

#### Conclusion

There is clear evidence to support the initiation of nurse mentor programs. It is imperative that healthcare organizations use these programs to improve job satisfaction. By increasing job satisfaction, RNs can work to enhance patient care skills and cultivate a positive workplace environment, maximizing the potential for a safe and positive experience for patients. These programs are essential for organizations to have a competitive advantage over other institutions to retain new RNs leading to substantial cost savings. Additional research of hospital systems within New York City is essential to growing this body of knowledge. The proposed survey tool will gather the information needed to contribute to this important body of knowledge.

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## Appendix A: Interview Survey

### **Inclusion Criteria-**

- Mentor:
  - Work in an acute care hospital facility
  - Work 0.5 Full Time Equivalent (FTE) or higher.
  - Work in one of the five boroughs of New York City
- Mentee
  - Hired to their workplace within the last five years.
  - Have never worked in their workplace prior to being hired as a RN.
  - Completed their orientation process in full.
  - Work in one of the five boroughs of New York City.

### **Exclusion Criteria-** Mentors and mentees who:

- Have been licensed greater than 5 years.
- Hold a degree higher than Bachelors of Science in Nursing.
- Hold a per diem position.

### **Introduction and description of survey**

This survey was designed to gather information of current mentorship programs in NYC in order to compare and contrast to the current literature

### **Demographic Information**

- What is your year of birth?
- What is your gender?
- What year did you graduate your nursing program?
- What degrees have you earned? Circle all that apply.
  - AAS, BS, BSN, Other

### **Survey:**

- Please list all the institutions you have worked in as a registered nurse.
- Where is your current place of employment?
  - Section One: Orientation Process at current place of employment
    - How long was your orientation process?
      - 2-4 weeks
      - 4-8 weeks
      - >2 months
      - Other:

- I cannot recall
- On what unit are you currently employed?
- Did your orientation include a classroom component?
  - Yes/No
    - If yes, please explain how the classroom component influenced your work in the patient care setting.
    - If no, what about a classroom education may have been beneficial before working in the patient care setting?
      - Please explain what you would have liked to learn in a classroom setting before being exposed to it in the patient care setting.
- Did your orientation include an online education?
  - Yes/No
    - If yes, please explain how the online education influences your work in the patient care setting.
- Section Two: Preceptor Pairing
  - Once on your work unit, were you paired with a preceptor?
    - Yes/No
      - If yes, were you given the opportunity to select your preceptor? Yes/No
        - If yes, please explain the process of selection.
      - If no, do you believe you were matched well with your preceptor?
- Section Three: Mentorship
  - A mentor is described as “an experienced and trusted adviser.” Based on this description, to what extent do you agree or disagree your preceptor acted as a mentor to you? Select one.  
 Strongly Agree    Agree    Disagree    Strongly Disagree
  - Once on your work unit, were you paired with a mentor different from your preceptor?
    - Yes/No
      - If yes, did you get to select your mentor?
        - If yes, please specify the process of selection.

- If no, did you connect with an individual who acted as a mentor to you?
    - If yes, please specify how this relationship started.
- Please describe what “mentor” means to you in no more than two sentences.
- If you had a mentor, please elaborate on how having a mentor affected you.