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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.

Read on and enjoy!

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**Section I:**  
**The Natural Sciences**

# Reconstructing Electron Tracks Using a Gas Electron Multiplier Detector

Gia DeStefanis (Physics and Mathematics)<sup>1</sup>

This is a preliminary study for the development of a new detector that uses Gas Electron Multipliers (GEM) to reconstruct positron tracks emanating from a source object. In this study, the ionization trail left by an electron is used to determine the position and calculate the angle of the charged particle track as it traverses the gas detector. This is accomplished by analyzing the charge distribution from the incident charge on the readout pads of the detector. The long term goal is to image tracks in three dimensional space and generate a Positron Emission Tomography (PET) image.

## I. Introduction

The purpose of this investigation is to reconstruct an electron track from a Strontium- 90 (Sr-90) source. A triple GEM detector with a multiple pad readout was employed to image segments of the ionization trail left behind by electrons as they traverse the drift gap of the detector. By measuring the charge distribution on the pads, the charge centroid (equation 1) and the track angle may be determined, corresponding to the position of the track and a vector pointing along the direction of the track respectively (figure 1).

$$\text{Centroid} = \frac{\sum_i w_i x_i}{\sum_i w_i}$$

$w_i$  is the charge on pad for a given event (1)

$x_i$  is the pad number

## II. Apparatus

The detector is made up of three standard GEMS with a mesh on top and readout pads underneath (figure 2). It is enclosed in an Ar-CO<sub>2</sub> gas mixture that flows in

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<sup>1</sup> Research performed under the direction of Dr. Craig Woody (Senior Physicist, Brookhaven National Lab) and Bob Azmoun (Stony Brook University) during a summer 2011 SULI (Science Undergraduate Laboratory Internship) Program.



a 70-30 ratio. A gas system delivers the mixed gas to the detector at a flow rate of 100cc per minute. High voltage is delivered to the 7 GEM electrodes by a power supply with

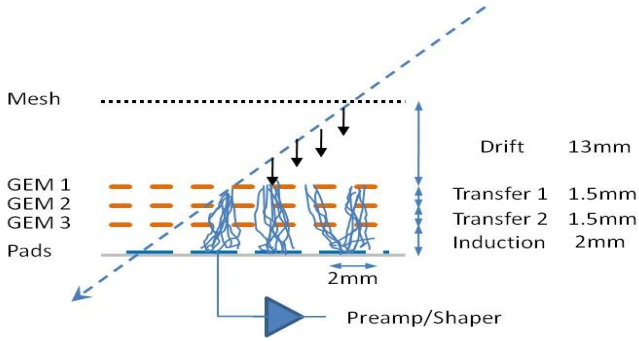


Figure 1a: Detector performance

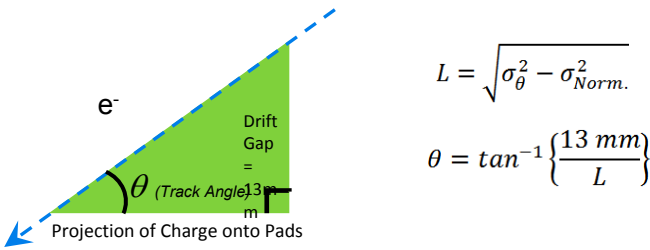
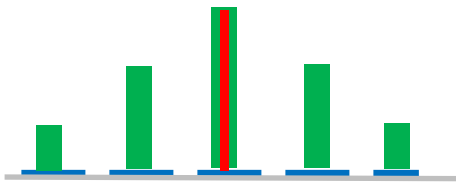


Figure 1b: Illustration of how the track angle is calculated. The collected charge is a projection of the track in the plane of the pads, thus allowing the reconstruction of the track angle.



Green: charge distribution on pads for one event. Red: centroid calculation for one event

Figure 1c: Measurement of track position using the charge distribution and centroid calculation

independent channels. For protection, each channel has a 10 micro-amp trip setting that avoids possible sparking in the detector.

The detector (figure 3) is illuminated with a collimated beam of electrons from a Sr-90 source. As the electrons enter the detector, they leave behind a trail of ionization in the rather wide drift gap of 13mm, whose projection is then measured on the pads (figure 4). Sr-90 undergoes  $\beta$ -decay, and releases electrons with energies up to 2.28 MeV. The Sr-90 source is mounted inside a primary brass collimator (figure 5) that has a 1.22 mm hole and is 1" long. This collimator is then mated up with a secondary 3" long brass collimator with a 1mm hole. Originally, it was mated with a 1" long brass collimator with 1 mm hole but that resulted in very poor collimation, providing no peak in the pads. Adding the extra 2" corrected the problem .

Located underneath the brass is a veto counter that has a 0.75 mm hole drilled into a 2x2" piece of thick scintillator mounted to a PMT. The veto PMT is set to 1400 V with a threshold of 20 mV. The purpose of the veto is to reject all electron tracks that do not go through the hole in the scintillator during data taking. The electron tracks or events of interest are obtained by asking for there to be charge in the GEM, but no light in the Veto PMT. This ensures that the electron track that is detected is one that goes through the hole in the veto scintillator and is thus collimated. Additionally, requiring a "hit" in the GEM, provides a positive trigger that signals the data acquisition system (DAQ) to record the pad signals corresponding to this event.

Once the charge from the track is drifted into the GEM detector and amplified, the amplified charge is then collected onto a one dimensional planar array of 12 pads that are 2x10.5mm each and read out using a preamplifier and shaping amplifier. The pads are in a Chevron (zigzag) pattern that allows for greater charge sharing between pads, which results in a more accurate measure of the centroid.

The pre-amps and shapers are connected to 3 flash-analog-to-digital-converters (FADCs), each equipped with 8 channels. The FADC records the magnitude of the charge pulse from the preamp/shaper as a function of time and this information is then saved to disk for analysis. The FADCs record a sample of charge every 10ns and collect 200 such samples after each trigger.

A stepping motor was utilized to move the source collimator over a specific pad and accumulate 250,000 triggered events. With the source at normal incidence to the pad plane, runs can be taken at several such positions with the aim to reconstruct the position of the source using the data from the pads. Similarly, the incident angle is also set to 70° with the aim of reconstructing the angle of the track.

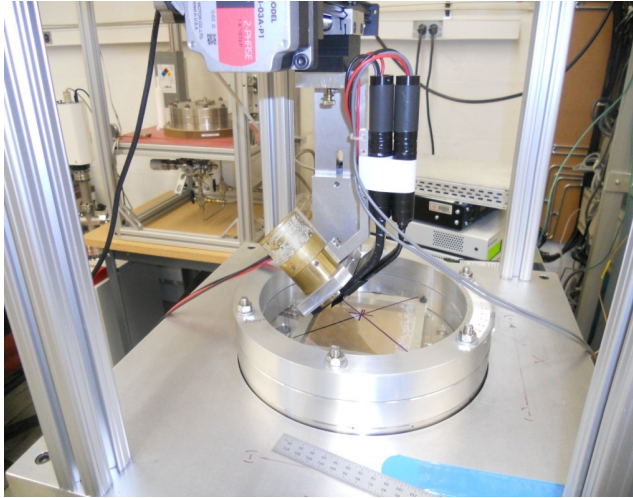


Figure 2: Image of the apparatus, which shows the source collimator and veto counter illuminating the GEM detector.

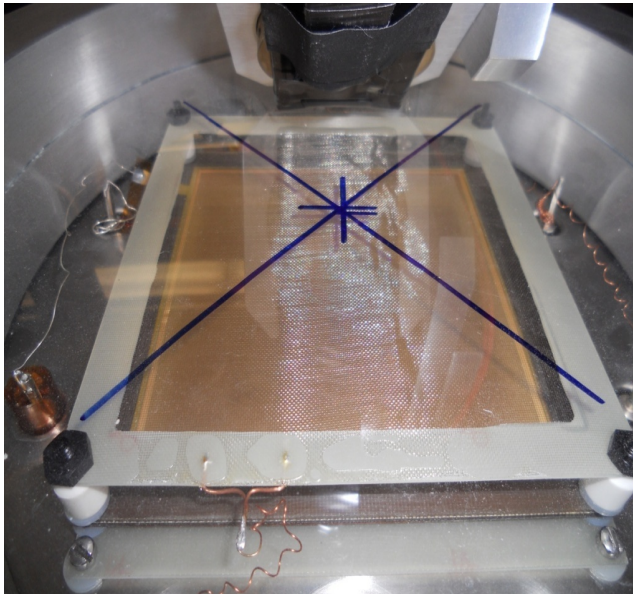


Figure 3: Image of the top of the detector, with cross hairs indicating the center of the pads.

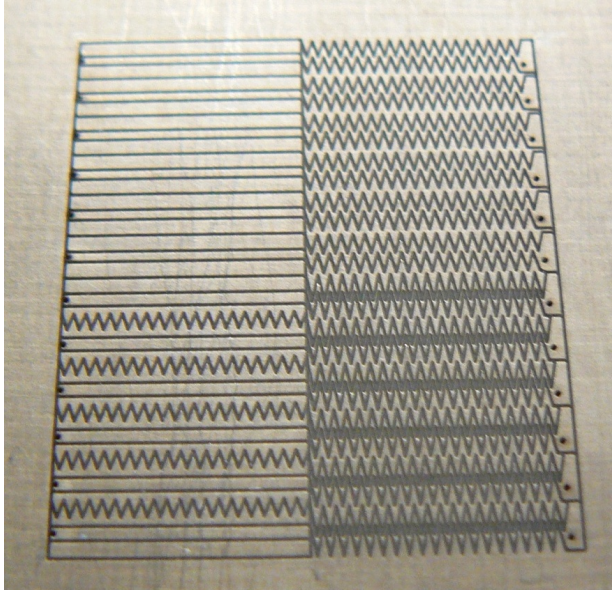


Figure 4: Image of the pads below the GEMs: using the right side only

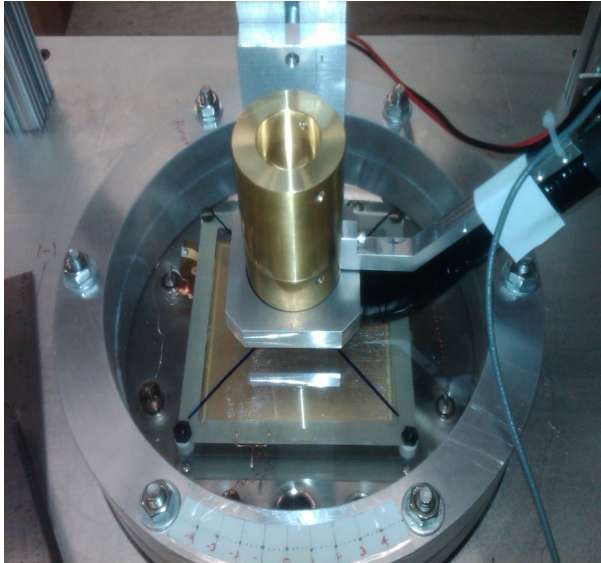


Figure 5: Image of the collimator.

### III. Methods and Analysis

During the summer months of 2011 a lot of preliminary work leading up to the final measurements was completed. A new pre-amplifier box was constructed, it was populated with 12 new preamplifiers and shaping amplifiers and checked to make sure that each channel had a similar electronic gain and rise time. A new channel to pad map for all 24 channels of both the new and old preamp boxes was also developed. A new GEM strip anode board (a one dimensional strip of 66 pads with 200 micron pads and 100 micron gaps) arrived and was tested for continuity, grounded and connected. FADC module with 14 bits also arrived. Since the others had only 12 bits, the extra 2 bits were masked.

Calibration all the channels of the FADC preamp combination was accomplished by sending in a pulser to the preamps of a given amplitude, in effect injecting a known amount of electrons in to the preamp, based on the formula,  $Q=VC$ . By observing the resultant peak in the FADC, a relationship between the number of injected electrons and FADC channel was obtained. In doing this it was discovered that the first FADC has a calibration factor 4 times higher than the other two FADCs. The calibration constants for all 24 channels are summarized in figure 6.

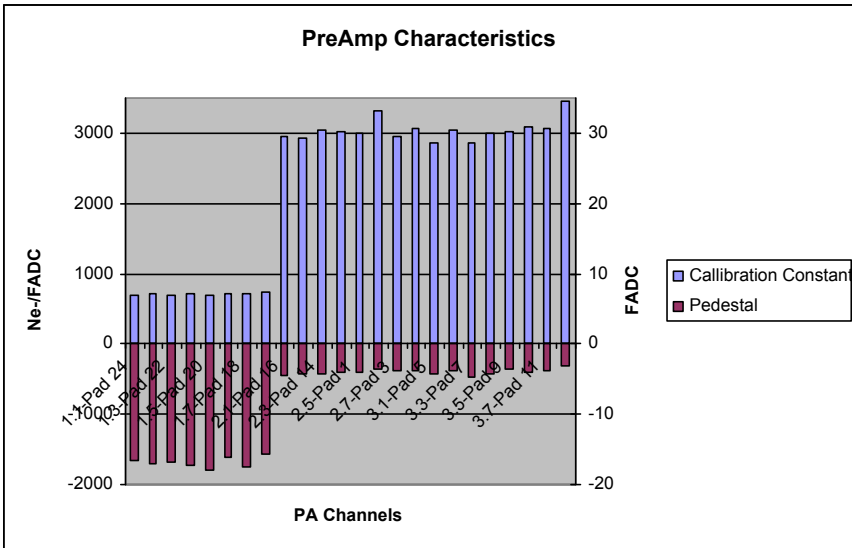


Figure 6: Bar graph of calibration constants

Following this, the preamp calibration was implemented in the code.

Furthermore, the code was cleaned up this year by implementing the mapping globally in the code, by placing it in one place at the beginning of the code instead of repeating the same mapping sequence throughout at various places.

Before taking data, some basic expectations were verified. Initially, the drift time of the primary charge in the GEM drift gap of 13mm was measured to be 400ns. This is demonstrated on the scope (figure 7), which shows the distribution of the arrival time of charge on the bottom GEM electrode with respect to the veto + scintillation counter trigger. A spread of about 520ns was expected based on the fact that the drift velocity in Ar/CO<sub>2</sub> (70/30) is 2.5cm/μs. A drift length of 1.3cm, divided by the drift velocity, results in a 520ns drift time.

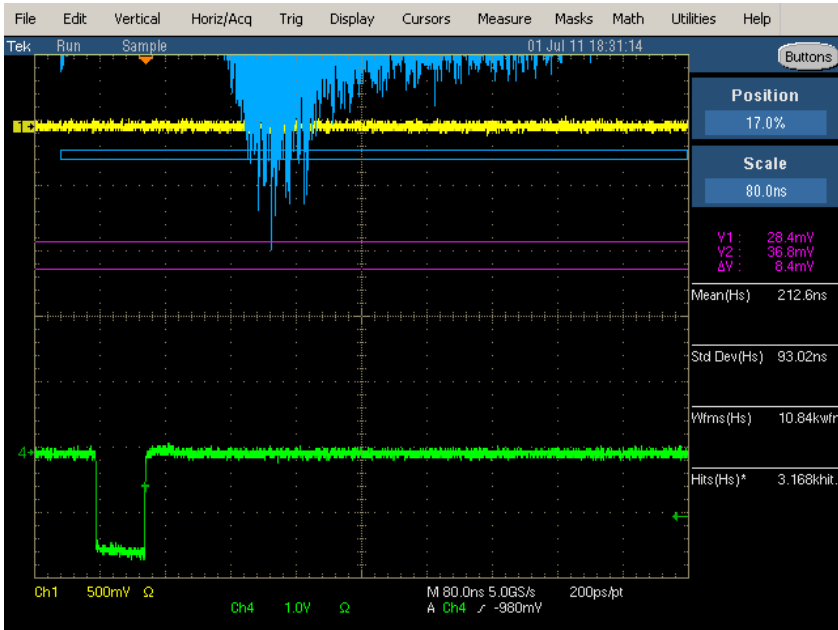


Figure 7: Drift time of the primary charge in the GEM

The number of primary electrons in the gas from a track were calculated by first noting that a MIP in Ar/CO<sub>2</sub> (70/30) deposits 2.6 keV/cm of energy. Multiply that by 1.3cm \* 2<sup>1/2</sup> (assuming an angle of 45°) and find that there is 4.78 keV of deposited energy per track by the charged particles. For Ar/CO<sub>2</sub> (70/30) 28 eV/ e-i pairs are produced. By dividing 4.78keV/28eV, 171 e- per track is determined, which when divided by 6 pads

(or 12mm) is calculated to be 28 e-/pad on average from a single track. This number, as well as the measured noise of each preamp channel is used to calculate the signal to noise ratio, which is around 1% shown (figure 8). The average noise measured for each channel was about 2500 electrons. Assuming a gain of about 8000, results in a signal of about 224,000 electrons, leading to the 1% mentioned above.

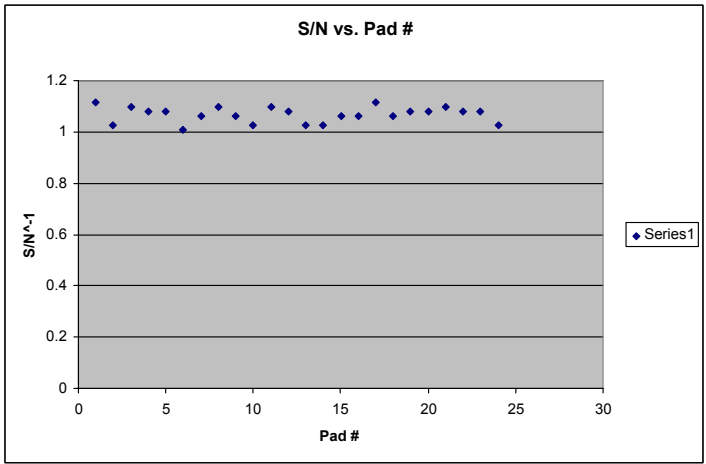


Figure 8: Signal to noise vs. pad #

The energy spectrum for Sr-90 was measured by using a GSO crystal mounted to a PMT. The raw PMT pulse height spectrum was measured and then the background and the pedestal were subtracted off (figure 9).

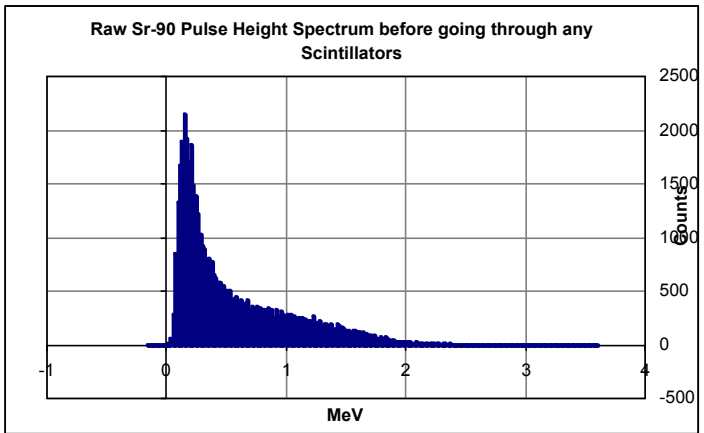


Figure 9: Raw Sr-90 Pulse height spectrum before going through any scintillators

A C++ program has been written which uses certain algorithms to analyze the data from the DAQ. For each event, the program initially calculates the baseline of the pulse coming from each of the pads by averaging over the first 20 charge samples. After subtracting off this baseline, the program then integrates over each pulse to determine the total charge within the pulse. With this information, several histograms are made, including one of the sum charge from all the pads per event, one that shows the charge distribution on the pads by simply summing the charge on all pads for all events, one that shows the number of pads that were hit per event, and finally one that shows the distribution of the centroid calculated for each event. The centroid gives a measure of the track position and is calculated by finding the weighted average of charge on the pads, according to the formula above. The projection of charge on the pads gives a measure of the angle of the incident particle, using simple trigonometry.

By illuminating the detector with a Fe55 source, the gains of the detector and calibration scale of the histograms in terms of primary electrons were measured. For most of the measurements the gain was around 8,000 (figures 10 and 11) and the resolution was roughly 20% for the Fe55 peak. Fe55 produces an average of 210 primary electrons in the Ar/CO2 (70/30), thus the peak of the Fe55 pulse height distribution sets the histogram scale for the Sr-90 measurements (figure 12).

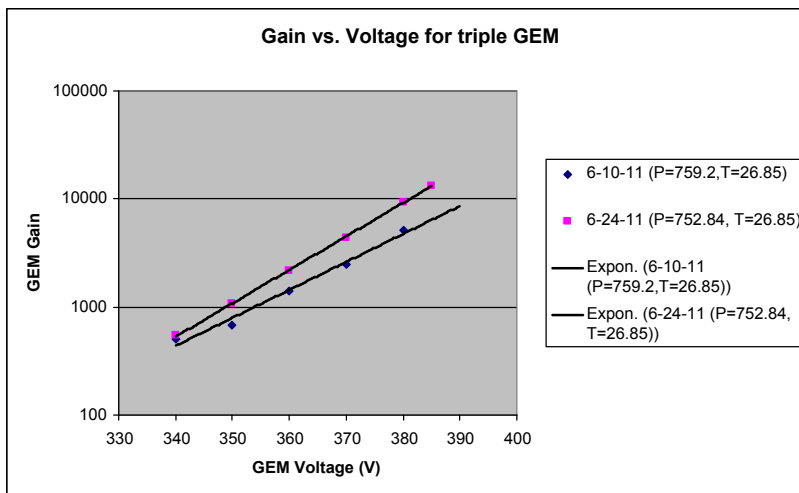


Figure 10: Gain vs. voltage for triple GEM



The “P/T corrected gain” is the gain adjusted for a P and T value of 760 Torr and 293 Kelvin respectively. The gain fluctuations observed above are likely due to the fact that the GEM detector was turned on and off and on again, and was in an unknown state of charging up, resulting in values of gain that appear to vary independent of P/T.

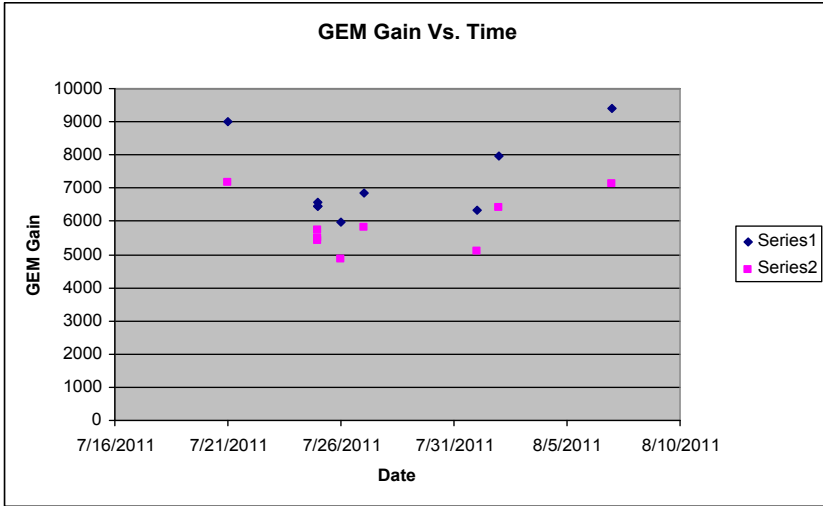


Figure 11: GEM gain vs. time

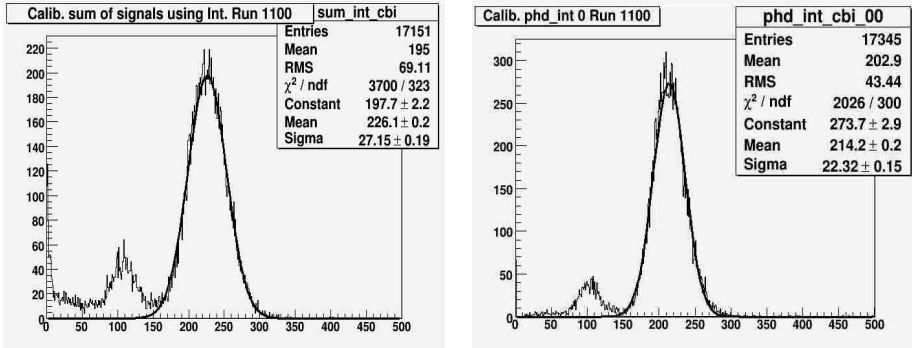


Figure 12: Fe-55 pulse height distribution

As mentioned earlier, the raw data from the FADC consists of 200, 10ns samples of charge, which render the pulse height from the preamps as a function of time.

Charge from the preamp is integrated in 10ns bins (samples) and saved as a data pair, the first number is the sample number (with respect to some starting trigger), and the second is the charge amplitude, in units of FADC channel. For each trigger a pulse for each preamp is recorded and these raw data pairs are used to calculate the total integral of charge from each preamp. This is calculated by the Riemann sum from 50 samples behind the channel with the highest amplitude to 50 samples after this channel. By choosing +/- 50 samples it gave the best RMS for the sum\_int\_cbi histogram of the Fe55 spectrum.

In the code specific cuts are set when the histograms mentioned above are created. A 'MINPULSE' cut is the minimum amplitude on the pads for an event to be counted which is set to 2 primary electrons. 'MAXPULSE' is set to 75 primary electrons and is the maximum amplitude on the pads so that anything outside MINPULSE and MAXPULSE is not counted as an event in the code. 'MINGEM' and 'MAXGEM' are the minimum and maximum number of primary electrons in the bottom GEM pulse height spectrum required (channel 1.1) to constitute an event, set to 30 and 1000 respectively. 'MINSUM' and 'MAXSUM' are the minimum and maximum sums of all the pulse heights of all the pads required to constitute an event to 60 and 1000 respectively. There is also a limit to the number of pads being hit using MINPADHIT and MAXPADHIT and that is a window between 1 and 4. Finally, the analysis is limited to one row of 12 pads on the board.

The configuration file for the FADC's is changed in an effort to center the waveform in the window of 200 samples. Now the peak is centered on around 100 samples, whereas before the peak was set askew to one side of the 200 sample window, at around sample 140.

Some improvements were made to the system. An earlier version of the trigger included a trigger counter underneath the veto counter that was 0.5mm in width but it was too thin and produced little detectable light. Since the light signal was so low, a threshold was set for this PMT low as well, which caused it to trigger on noise of very high rate. The high rate led to many false triggers in the data. So, when removing this, it triggered on the veto and the GEM signal. However, it also turned out that the veto is not very efficient at rejecting no-collimated electrons within the beam, leading to the rather broad beam observed in the data (figure 13). A measurement was performed to test the inefficiency of the veto counter: By triggering on the GEM alone for 30 seconds there was 1100 counts, and when triggering on the GEM and veto for 30 seconds there was 1000 counts. From this information it was determined that the veto is very inefficient at

rejecting uncollimated electrons from the beam. In order to improve the measurements, a highly efficient veto counter is needed and possibly even a thicker collimator.

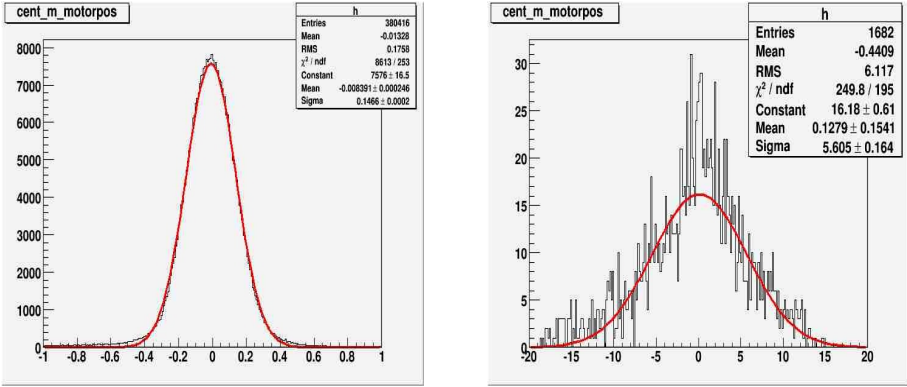


Figure 13: Centroid minus motor position distribution, integrated over all positions

#### IV. Results

The position of the source was moved by 1.75 mm, for 8 iterations along the pads. The average displacement of the calculated position (centroid) was found to be 1.9mm, in good agreement (figure 14) with the actual displacement of the motor (1.75mm).

The linear extent of the charge distribution on the pads is taken as the length of the track projection on the pads with the source placed at a given incident angle. After subtracting off the width of the distribution at normal incidence (which reflects the beam width), the track angle may be calculated according to the formula above. For tracks corresponding to 70° incidence, the projected length was found to be about 7mm, corresponding to a calculated angle of 62°, in good agreement with the set angle (figure 15).

With the source set to normal incidence, the centroid distribution (figures 16 and 17) was fit to a Gaussian function, whose mean is the calculated position of the source. The width of the Gaussian ( $\sigma$ ) is found to be about 5.2mm on average, which is significantly larger than the 1mm diameter of the collimator, indicating that the beam is not well collimated.

The width of the beam was calculated according to the equation (2). Having already measured the resolution of the detector using a finely collimated x-ray gun (100um), the beam was found to be 5.5mm wide ( $\sigma$ ).

$$\text{Detector Resolution} = \sqrt{\sigma_{c-m}^2 - \sigma_{e^- \text{ beam}}^2}$$

(2)

$\sigma_{c-m}$  is the width of cent. -motor pos. distribution

$\sigma_{e^- \text{ beam}}$  is the width of Sr-90 electron beam

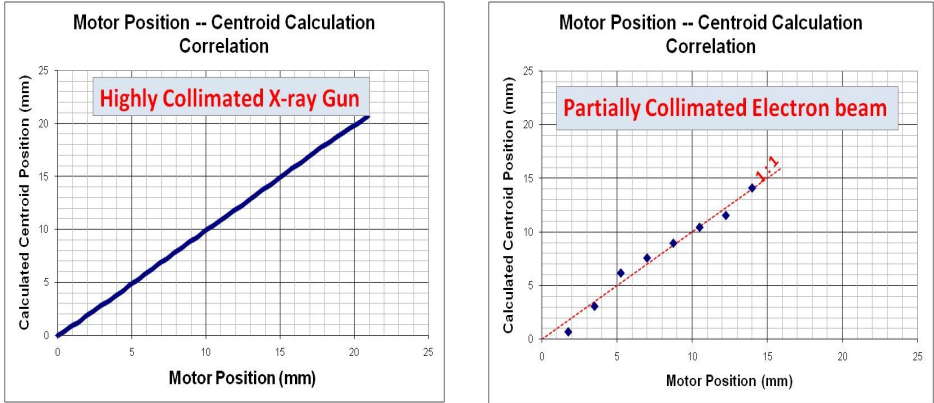


Figure 14: Centroid vs. motor position

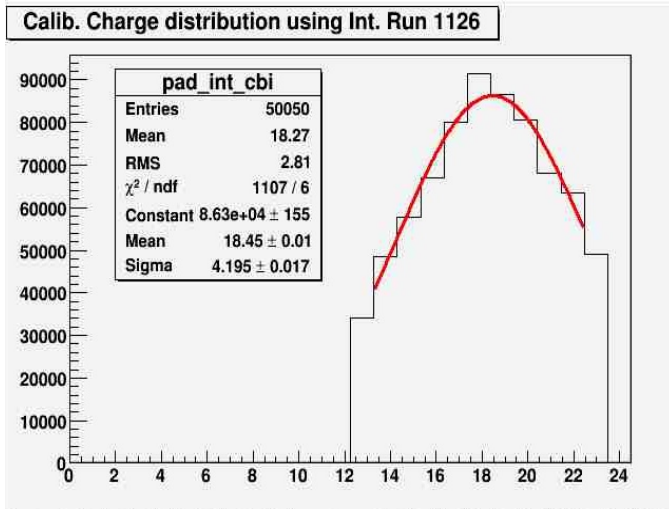


Figure 15: Charge distribution on pads (source placed at 70°, calculated angle: 62°)

Figure 16: Centroid distribution on pads at one position

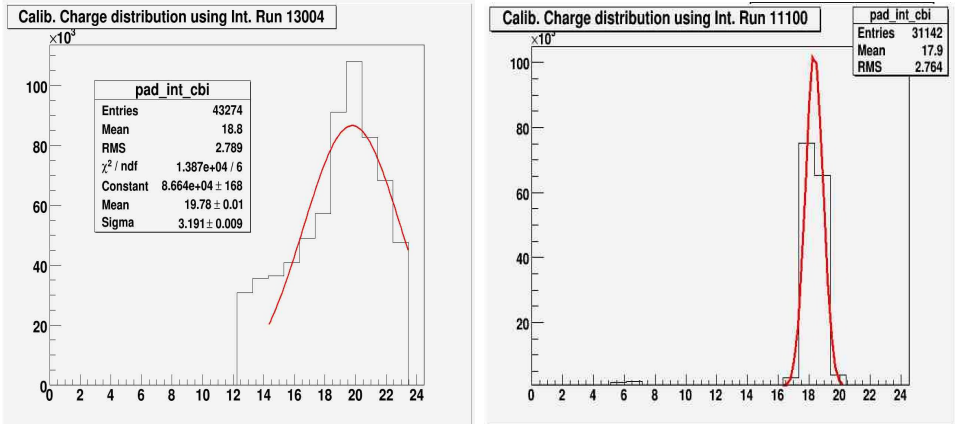
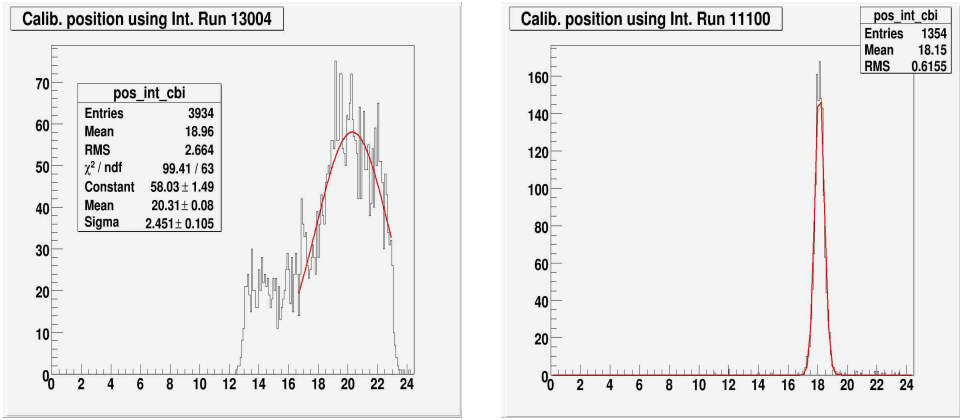


Figure 17: Charge distribution on pads at same position

## V. Conclusions:

It has been successfully demonstrated that a GEM detector with a large drift gap may be used to measure the position of an electron source. In addition, by measuring the projection of the track on the pads of the detector, one can estimate the angle of the track.

However, a more precise determination of the angle can be obtained by measuring the drift time of the charge as it arrives on the pads. This will be studied in further tests of this detector. Ultimately, the reconstruction of such tracks in three dimensional space allows one to develop a tomography of the object which is used to create a PET image. The benefit of using GEMs in such detectors is that they are inexpensive, simple, reliable and versatile enough that they may be used for many applications.

## **VI. References**

1. B. Yu et. al., “Study of GEM Characteristics for Application in a Micro-TPC” *IEEE Transactions on Nuclear Science*, Vol. 50, No. 4, August 2003.
2. B. Azmoun, “A Gaseous Based Drift Detector with GEM Readout for Tracking

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

# Studying in a Group Versus Independently: The Effects on Exam Grades

Tehmina Bhojani (Nursing)<sup>1</sup>

In preparation for nursing school examinations, students try to find the best method to study and to memorize the material that will be tested. While some prefer to study individually, there are some nursing students that prefer to be around their peers and to study together as a group. Both study methods have shown to have their own benefits as well as drawbacks. Previous research studies have supported that students do prefer to study in groups because it helps them improve their grades within the class. However, the purpose of this study was to see if studying independently versus in a group yields greater academic success for second degree nursing students. Data was collected using a questionnaire that asked about demographics, study preferences and exam grades. After analysis, the results indicated that studying independently did show a significant increase in the average exam grades.

## I. Introduction

Exam preparation, specifically related to study methods prior to exams, can be accomplished in many ways. Some students prefer to study independently while others prefer to study in groups. Advantages versus disadvantages can be identified for either method. For example, from this researchers' academic experience, some students identified studying alone as a "more focused, getting your work done approach"<sup>2</sup> and indicated that group studying downfalls included frequent distractions that may take them off the topic and the task at hand. On the other hand, students who would rather use the group study method reported that study groups enabled the "sharing of ideas and solidified understanding of the topic,"<sup>3</sup> which is absent when studying independently. Students learn more when giving an explanation to another than when receiving one (De Voogd, Pilot, & Van Eijl, 2005). The purpose of this study is to identify which study method, independent versus group study, achieves higher exam grades for second-degree nursing students.

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<sup>1</sup> Research performed under the direction of Dr. Lauren O'Hare (Nursing) in partial fulfillment of the Senior Program requirements.

<sup>2</sup> Researchers' subjective analysis of the subject matter

<sup>3</sup> Researchers' subjective analysis of the subject matter



## **II. Research Question and Hypothesis**

Question: Is there a relationship between studying independently and higher exam grades?

Hypothesis: Students who study alone achieve higher exam grades compared to students who study in groups.

## **III. Review of Related Literature**

Research studies on study groups were very limited. Currently, there was no literature found that supported the researcher's hypothesis; and all preliminary studies do not support that independent studying achieves higher exam grades. A study conducted by the faculty at Utrecht University in 2005 concluded that "statistical analysis showed that collaboration resulted in significantly better marks" (De Voogd et al., 2005 p. 49). Faculty involved with this study performed their research on their English literature classes. At the end of the semester, an evaluation was completed on the course and the student's preference of working individually or in groups of three students. Students read weekly books and then were required to work individually to complete a quiz. They were then either to work with their team or individually, based on the student's preference, and complete assignments based on those readings. Compared to previous background information of the course, the completion of the reading increased from 60% to 90% (De Voogd et al., 2005). According to De Voogd et al. (2005), "the comparison of marks showed that the collaborating students as a group were the highly performing students" (p. 57). The students that studied collaboratively achieved higher marks as well as learned more than the students who performed individually.

Nursing schools today offer different methods of delivering the material that will be tested on the National Council Licensure Examination (NCLEX®) upon the students' graduation from the program. Lectures and case-studies can relate to how the content is studied and retained by the students (Campbell, Herrold, Lauver, West, & Wood, 2009). According to Campbell et al. (2009), "students report a preference for receiving didactic instruction that provides the information they believe they need to know" (p. 134). This preference is similar to studying in a group – students will learn and study the material that is believed to be on the exams. Campbell et al. (2009) also found that using "case study as an interactive teaching methodology requires students to become active learners, think critically, and extend classroom knowledge into the clinical realm" (p. 134). Studying independently gives the student an advantage of being able to relate the content received to real life scenarios, as does using a case study methodology.

The results of Campbell’s et al. (2009) showed “no significant differences in learning outcomes between lecture and case study teaching methods” (p. 137).

Although research on study groups was limited, literature was found from 1995 in which study groups among nursing students was researched. Adams and DeYoung (1995) found that “study groups, both in class and out of class, those structured by the teacher and those informally organized by students, can be very effective in increasing learning” (p. 190). A questionnaire was completed by the students in both associate and bachelor nursing degree programs. Both groups showed that their learning had improved either “very much or somewhat” (Adams and DeYoung, 1995, p. 190-191) because of the study groups.

#### **IV. Methods**

Nursing students in the second-degree accelerated program at Wagner College were asked to complete a questionnaire (Appendix A). A total of nine questions were included asking about the participant’s study preference and the average exam grade achieved during that semester. A range of exam grades and study preferences were used to compile the answers needed by the researcher. Data was collected and analyzed from the questionnaires and were given numerical and percentage values.

The sample size was 18 students. Because this was a quasi-experimental study, there was no randomization or control group. However, the manipulation included studying with peers. The preference of studying independently or with a group was the independent variable and the exam scores was the dependent variable.

Participants were given a brief explanation of the study and participated on a voluntary basis. All questionnaires were anonymous.

#### **V. Results**

A sample of 18 participants completed the questionnaire. Of those 18 participants, 56% were between the ages of 21 to 26, 6% were between the ages of 27 to 32, 22% were between the ages of 33 to 37 years, 6% were between 38 to 43 years, 6% were between 42 to 49, and 6% were 50 years or older were 6%. (See Table 1) .

Table 1: Ages of the Participants

<b>Age Groups</b>	<b>Frequency</b>	<b>Percentage</b>
<b>21 – 26</b>	10	56%
<b>27 – 32</b>	1	6%
<b>33 – 37</b>	4	22%
<b>38 – 43</b>	1	6%
<b>42 – 49</b>	1	6%
<b>50+</b>	1	6%
<b>Total</b>	n = 18	100%

Among the 18 participants, 11% were male and 89% were female.

During the first semester of nursing school, 67% of the participants preferred to study using both, independent and group study methods, 17% preferred independent studying and 17% preferred studying in groups. See Table 2. The average exam grade during the first semester was 89%. During the second semester of nursing school, 56% preferred both study methods, 33% preferred independent, and 11% studied in groups. See Table 3. The average exam grade for the second semester was also 89%. The summer sessions had participants studying more independently (61%) than in groups (6%). However 33% of the participants still used both methods of studying during the summer sessions. See Table 4. During this semester, the average exam grade was 91%.

Table 2: First Semester Study preference

First Semester	Frequency	Percentage
Independent	3	17%
Study Groups	3	17%
Both	12	67%

Table 3: Second Semester Study Preference

Second Semester	Frequency	Percentage
<b>Independent</b>	6	33%
<b>Study Groups</b>	2	11%
<b>Both</b>	10	56%

Table 4: Summer Session Study Preference

Summer Sessions	Frequency	Percentage
<b>Independent</b>	11	61%
<b>Study Groups</b>	1	6%
<b>Both</b>	6	33%

When comparing the three semesters, 8 participants used the same study method throughout, either independent, group or both. Of them, 6 said they did see an improvement of their grades while 2 said they did not (See Table 5). During the first semester, 7 participants used both study methods and then 4 switched to studying independently for the remainder of the two semesters and 3 of them did see an improvement of their grades, while 1 did not (See table 6). A total of 3 students, started the first and second semester off by studying independently and in groups. However, they studied independently during the final semester, with an improvement in their grades (See Table 7). One student that did not see an improvement of their grades started studying independently during the first semester but used both methods during the second and summer semesters (See Table 8). Two students, during their first semester, studied in groups only. Second semester, one student used both, group and independent, while the other student continued to study in groups only. However, their grades improved once they studied independently for their summer sessions (See Table 8). Exam grades ranged from 76 to 99 throughout the first semester of nursing school. During the second semester and summer sessions, exam grades ranged from 82 to 99. Of the 18 participants the 12 that do prefer to study independently only, at some point of the semester, 9 participants said they did see an improvement in their grades. The 4 participants that did use independent studying and did not see an improvement in their grades, saw a decrease in their grade or used only one method of studying throughout the three semesters therefore resulting in no change.

Table 5: Comparison of Study Methods Over Three Semesters  
(I-Independent Studying, S-Studying in Groups, B-Both Methods)

<b>First Semester Preference</b>	<b>Second Semester Preference</b>	<b>Summer Session Preference</b>	<b>Improvement in Grades (n=7)</b>
<b>B</b>	<b>I</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>I</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>I</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>I</b>	<b>I</b>	<b>N</b>
<b>B</b>	<b>B</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>I</b>	<b>Y</b>

Table 6: Use of the Same Study Method Throughout  
(I-Independent Studying, S-Studying in Groups, B-Both Methods)

<b>First Semester Preference</b>	<b>Second Semester Preference</b>	<b>Summer Session Preference</b>	<b>Improvement in Grades (n=8)</b>
<b>B</b>	<b>B</b>	<b>B</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>B</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>B</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>B</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>B</b>	<b>Y</b>
<b>S</b>	<b>S</b>	<b>S</b>	<b>Y</b>
<b>I</b>	<b>I</b>	<b>I</b>	<b>N</b>
<b>I</b>	<b>I</b>	<b>I</b>	<b>N</b>

Table 7: Improvement in Grades for Participants Initially Studying Both Ways and Switching to only Independently in Summer Session

<b>First Semester Preference</b>	<b>Second Semester Preference</b>	<b>Summer Session Preference</b>	<b>Improvement in Grades (n=3)</b>
<b>B</b>	<b>B</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>I</b>	<b>Y</b>
<b>B</b>	<b>B</b>	<b>I</b>	<b>Y</b>

Table 8: Improvement in Grades for Participants Initially Studying One Way and Switching to only Independently in Summer Session

<b>First Semester Preference</b>	<b>Second Semester Preference</b>	<b>Summer Session Preference</b>	<b>Improvement in Grades (n=3)</b>
<b>I</b>	<b>B</b>	<b>B</b>	<b>N</b>
<b>S</b>	<b>B</b>	<b>I</b>	<b>Y</b>
<b>S</b>	<b>S</b>	<b>I</b>	<b>Y</b>

## **VI. Discussion**

Although studying in groups along with studying independently was an indicated preference, most students favored studying alone. Based on the analysis of the collected data, students did see an improvement in their grades based on studying independently as compared to studying in groups. However, there were students who combined both, studying independently and in groups, who also saw an increase in their grades. The average exam grade was 91% when there were 11 students (61%) who preferred to study independently. On the other hand, when 3 to 6 students (17% to 33%) preferred independent studying, the average exam grade for the semester was 89%. There was a significant increase in the average exam grade among more students who chose to study independently rather than those who studied in groups or those who used both methods. The data that was collected and the results achieved by this research, supported the researcher's hypothesis that students who study independently do achieve higher exam grades compared to students who study in groups.

## **VII. Recommendations for Future Research**

The sample for this research included the second-degree nursing students. For future research, this study can be generalized to a larger group and to a different population (different program). By expanding the study's population, however, results may vary. Another possible recommendation could be the completion of a pre- and post-questionnaire by the participants. Pre-questionnaire is to be completed upon entrance into the nursing or similar program. Towards the end of the program, a post-questionnaire can be completed. This can help the researcher facilitate in collecting and analyzing the data to compare the results to better support his/her hypothesis.

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# **Section III: Critical Essays**

# A Phenomenological Examination of Truth in Faulkner's *The Sound and The Fury*

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*The Sound and The Fury* is many things at once: It is a meditation on time; it is a critique of the Old Order in the South; it is an examination of post-emancipation race relations; and it is a condemning inquiry into the nature of early 20<sup>th</sup> century gender roles. Perhaps most importantly, though, Faulkner's formidable novel serves as a revolutionary polemic against traditional conceptions of objective Truth. Faulkner rejects the presumption that there is one 'Truth' that is readily accessible to all individuals, organized according to principles of causality, and apprehensible via the intellect's rational faculty. Faulkner illustrates the utter impossibility of such a reality in a controlled, skillful manner throughout the text. He does so, chiefly, by effectively utilizing four unique perspectives, which move from first person, sensuous and nearly unintelligible, to calculated and rational, and finally to third person narration. Though this methodology severs the connections between rationality, causality, objectivity and Truth, Faulkner does not leave human beings in complete chaos. There may not be objective Truth, but individual perspective remains, and individual perspective has its own truth. By supplanting traditional objectivity with intersubjectivity (or shared experience), the structure of Faulkner's novel emphasizes the role of perspective in understanding the world. In this paper, I will argue that these notions of intersubjectivity and perspective are philosophically imperative in understanding the significance of the Compson brothers' most consistent shared experience: Their sister, Caddy.

Although it is clear that Faulkner was not acquainted with the phenomenological movement occurring in Germany during the early 20<sup>th</sup> century, it is nevertheless illuminating to employ the familiar backdrop of phenomenology in analyzing the content of *The Sound and the Fury*. Phenomenology's principal concern is to provide an alternative to rationalism and scholasticism. This alternative is one of method. Instead of moving from premise to conclusion logically based on a first axiom or assumption, one must study and *describe* the content of consciousness toward the end of achieving knowledge intersubjectively based on the content of consciousness, its intentionality and its possibilities. Faulkner appears to be similarly critical of principled rationalism (and its

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<sup>1</sup> Written under the direction of Dr. Peter Sharpe for EN342(W): *Growin'Up in Dixie*.

claims to absolute Truth...see Jason's section), and his solution, that of gathering perspectives, is equally methodological in nature.

Edmund Husserl, the father of phenomenology, posited what he called the "phenomenological epoché", which purports that objects of consciousness should be observed *as they appear to consciousness*, detached from any claims regarding the objective world (*The Paris Lectures* 48-49). Husserl argues that we must bracket what he calls the "natural standpoint." He intends by "natural standpoint" the idea that there is actually an existent world 'out there', which can be observed, studied and ultimately used as the fundamental basis for all other knowledge (*The Thesis of the Natural Standpoint and Its Suspension* 112).

He argues that to assert the positive existence of such a world presupposes "transcendental subjectivity." More basically, without our own unique, individual perspective, we would not have access to the so-called objective world at all. Each transcendental subjectivity, or consciousness, has its own *intentionality*, or meaning. Husserl writes:

Phenomenology always explains meanings, that is, intentionality...transcendental subjectivity is not a chaos of intentional experiences, but it is a unity through synthesis...an object...has reality for me in consciousness. But this reality is reality for me only as long as I believe that I can confirm it...Think about the tremendous importance of this remark...existence and essence have for us, in reality and truth, no other meaning than that of possible confirmation" (*Paris Lectures* 55-56).

With this passage, we continue to see the similarities between Faulkner's project in *The Sound and the Fury* and Husserl's project in creating a new epistemology. Each take on truth will initially force knowledge into solipsism (or the view that the only thing that we know to exist is our own mind, or that only perspective is veracious); however, the end of each is truth by way of intersubjectivity, or shared experience. That is to say, individual descriptive perspectives become synthesized and take on new, more profound meaning based on their cohesion with other descriptive perspectives.

The first three sections of *The Sound and The Fury* can ultimately be seen as a *phenomenology of perspectives*. That is not to say that the narrator in each section is engaged in perfect phenomenological description (there is no need to make such a strong claim here, considering Faulkner's lack of association with phenomenology proper). But, in each case, we get a picture of the world that varies based on the narrator's *intentionality*, or based on the meaning that the narrator places on these events.

Each of the first three parts of Faulkner's *The Sound and the Fury* serves as an independent account of, among other things, the Compson brothers' experience of their sister Caddy as a *phenomenon*—not, as a human being. That Caddy is arguably the central character of the novel, in spite of the fact that she lacks her own narrative section, is incredibly telling. Depriving Caddy of a narrative section allows Faulkner to present her solely as an object. Throughout the novel, Caddy is denied subjectivity, and hence (if we continue to follow the phenomenological interpretation that meaning is given by the intentionality of consciousness), she lacks any real meaning. She exists only as an object for her brothers, and her character is infused with *their* meanings.

For Benjy, she is a mother figure and represents order; for Quentin, she is an ideal and represents chastity; for Jason, she is a “bitch”, and represents the perils and disorder of financial and family life. As the novel progresses from Benjy's perspective to Jason's perspective, the descriptive content of each preceding section is “checked” by the current section. It is in this way that the reader gets a grasp on Caddy's character as an “emerging phenomenon.” This leaves the reader feeling that Caddy is all of these things, and none of them at once. Her lack of narrative section confirms this. Caddy *does* (presumably) have her own truth, in her reality, but neither readers, nor characters in the novel are privy to it. This keeps her at the level of a phenomenon, an object of consciousness throughout the novel.

We first see Caddy through the eyes of Benjy. By beginning the novel from this perspective, Faulkner throws readers into the uncomfortable position of receiving the vacillations of the mind of an idiot. That this section is presented neutrally (without disclaimer, endorsement or disparagement on the part of the author) further emphasizes the role of perspective in determining the truth. Benjy, given his mental capacity (which is characteristic of his unique intentionality), lacks the ability to judge or interpret anything at all. What readers experience in reading his section is a stream of consciousness that lacks syntactical form, notions of causality and the metaphysics of time. Benjy has only impressions (mostly sensuous impressions), and these impressions are unadulterated by attempts at interpretation on the part of the character. We come to understand what these events mean to Benjy based on his reactions to (intentionality toward) them. He wails, he moans and he hushes. He grasps at the fence. And watches them hitting. They call, “caddie!” His memories drift into his reality, and then he is *in them*, with his sister once again.

When Caddy smells like trees, or the golfers call for their caddie, readers get a picture of the free association that simple events elicit in Benjy's consciousness. This occurs in spite of the fact that he does not (can not) go through the process of interpreting

the events through his narration. Caddy offers Ben love and support, and her presence, even if only indicated by the word “caddie” on the golf course, can quite literally change his reality. His experiences are ordered, and, in fact, upset by her presence, attitude, and evolution as a character. Her innocence, demarcated by the smell of trees, represents a time that she could be there for him; whereas her promiscuity, characterized by her smelling of honeysuckle and perfume, points to her abandonment of him (as he sees it). Here we see Faulkner saying that it is not always (if it is ever) possible to leave judgments, or feelings, or sentiments out of our descriptions of experience. It roughly follows that if there is *one* Truth, human beings have no access to it—that we are in oblivion to it as a consequence of our own subjectivity; and so, epistemologically, practically, there is no *one* Truth.

Jason’s section is a foil to Benjy’s. Where in the latter, we see no clear structure or organizing concepts or judgment or interpretation, we see in the former all of the above. Where Benjy’s section lacks clear references to time and drifts from past to future whimsically, Jason’s section is dominated by clear, conventional (subject-predicate) syntax, is organized chronologically, and employs reasoned out judgments regarding nearly each event that transpires over the course of his narrative. The revolutionary thing about Faulkner’s treatment of this contrast is that traditionally, the latter would be favored as having a better claim to Truth. Not the case in *The Sound and the Fury*. Faulkner denies any necessary connection between rationality and Truth. This is once again due to the methodological suggestion that if Truth exists, human beings have no stake in it. Since each section is only a perspective, and each perspective has the same phenomenological value (unless contradicted in the consciousness that comprises it), then each section is equal. This means that with respect to Caddy, each perspective is equally valuable so long as the narrator of each section views his portrayal of her as a possibility.

And it is on this very point, that of reality (and truth) being contained within the possibility of reality (and truth), that the phenomenological reading of the novel becomes especially poignant. Quentin’s section is not as disorganized as Benjy’s, but it is not quite as well ordered as Jason’s. Extreme disorder in Benjy’s case allows his view of Caddy to remain a possibility, and hence, is for him a reality. His expectation of her to return is not ruled out in his view (despite having witnessed her marriage) simply because he still treats the calling of “caddie” from the adjacent golf course as indicative of his sister’s inevitable return to take care of him. In Jason’s case, his ability to rationalize and constantly assign *blame* to his nearest connection to Caddy (her daughter, Quentin), coupled with his physical distance from Caddy precludes any chance that his view of her as a “bitch” whose actions cheat him out of a job will be neutralized. Even when Caddy

does things (such as requesting to see her daughter) that are far from “bitchy”, Jason has the capacity to see the act from a perspective that maintains her status as a burden. His early perspective on his sister will continue to prevail because his rationality allows him to continually assert it as a possibility. Rationality, here, is an adversary of truth. In each of these extreme cases, perception is reality simply because of the way perception is affected by intentionality toward events, situations and attitudes. But what happens in the moderate case?

Quentin’s view of his sister cannot remain. It was pointed out earlier that Quentin sees in Caddy the physical manifestation of an ideal. He sees her as the embodiment of the chivalric code. He is also, apparently, the most intimate with her. From the moment that he learns of her having had sex with Dalton Ames, he attempts to reconcile his idealization of Caddy with the loss of her virginity. Ultimately, because his perspective does not (due in part to its moderateness and affectedness) allow him to look past the fact that his sister’s previous reality as the image of chastity has been contradicted. What was once, on the phenomenological view, a reality is no longer. This ultimately leads to despair on the part of Quentin, and, rather than accept the shame that is brought upon him by this new reality, he kills himself. He so strongly identifies himself with his worldview that he simply can’t live knowing that the person closest to him is in violation of it. He, of course, in his final act, goes against his own conception of honor. He abandons the code that so colored his intentionality with his suicide. It is no mistake that the act that violates his code must be terminal. If suicide is the manifestation of humanity’s ultimate contradiction, it is appropriate that it comes to Quentin as a direct result of the negation of the defining aspect of his intentionality.

One might expect the fourth section to assume Caddy’s perspective. It would seem to be the next logical step in Faulkner’s pattern. It is no mistake that this is not, however, the case. The fourth section, the latest chronologically, assumes the more typical omniscient third person perspective. This is Faulkner’s conclusion. It is his last word on the Compson family. He uses it to pull back the lens from the intimacy of first person narration, and in doing so, emphasizes the critical role of intentionality in assigning meaning. While the first three sections serve as a phenomenology of perspective, the third emphasizes the void created by a lack of individual perspective. This void is, of course, to be filled by the reader’s own intentionality, by his or her own consciousness, as he or she is left to interpret the meaning of the carriage’s wrong turn at the stature of the confederate soldier. We are to, essentially, fill this void: We must, in completing *The Sound and The Fury*, assign meaning (or deny meaning) to events, facts and conversations presented to *our own consciousness*. We must assign or deny meaning

to Disley's violation of Negro convention in bringing Benjy to the Easter service. We must assign or deny meaning to Benjy's complacency during the sermon. We *must* assign or deny meaning to each of these events, otherwise they signify *nothing*.

Obviously, Faulkner was not a phenomenologist. Nevertheless, there are several fascinating and illuminating parallels between Faulkner's creative methodology and the epistemological methodology posited by Husserl. Both place a strong emphasis on the role of perspective or intentionality in infusing events with meaning. Both positions stem from a criticism of rationalism and Truth. Both appear to posit a synthesis of detailed perspectives as the only solution to the problems posed by suspension of any belief regarding the objective world. This is not explicit in Faulkner's case, but it seems to be a suspension rather than a rejection based on the shift in point of view in the fourth section, the conclusion of the novel, which does not assume the perspective of an individual, but is instead told in third person by an omniscient narrator. All of this leaves the reader with the impression that while life may be, *The Sound and the Fury* is certainly not a tale told by an idiot, and that it almost certainly signifies *something*.

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# Revisiting Descartes: The Interaction between Mind and Body in Meditation VI

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Descartes is a major thinker in philosophy; his work in *Meditations on First Philosophy* has influenced philosophers doing metaphysics after him. His essential axiom, the cogito axiom: “I think therefore I am”, has permeated the mindset of even the everyday person. Descartes solidifies the dualism between mind and body in *Meditations*, conceiving himself as a mind precariously attached to a body. Most readers who analyze *Meditations* focus on the definitions given by Descartes; they conclude that he creates a human being that is a composite; the mind and body are taken to be two totally different substances, and therefore can never interact with one another. On the surface, this reading seems to be appropriate; indeed, this dilemma has ignited considerable debate over the suggested dualism. Meditation VI is the conclusion to Descartes’ *Meditations*, and is not only a summary of his ideas but a culmination and complex account of the mind-body relationship.

This paper intends to show that readers and commentators of Descartes’ thought have overlooked his message. True enough, he maintains that the mind and body are two separate and distinct substances. Nevertheless, he also maintains that the different faculties attributed to the mind and body revolves the problem of their interaction, and this combination in function relates them to one another in the total process of thought, commingled together in an individual person.

## Part I: The Traditional Reading of *Meditations*

In order to understand Descartes’ central thesis, mainly that the mind is distinct from the body and can exist without it, the process by which he came to such a conclusion must be examined. In Meditation I, Descartes employs the method of doubt in order to ascertain beliefs in which he has absolute certainty. He evaluates the ways in which he comes to know things in the world utilizing hyperbolic doubt, and if any part of the idea can be questioned, it is “thrown out”, no longer able to be trusted as a valid source of information. Descartes states, “Because undermining the foundation will cause whatever has been built upon them to crumble of its own accord, I will attack

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<sup>1</sup> A Senior Honors Thesis written under the direction of Dr. John Danisi.



straightaway those principles which supported everything I once believed” (MN 18-19). He suspects his belief in things, first throwing out those beliefs based on sense perception, then setting aside all conclusions of the sciences that study physical things that he is not certain are real, and finally proposing that hypothetically he could be deceived by an evil demon. Descartes is famous for his use of the experience of dreaming to explain how sensations and the seemingly real laws of nature can be doubted and uncertain:

Nevertheless, it surely must be admitted that the things seen during slumber are, as it were, like painted things, which could only have been produced in the likeness of true things, and that therefore at least these general things—eyes, head, hands, and the whole body—are not imaginary things, but are true and exist...there is fixed in my mind a certain opinion of long standing, namely that there exists a God who is able to do anything and by who I, such as I am, have been created. *How do I know that he did not bring it about there is no earth at all, no heavens, no extended thing, no shape, no size, no place, and yet bringing it about that all these things appear to me to exist precisely as they do now?* ... Eventually I am forced to admit that there is nothing among the things that I once believed to be true which it is not permissible to doubt (MN 20-22, emphasis added).

Descartes finds that it is increasingly difficult to discover if any of his beliefs are true, though he has found many that could be false. His dream argument is carried forward throughout his meditation, yet his “customary way of living”, that is, believing what his senses tell him and all the other ideas he presupposed, remain the primary perception of reality. Descartes reaches the conclusion that whether he is thinking or doubting, his mind must exist to carry out those activities, mainly of doubting and perceiving. He is therefore absolutely certain of the existence of his mind.

In Meditation II, Descartes begins to address the nature of his mind, and the power that the mind has insofar as he is a totally thinking thing or substance. He attacks this problem by evaluating “who” and “what” he is; his existence, as a thing that thinks, is wrapped up in having a perceiving mind and in having a body that interacts with the

world. Descartes writes: “What then did I use to think I was? A man, of course. But what is a man? ... I had a face, hands, arms, and this entire mechanism of bodily members: the very same as are discerned in a corpse, and which I referred to by the name ‘body’” (MN 26). The body, insofar as it is connected to the world and other things which are doubtable, must now be doubted as well.

The belief in the existence of his body must be “thrown out” by Descartes’; the one thing or substance that remains is the existence of his mind. Metaphysically, the only thing that exists is his mind; epistemologically, he can only know that his mind exists, and nothing else. The above quote continues:

What about thinking? Here I make my discovery: thought exists; it alone cannot be separated from me. I am; I exist—this is certain. But for how long? For as long as I am thinking; *for perhaps it could also come to pass that if I were to cease all thinking I would then utterly cease to exist.* I am therefore precisely nothing but a thinking thing; that is, a mind, or intellect, or understanding, or reason—words of whose meanings I was previously ignorant. (MN 27, emphasis added).

Here is the crucial place where most commentators conclude that Descartes sets up an unbreachable divide between mind and body; by putting all things as thoughts *in* the mind, the external world is eliminated, as is the body and other physical phenomena; that is, Descartes can exist as a thinking thing, which exists independently of the body. Descartes will base the rest of his metaphysics off of the cogito axiom.

Those bodies which we believe to be most distinct, those things we touch and see, are “something extended, flexible, and mutable” (MN 31). These things *manifest* themselves to the mind. How this is understood is through the faculties of the mind, not through imagination, but through judgment or intellect. “For since I now know that even bodies are not, properly speaking, perceived by the sense or by the faculty of imagination, but by the intellect alone, and that they are not perceived through their being touched or seen, but only through their being understood, I manifestly know that nothing can be perceived more easily and more evidently than my own mind” (MN 34). Typically, these ideas in Meditation II lead commentators to conclude that it is the mind that is the sole existent; all of reality, which Descartes discusses later, is in it, and the

truth of the world can only be discovered through it. This paper will not disagree with Descartes' starting point, the cogito axiom.

The focus is rather on the nature of those ideas in Descartes' mind and the specific faculties that Descartes assigns to the body and mind separately, and the way in which those functions together bring forth a composite human character.

Ordinarily, Meditation III is interpreted based on how Descartes' expresses his proof for the existence of God. Commentators usually focus on that argument in their discussions. This paper will not discuss the details of that proof. Rather, it will discuss the way in which Descartes defines ideas and the purposes he assigns to them.

Descartes holds that the mind is made up of ideas; they arise in three different ways, which he classifies in the meditation.

Some of these thoughts are like images of things; to these alone does the word 'idea' properly apply, as when I think of a man, or a chimera, or the sky, or an angel, or God. Again there are other thoughts that take different forms: for example, when I will, or fear, or affirm, or deny, there is always some *thing* that I grasp as the subject of my thought, yet I embrace in my thought something more than the likeness of that thing. Some of these thoughts are called volitions or affects, while others are called judgments (MN 37, emphasis added).

These ideas differ, and Descartes explains the nature of all of them. The first are innate ideas; ideas built into the mind. "For I understand what a thing is, what truth is, what thought is, and I appear to have derived this exclusively from my very own nature" (MN 38). This includes the cogito axiom. The second are factitious ideas, which are produced by his mind, such as the idea of a unicorn, with no verifiable proof of existence but an idea in his mind nonetheless. The third are adventitious ideas, which come from outside of him, such as the idea of a chair.

Descartes gives an example of this through the idea of the sun, which displays itself as two distinct ideas. Descartes writes: "One idea is drawn, as it were, from the senses... By means of this idea the sun appears to me to be quite small. But there is another idea, one derived from astronomical reasoning, that is, it is elicited from certain notions that are innate to me, or else is fashioned by me in some other way. Through this idea the sun is shown to be several times larger than the earth. Both ideas surely cannot

resemble the same sun existing outside me” (MN 39). Here Descartes shows both the inaccuracy of the senses and the ability for the mind to reveal the truth itself of these objects. The sun appears by the senses to be small and to move across the sky, but there is another idea, derived from reason, in which the earth rotates around the sun; it only appears to be otherwise because of the distance and movement of the earth in comparison.

Descartes concludes that all these ideas, insofar as he can think of them, exist, and he notes that every idea has two kinds of reality. The first is formal/actual reality, wherein all ideas actually exist and have real and positive existence in his mind. The second is representative/objective reality, where every idea has content and is a picture or representation of something else. Descartes concludes that his mind may be the cause of the actual *and* representative reality of his ideas; he could be the producer of his ideas. Descartes sustains this notion of being for any particular thing in his writing:

The very nature of an idea is such that of itself it needs no formal reality other than what it borrows from my thought, of which it is a mode. But that a particular idea contains this as opposed to that objective reality is surely owing to some cause in which there is at least as much formal reality as there is objective reality contained in the idea. *For if we assume that something is found in the idea that was not in its cause, then the idea gets that something from nothing. Yet as imperfect a mode of being as this is by which a thing exists in the intellect objectively through an idea, nevertheless it is plainly not nothing; hence it cannot get its being from nothing* (MN 41-42, emphasis added).

All his ideas are contained within his consciousness, and hence are caused by his mind. Due to the previously examined arguments, most thinkers conclude that Descartes describes the mind and body as two separate and distinct substances, and as such they also conclude that mind and body cannot interact with one another. Specifically, the mind is a spiritual thing, non-extended, not in space or subject to the laws of physics; the body is physical, extended in space and subject to the laws of physics. Given these properties, then they cannot be intimately conjoined, forming one whole person that experiences both. Most commentators simply conclude that Descartes is unable to remedy this

dualism, and many philosophers after him wrote their metaphysical theories and critiques of this perceived flaw in his argument.

This paper will argue that the traditional view is mistaken. Through the different faculties of the mind and body, they inadvertently work together to form a whole person.

### Part II: Revisiting Meditation VI

In Meditation VI, Descartes adds to the definition of mind and body; the real distinction between them is the difference in their functions. The mind's primary function is understanding whereas the body's is imagination. Descartes does not articulate in detail, but the mind and body must *turn towards* one another in order to complete their functions, and together, the unique human occupation of thinking is completed. At the beginning of the meditation, Descartes wonders whether material things exist, "since I clearly and distinctly *perceive* them... Moreover, from the faculty of imagination, which I notice I use while dealing with material things, it seems to follow that they exist. For to anyone paying very close attention to what imagination is, *it appears to be simply a certain application of the knowing faculty to a body intimately present to it, and which therefore exists*" (MN 72, emphasis added). The mind and body have a peculiar interconnectivity which is fundamental to their being, and Descartes brings this out, incompletely, in his work in Meditation VI. What Descartes hints at here is usually overlooked, but contains a significant discovery within. Now we will turn to the text itself and expose a more comprehensive description of the qualities of body and mind.

In Meditation VI, Descartes moves into a clarification and discussion of his existence as mind. Material things exist insofar that they are known through the application of imagination tied to the body that is present to the thing in question. Descartes continues, describing the difference between imagination and pure intellection and the way in which he "understands" his ideas. He uses the example of triangle. He "understands" a triangle to be a figure, with three lines, three angles equaling 180 degrees, etc., and he can, with his mind's eye, imagine how this would look. Similarly, it is possible for Descartes to "understand" a chiliagon as a figure with 1,000 sides, yet he cannot imagine what it would look like with his mind's eye in the same way as he could a triangle. An imagined figure does not help in knowing the properties of a chiliagon, but it does help in knowing the properties of a triangle. Descartes writes: "I am manifestly aware that I am in need of a peculiar sort of effort on the part of the mind in order to imagine, one that I do not employ in order to understand. This new effort on the part of the mind clearly shows the difference between imagination and pure intellection" (MN

72-73). The faculty of imagination is unique to his mind, which carries with it a “new effort” of mind. It is also in the mind that one is able to understand an idea.

Descartes proposes that he needs a certain sort of effort from the mind to imagine that he does not need to understand. The power of imagining is not rooted in Descartes’ mind, and as such, it is not innate to the mind; the power of understanding is anchored in the mind and is a part of its essence:

The power of imagining depends upon something distinct from me. And I readily understand that, were a body to exist to which a mind is so joined that it may apply itself in order, as it were, to look at it any time it wishes, it could happen that it is by means of this very body that I imagine corporeal things. As a result, this mode of thinking may differ from pure intellection only in the sense that the mind, when it understands, in a sense turns toward itself and looks at one of the ideas that are in it; whereas when it imagines, it turns toward the body, and intuits in the body something that conforms to an idea either understood by the mind or perceived by sense. To be sure, I easily understand that the imagination can be actualized in this way, provided a body does exist (MN 73).

What Descartes is pointing to here is that there is a high probability that a body exists and that the power of imagining is rooted in the body. But first he reiterates previous thoughts from Meditations I-V in order to be thorough and certain in Meditation VI. It is this Meditation that dives deeper into the relationship between the body and the mind, and Descartes skillfully weaves together the two things.

At first, Descartes perceived himself as having a body with many parts, which was found among other bodies by which his body could be affected. He could sense what would bring pleasure or pain, and within it sense appetites, bodily tendencies, other bodies, and he could distinguish between them. He concludes that it is impossible that these ideas of sensible things come from his mind. They are too vivid, and they are more distinct and deliberate than knowingly formed ideas. The faculty of reason works within Descartes’ mind directly after the faculty of the senses; the body is possessed by him and he cannot be separated from it the way he separates from other bodies. Descartes reports pain and pleasure in body parts, but not in external bodies, he gets a “peculiar twitching

in [his] stomach, which [he] call[s] hunger” (MN 74-75). Descartes maintains that nature has taught him in this way *prior to the method of doubt*.<sup>2</sup> He recalls that the senses deceive him in many different ways, and that the only thing he knows to be *absolutely true* is that he is a thinking thing.

Descartes repeats the cogito axiom and his justifications for his reasoning that he is fundamentally a thinking thing, regardless of those things taught by nature prior to the method of doubt. He writes:

“on the one hand I have a clear and distinct idea of myself, insofar as I am merely a thinking thing and not an extended thing, and because on the other hand I have a distinct idea of a body, insofar as it is merely an extended thing and not a thinking thing, *it is certain that I am really distinct from my body and can exist without it*” (MN 78, emphasis added).

While this appears to once again conclude what traditionally is gathered from the first five meditations, Descartes’ continuation into a deeper discussion of the *faculties* of mind and body set Meditation VI apart, leading to a resolution of the problem of interaction, a resolution that is normally overlooked by readers of the *Meditations*.

Descartes holds that the faculties of imagining and sensing are located in the mind. But this faculty is a passive faculty, a faculty which receives and knows the ideas of sensible things. But the power—the active faculty—to produce the ideas of sensible things is not in Descartes’ mind; it exists in a corporeal or extended substance, namely, the body. Descartes sets forth these faculties:

*Now there clearly is in me a passive faculty of ending, that is, a faculty for receiving and knowing the ideas of sensible things; but I could not use it unless there also existed, either in me or something else, a certain active faculty of producing or bringing about these ideas.* But this faculty surely cannot be in me, since it clearly presupposes no act of understanding, and these ideas are produced without my cooperation and often even against my will. Therefore the only alternative is that it is in some

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<sup>2</sup> See MN 81, quoted on page 11.

substance different from me, containing either formally or eminently all the reality that exists objectively in the ideas produced by that faculty... Consequently corporeal things exist (MN 79-80, emphasis added).

Descartes knows that God is not a deceiver from Meditation III, and God has given Descartes a “great inclination to believe that these ideas issue from corporeal things” (MN 80). He further states, “I understand nothing other than God himself or the ordered network of created things which was instituted by God. By my own particular nature I understand nothing other than the combination of all the things bestowed upon me by God” (MN 80-81). Descartes adds that these ideas come upon his mind suddenly and unexpectedly. He has no control over them via his will. He admits that he may not be right or know truly the nature of his being, but his knowledge is limited by what God has given him and to what he “clearly and distinctly understands”, which is the truth. Hence he must proceed from this viewpoint.

One of the strongest and most impactful ways that Descartes gains knowledge is through sense perception, though the method of doubt has cast a dark shadow on the validity of these beliefs. Nature teaches Descartes that he has a body, and in this he cannot doubt that there is some truth. Descartes states that he is not merely present to his body, but connected intimately to the body; the mind and the body constitute one single thing, but remain separate substances.

By means of these sensations of pain, hunger, thirst and so on, nature also teaches not merely that I am present to my body in the way a sailor is present in a ship, but that *I am most tightly joined and, so to speak, commingled with it, so much so that I and the body constitute one single thing*. For if this were not the case, then I, who am only a thinking thing, would not sense pain when the body is injured; rather, I would perceive the wound by means of the pure intellect, just as a sailor perceives by sight whether anything in his ship is broken. And when the body is in need of food or drink, I should understand this explicitly, instead of having confused sensations of hunger and thirst. *For clearly these sensations of*



*thirst, hunger, pain and so on are nothing but certain confused modes of thinking arising from the union, and, as it were, the commingling of the mind with the body* (MN 81, emphasis added).

Despite Descartes' revelations from Meditation I—in which he throws out his ideas of sensible things based upon sense perception—he recognizes that there is still some truth to those ideas. There is legitimacy to bodily feelings insofar as the sensations of the body are connected to the interpretation of them in the mind. Sensations are, therefore, modes of *thinking* of the composite of mind and body, which makes up Descartes, the human being. Nature is defined as everything bestowed on Descartes by God, not just those things in his mind (perception) or body (gravity). Descartes knows, through sensation, to avoid things that cause pain and pursue things that bring pleasure. Nature does not teach Descartes to *conclude* anything; the intellect of the mind, for example, must be involved to connect the sensation of pain to the fire before you and lead to an understanding of burning. It is here that Descartes brings together the two seemingly opposite substances of mind and body; together, they form the totality of thought.

Descartes continues, noting that nature is not omniscient, but rather that man is limited. Descartes utilizes the method of doubt to understand why a man would drink a cup filled with poison when such a thing would bring him harm. He concludes that a man's body is a mechanism, similar to that of a clock. In illness or in health, the dryness of the throat moves a man to drink; a body will not deviate from its nature just as a clock will continue to give a set of numbers as "time", even if it is incorrect.

Accordingly, it is this nature that teaches me to avoid things that produce a sensation of pain and to pursue things that produce a sensation of pleasure, and the like. But it does not appear that nature teaches us to *conclude anything*, besides these things, from these sense perceptions unless the intellect has first conducted its own inquiry regarding things external to us. For it seems to belong exclusively to the mind, and not to the composite of the mind and body, to know the truth in these matters... admittedly I use the perceptions of the senses (*which are given by nature only for signifying to the mind what things are useful or harmful to the composite of which it is a part*) as

reliable rules for immediately discerning what is the essence of bodies located outside us (MN 83-84, emphasis added).

Nature teaches Descartes that his mind is tightly conjoined to his body, to constitute one single thing. But Descartes tells us that no conclusions can be drawn from nature's teachings.

Descartes continues to elaborate on the "composite of mind and body", which constitutes him as a man. The mind is not immediately affected by all parts of the body, but just the brain, which relays the diverse interworkings of the body to the mind as one complete thing. Descartes notes that whenever a part of the body is moved by another part, it is moved in the same manner as any part in between (such as the pain in the foot sent to the brain through nerves in the leg, torso and neck). Any motion in the body produces just one sensation which is conducive to the maintenance of a healthy man; all sensations from nature "bear witness to God's power and goodness" (MN 88). What's more, "all the senses set forth what is true more frequently than what is false *regarding what concerns the welfare of the body*" (MN 89, emphasis added). The body has motion, which is converted into sensation, which is, in turn, understood by the mind through the use of memory and intellect, which, in turn, connects the current happenings with the past ones and examines the causes of error within the sense. It is in this way that sensation is instrumental for the human being—i.e. being *subjected* to life leads the body and compels it, yet does not garner truth. Truth is obtained through the interpretation of such phenomena by the mind alone; the mind is a part of the interworking of the mechanism of the body, and for Descartes is the most important and influential part of the human being. The body and the mind join together as one amalgamated thing, completing the human experience, understanding life as it is endured. More than this, these two separate substances are connected through their dual inhabitation in the world and dynamic relationship with one another in human beings.

Descartes points out that the difference between dreaming and waking states is that dreams are never joined by memory with other actions of life. This seems at odds with his dream argument from Meditation I, but Descartes takes that line of reasoning one step further, dissecting dreams and finding how we know what is in "dream life" and what is in "real life". Descartes connects his perception without interruption to the whole of the rest of his life, which happened while he was awake. Descartes concludes that "we must confess that the life of a man is apt to commit errors regarding particular things, and we must acknowledge the infirmity of our nature" (MN 90).

Truly, the one thing that is absolutely certain is that we are thinking things. We exist as minds, and while our body may exist as an extended thing that interacts with mind and has sensations, it is utterly different from the substance that is the mind. Yet this difference in substances allows for interaction between mind and body. Descartes proposes a pseudo-solution insofar as the body transmits sensation through the nervous system to the brain, where the mind could be “housed”, which leads to thoughtful interpretation of the bodily sensation. The mind-body dualism can be overcome through bodily mechanisms tied to the brain and the mind’s intellect, which interprets the phenomena. Here the mind and body interact: together but separate, opposite but necessary for the other to exist. The composite of mind and body make up a human being—as one.

Descartes states firmly that man is a thinking thing, and though he offers an explanation of the interaction between the mind and body, I am not completely convinced the mind-body problem is overcome in his philosophy. He makes the mind and body totally separate substances, and their means of communication still lacks a fundamental key; where *in* the brain are the electronic impulses of the nerves translated into a form the mind can understand and make use of? Or, *at what point* does the brain/body transfer over to the mind, and how do we really know when that happens? How do we know it isn’t just a bodily mechanism to think we have a mind, or a mind-created thought that we have a body and it interacts with a body-filled world? These questions are not answered in Descartes’ Meditation VI, but an intriguing and compelling notion of connectivity is brought forth that makes way for a new interpretation, and possible solution, to the issue of interaction in the mind-body problem. Though it is perhaps not indubitable to Descartes’ consciousness through the method of doubt, the mind and body do indeed relate to one another, and it is through their “commingling” that the nature of human beings is more fully understood in *Meditations*.

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# Hagar and Ishmael in the Holy Quran and the Holy Bible: A Cause of Variance in Islam and Christianity

Bareah Alam (Chemistry)<sup>1</sup>

Hagar is a well-known female figure in the Book of Genesis from the Old Testament. Hagar is best known as the mother of Ishmael, the son of Abraham. While this relationship to Abraham is uncontested in Islam, Hagar's role in Genesis is surprisingly different than her role in the Islamic tradition. Hagar, called Hazrat Hajra in Islam, is best known for the story of her call to God in the desert, where her baby Ishmael was parched from thirst. Hagar is respected to such a great extent in Islam – her and Abraham's son Ishmael are the basis for the second religious holiday for Muslims, Eid ul Adha. The Christian tradition regards Isaac as the "lamb" Abraham was willing to sacrifice, whereas the Muslim faith believes that it was Abraham's other son, Ishmael. Thus, the question arises: how could two religions that arose from the same basic traditions diverge to such an extent when recounting a crucial historical story? Despite their differences in the narration of the account of Hagar and Abraham's sacrifice, the Bible and the Holy Quran still have numerous similarities that have stemmed from the same original tradition.

Much debate surrounds Hagar's origin; scholars question whether she was an Egyptian princess given as a slave to Abraham, and whether the text of the Bible says she is in fact of Egyptian nationality. Hagar is not a native Israelite, because she is a servant of Sarah's, whom Sarah gives to Abraham so that he may produce an heir with her. Sharon Pace Jeansonne refers to Hagar as a "foreigner in the land of Canaan" (Jeansonne 43) in her book, *The Women of Genesis*. Jeansonne further informs readers about Hagar, "Identified as an Egyptian servant, the narrator suggests that Abram obtained Hagar when he and Sarai were in Egypt." (Jeansonne 44). In the Quranic commentary on Hagar's origin it is stated, "...Hagar, Ishmael's mother, belonged to the royal family of Egypt and was no handmaid..." (*The Holy Quran*, 37:103). Thus, even the Islamic interpretation views Hagar as an Egyptian princess, but makes no mention of her as the maidservant of Sarah.

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<sup>1</sup> Written under the direction of Dr. Joseph D. Smith, Jr. for RE 220: *Forbidden Knowledge: The Power of Myth in Genesis*.

The etymology of Hagar's name may offer some insight into her true origins. The origins of Hagar's name are traced to ancient Arabia, where the root of Hagar is *hgr* in the Palmyrene and Safaitic languages, and *hgrw* in Nabatean. The name "Hagar" itself was a "female personal name," as indicated in *The Anchor Bible Dictionary* (Freedman et al. 18). In addition, the authors note that the name Hagar should not be confused with the name *Hâjir* for males, which is derived from Arabic, Nabatean, and Minaean. According to the authors of *The Anchor Bible Dictionary*, Hagar's name can be "explained by Sabeian and Ethiopic *hagar*, 'town, city' ... [and] it is unlikely that there is any connection with *hajara*, 'to emigrate'" in modern Arabic (Freedman et al. 18-19). This last piece of information is quite interesting with respect to the belief that Hagar was an Egyptian slave given to Abraham. Abraham lived in Ur, and it would in essence be an emigration from Egypt to Ur, but Hagar's name has no connection with the word "hajara," once again leaving the reader uncertain about Hagar's origin. In fact, *The Anchor Bible Dictionary* reveals that Hagar's nationality was a literary device the authors used to connect two stories from Genesis 12:10-20 and Genesis 16 (Freedman et al. 18).

The J and E sources, and to some extent the P source, have preserved accounts of Hagar's life and her role in the Old Testament (Buttrick et al. 508). Hagar's role in Genesis comes into play in chapters 16, 21, and 25, where her relationship to Abraham and Sarah is revealed in the stories written by the J and E sources. *The Interpreter's Dictionary of the Bible* refers to Hagar as merely Sarah's Egyptian handmaid who was given as a concubine to Abraham by Sarah herself (Buttrick et al. 508). The first story in Genesis 16:1-16, reaffirms the notion that Hagar is indeed Sarah's Egyptian maid, whom Sarah gives to Abraham so he can have children with her, since Sarah is barren. This is customary in the Nuzi texts, and also in Genesis with Rachel and Leah in Genesis 30:3, 9. As the narration reveals, Hagar becomes arrogant while she is pregnant, angering Sarah, who seeks Abraham's permission to treat Hagar harshly. Hagar then flees to the Wilderness of Shur, where an angel of Yahweh tells her that she will give birth to a son whose name will be Ishmael; the name Ishmael signifies the fact that God had heard Hagar's suffering (Buttrick et al. 508).

Hagar's other contributions to the history of Genesis are her second story in Genesis 21:8-21 and her implications for the New Testament. In the second story, Sarah saw Isaac and Ishmael playing and feared that Ishmael might become Abraham's heir, along with Isaac. In turn, she begged Abraham to expel the mother and son, and Hagar ran away to the Wilderness of Beer-sheba. In this dry region, Hagar believed her son would die of thirst, but God's angel showed her a well to quench Ishmael's thirst (Buttrick et al. 508). On the other hand, Hagar contributes to Biblical history in Paul's

writings in the New Testament, where Paul uses Hagar and Ishmael to represent the slavery of the old covenant, as opposed to the new covenant's freedom symbolized by the son of the free Sarah, Isaac. Therefore, Hagar may not be as well-known a Biblical female figure as Eve, but her role in the Book of Genesis is certainly noteworthy.

Hagar's main contributions to the history of Genesis were that she fathered a child with Abraham. In addition to bearing Abraham a son, Hagar is the ancestral mother of the Bedouin peoples to the south of Palestine (Buttrick et al. 508-509). Although Hagar is regarded as a mere concubine, she could have been important enough to represent an entire tribal confederacy, such as Ishmael represented the Ishmaelites; however, Hagar had no association with the Hagrites (Freedman et al. 19), and is thus considered an inferior female figure. This role in Genesis is in stark contrast to Hagar's role in the Holy Quran, which reveals a different perspective of the events during the time of Abraham.

Even in the Bible, it is mentioned that Hagar's son would give rise to a great nation; perhaps this foreshadows the dawn of the Islamic people that will trace their lineage through Ishmael and Abraham. After Sarah mistreats Hagar, she runs away to the wilderness in Shur, where the angel of God appears to her. The writers of the Book of Genesis retell this account: "The angel of the Lord also said to her [Hagar], 'I will so greatly multiply your offspring that they cannot be counted for multitude.'" (*Holy Bible*, Gn. 16.10). Hagar is also given some great importance in Genesis because she is the first person to name God. In Genesis, it is written, "So she [Hagar] named the Lord who spoke to her, 'You are El-roi'; for she said, 'Have I really seen God and remained alive after seeing him?'" (*Holy Bible*, Gn. 16.13). In this way, Hagar is set apart from other Biblical figures, but her respect is taken to another level in Islam.

In Islam, the story of Abraham, Hagar, and Ishmael is the basis for the second major holiday, Eid ul Adha. This holiday commemorates Abraham's willingness to sacrifice his only son, showing his trust in God and his submission to the Will of God. This particular story is a point of divergence for the Muslim and Christian faiths. Seyyed Hossein Nasr, a Muslim participant in Bill Moyers's compilation, relates:

The Qur'an does not mention the name of the son of Abraham offered for sacrifice, so early in Islamic history there was debate as to whether the son was Isaac or Ishmael. Later, Qur'anic commentators and religious authorities in general gravitated toward Ishmael...Islam sees Isaac and Ishmael as ...brought into this world in a special manner to fulfill God's purpose. So, whichever son it was, he was willing to give himself in sacrifice. (Moyers 223).

This excerpt from Moyers’s work sheds light upon some fundamental Islamic beliefs regarding the story of Abraham’s call to sacrifice his son. In Surah Al-Saffat, chapter 37 of the Holy Quran, Allah reveals, “So We gave him the glad tidings of a forbearing son. And when he was old enough to run along with him, he said, ‘O my dear son, I have seen in a dream that I offer thee in sacrifice... That, surely, was a manifest trial.’” (*The Holy Quran*, 37:103, 107). Although the son is not mentioned specifically by name in these verses of the Quran, the Quran declares that it was Ishmael because Ishmael was thirteen years older than Isaac, and therefore the only son of Abraham’s at the time.

The Biblical account regarding this matter, however, begs to differ. In Genesis it is written that God told Abraham, “‘Take your son, your only son Isaac, whom you love...and offer him there as a burnt offering...’” (*Holy Bible*, Gn. 22.2). Here, it is clearly stated that Isaac is the son that is to be offered as a sacrifice, but the narrator fails to remember that Isaac is not the only son of Abraham. In fact, Isaac was born thirteen or fourteen years after Ishmael. Regarding this matter, the Bible clearly states, “Abram was eighty-six years old when Hagar bore him Ishmael.” (*Holy Bible*, Gn. 16.16), and “Abraham was a hundred years old when his son Isaac was born to him.” (*Holy Bible*, Gn. 21.5). The Islamic viewpoint uses this point to justify the belief that Ishmael was the son Abraham was willing to sacrifice. According to Quranic commentary written by Malik Ghulam Farid:

The Bible contradicts itself in this respect. According to it, Abraham was commanded to offer his *only son* for sacrifice, but Isaac was at no time his only son. Ishmael was senior to Isaac by 13 years and for these many years was Abraham’s only son, and, being also his first born, was doubly dear to him.

The author comments on the Quran and Bible’s variance regarding which son was supposed to be sacrificed by Abraham. The Islamic perspective reasons that since God commanded Abraham to sacrifice his only son, it had to be Ishmael, since Abraham had two equally important sons that are both recognized in the Bible. In addition, *The New Interpreter’s Bible* states, “...Hagar and Ishmael become more prominent figures in the story of Abraham, receiving almost as much attention as Isaac.” (Birch et al. 487-488). This statement proves that both sons were equal, but the Quranic commentary further states that some Christian evangelists consider Isaac to be more important because his birth was promised to Abraham and Sarah.

Aside from this divergence, Hagar has a great place in Islam. When Hagar runs away to the desert, God addresses her. Trevor Dennis comments on this account in his book, *Sarah Laughed*. The author writes, “For the first time someone other than the

narrator has used Hagar's name" (Dennis 66). This excerpt suggests that perhaps even the Bible recognized Hagar's unique status that the Islamic tradition has taken into account and from which Islam has based its beliefs. Dennis further writes, "Thus only two women in the entire Bible receive annunciations from God himself, Hagar and the unnamed wife of Manoah." (Dennis 69). Furthermore, in the Biblical account, Sarah is portrayed as jealous of Hagar also, whereas the Quran does not mention such feelings because Sarah was the one who suggested that Abraham take Hagar as a wife. These differences are also coupled with a substitution "of Moriah for Marwah" in the Bible, whereas the Arabic text of the Quran refers to the area as Marwah (*The Holy Quran*, 37:103). The location of Marwah holds great importance in Islam.

The story of Abraham, Hagar, and Ishmael, called Hazrat Ibrahim <sup>AS,2</sup>, Hazrat Hajra, and Hazrat Ismael <sup>AS</sup>, respectively, in Islam, is a common story told to younger children as a reminder to them to strengthen their bond with Allah (God). An Islamic *Religious Knowledge Workbook* recounts this tale, stating that Allah told Hazrat Ibrahim <sup>AS</sup> to leave Hazrat Ismael <sup>AS</sup> and Hazrat Hajra in the desert in Arabia, along with some food and water. When the food and water ran out, Baby Ismael started crying, so Hazrat Hajra despairingly searched for some water and food for her child. While searching for water, Hazrat Hajra ran "back and forth between the hills of Safa and Marwa(h)...seven times. While Hazrat Ismael <sup>AS</sup> was crying, he was hitting his heel on the ground and a spring of water started gushing out of the ground." (Lajna Imaillah, U.S.A. 76). The symbolic running between the hills of Safa and Marwah that is mentioned here is commemorated by Muslims every year during the ten days leading up to the second Eid. In fact, one of the ceremonies of Hajj is called Sa'ee, where Muslims walk between Safa and Marwah, "re-enacting the search of Hagar, wife of Prophet Abraham, for water for her infant son Ishmael," (Chaudhry 28).

In addition, Muslims read in the Holy Quran that God will send trials to His people, to test their faith. This same belief is applied to Abraham's trial, where God tests Abraham's obedience and ability to submit to the Will of God. God asks Abraham to leave his wife and son in the desert, and Rashid Ahmad Chaudhry writes in *Muslim Festivals and Ceremonies*, "It is narrated that Abraham saw in a vision that he was slaying his only son Ishmael." (Chaudhry 30). Aside from Abraham's story acting as simply a test, Hossein from Moyers's work states, "Abraham must act as a perfect exemplar for all the problems monotheists face." (Moyers 226). This statement is in conjunction with the Islamic belief that throughout history, when God's people start to

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<sup>2</sup> AS = Alaih Salaam ("Peace be upon him")



stray from the right path and Him, God sends prophets to reform the people and bring them back to the right path. That is the basis for Muslim belief in all of God's Prophets.

As previously mentioned, the holiday Eid ul Adha honors Abraham's willingness to sacrifice his son, and Muslims also remember the plight of Hagar and Ishmael in the desert. Malik Ghulam Farid comments, "...Muslims who are the spiritual descendants of Ishmael, commemorate with great fervor his intended sacrifice, by slaughtering every year rams and goats all over the world on the tenth day of Dhu'l-Hijjah." (*The Holy Quran*, 37:103). This passage hints at the Eid ul Adha celebrations that include sacrificing a goat and distributing the meat to family, friends, and the needy, and cooking meat dishes during the three days of celebration. Eid ul Adha, the "Festival of Sacrifice," is celebrated on the tenth day of Dhul-Hijjah, which is the last month of the Muslim calendar – a lunar calendar. This day concludes the Hajj (pilgrimage) ceremony to Mecca; Hajj is one of the Five Pillars of Islam. After seeing the moon ten days before the holiday, Muslims attend Eid prayers the morning of Eid and then proceed to their individual celebrations. This Eid is celebrated two months and ten days after Eid ul Fitr.

The religious significance of a similar account from the Holy Quran and the Holy Bible is quite noteworthy. Rashid Ahmad Chaudhry informs readers that since Abraham had to leave Hagar and Ishmael in a barren desert of Arabia, there is a greater moral to the story. Chaudhry writes, "Ishmael was made an instrument for the purpose of establishing the true worship of God, and this was the place where the first House of Allah, the sacred Ka'aba [in Mecca], was situated, though it was in ruins at that time." (Chaudhry 30). The Quranic verse "Our Lord, I have settled some of my progeny in an uncultivable valley near Thy Sacred House." (*The Holy Quran*, 14:38) sheds light upon this belief. This verse not only references Abraham leaving his wife and child in the desert, but also the event's greater significance. Ghulam Farid writes regarding this significance, "But God had so designed that the place should become the scene of the activities of God's last Message for mankind. Ishmael was chosen as the vehicle for the implementation of the Divine plan." (*The Holy Quran*, 14:38). The Quran hints at the fact that Islam, the last of all major world religions, would arise from this site in Arabia through the progeny of Ishmael. Abraham and Ishmael rebuilt the Holy Ka'aba in Mecca, which is why the history of the pilgrimage can be traced back to this time. Regarding this, Hazrat Mirza Tahir Ahmad writes, "Abraham raised it [Ka'aba] from the ruins, which he discovered under Divine guidance, and about which he was commissioned by God to rebuild with the help of his son Ishmael. It is the same place where he had left his wife Hagar and infant son Ishmael, again under Divine instruction ... both of them worked together to rebuild the house and restart the institution of

pilgrimage.” (Ahmad 38). In these ways, the greater religious and historical significance of the Muslim holiday, Eid ul Adha, stems from a similar story in the Holy Bible.

Hagar, referred to as Hazrat Hajra in Islam, is not considered an inferior concubine in the Islamic interpretation of the story of Abraham, Hagar, and Ishmael, as she is considered in some interpretations of the text of Genesis. In the Book of Genesis from the Old Testament, as well as in the Holy Quran, Hagar is best known as the mother of Ishmael, Abraham’s son. Muslims trace their spiritual lineage through Ishmael and attribute the rebuilding of the Ka’aba in Mecca to Abraham and his son Ishmael. The Islamic and Christian traditions differ in their interpretation of exactly which son Abraham was called to sacrifice – Isaac or Ishmael. The Christian tradition holds that it was Isaac who Abraham was commanded to sacrifice in a dream, whereas Islam believes that it was indeed Ishmael who was the son Abraham was willing to sacrifice. This is why Hagar is respected to such a great extent in Islam – she was the mother of a great Prophet in Islamic history, and Muslims commemorate the events that took place in that ancient Arabian desert every year, during Eid ul Adha, the “Festival of Sacrifice”. Therefore, despite a point of divergence regarding which son was the symbolic sacrificial lamb, Islam and Christianity have similar stories in their respective Holy Books.

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## The Media, Materialism, and *The Matrix*

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Many critics have conducted analyses of *The Matrix*, focusing on philosophy, gender, race, and even the concept of nation in the film. However, critics have failed to address the manner in which *The Matrix* relates to the media, one of the most important forces in our society and personal lives. In *The Matrix*, a race of machines programs humans into a computer simulated world in order to conceal the real world from them and use them as an energy source. This is symbolically analogous to the way the media exerts control over society while, paradoxically, relying upon it for its continued power. Through advertising, television shows, films, and the internet, the media influences everything from people's buying habits to their political views; it subtly molds their identities. According to Frederic Jameson, consumerism and the media have given rise to a society in which individuals no longer exist, and, perhaps, never did; people, rather, are merely the sum of the books they have read and the television shows they have watched—"identity" is mass-produced by pop culture (115). Just as Jameson claims that there is no such thing as an individual in postmodern society, in *The Matrix*, people do not exist on an individual level; the matrix creates false identities and lives for humans. *The Matrix*, therefore, is a reaction against media control and the manner in which pop culture and consumerism—propagated by the media—construct individual identity and subtly control the population's views about issues such as politics and sexuality.

Morpheus describes the matrix to Neo as "the world that has been pulled over your eyes to blind you from the truth." However, although the members of Morpheus's crew exist outside the control of the matrix and know that it is a large-scale illusion, they are still susceptible to its simulations at various points in the film. For instance, when Neo is walking through the city with Morpheus during his training, he momentarily forgets his purpose, and begins looking at a woman in a red dress to whom he is attracted. He knows that she is not real, but though he is aware that she is merely an aesthetically pleasing simulation of a human being, he momentarily falls prey to the simulated reality (which, Morpheus reveals, is a training program rather than the actual matrix). Later in the film, Mouse tells Neo that he designed the woman in the red dress and offers Neo the chance to have sex with her. The eagerness with which Mouse discusses the woman

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betrays the fact that although he knows she is a simulation—a simulation he created—he is still subject to the matrix’s deception. Like the matrix, even if a person is aware of the media’s existence, function, and goals, he or she is often still susceptible to its influence. For instance, with regard to media literacy, or, the movement to increase social awareness of advertising in the media, Renee Hobbs writes, “While older children and teens may have more knowledge about advertising, they may not necessarily employ critical thinking skills in response to advertising or have more skepticism about advertising in general” (“Media Literacy”). Although Hobbs specifically speaks about how adolescents respond to advertising, this applies to all people who encounter the media. Despite the fact that they may understand that advertisements are created with the goal of enticing consumers to buy a certain product, they still sometimes yield to advertising just as Neo briefly yields to a computer-simulated reality. He momentarily forfeits his critical thinking faculties and his skepticism about the matrix is shattered.

Neo and Mouse’s attraction to the artificially constructed woman parallels one of the media’s most damaging effects on society: sexism. The fact that the woman only exists in a computer program highlights how the media (symbolized by the matrix) commodifies sex and objectifies women; this particularly occurs with regard to pornography. According to Carrie Pitzulo, “when...[pornographic] images are only of women, the supposed celebration of sexuality is really a privileging of heterosexual male desire” (263). Similarly, in “On Treating Things as People: Objectification, Pornography, and the History of the Vibrator” Jennifer M. Saul writes,

By definition...use of pornography is use of a thing—a piece of paper, for example—as a woman. Assuming that women are persons, use of pornography is, then, personification...[the fact that] using pornography involves using pieces of paper to fulfill the function of women is rather insulting to women. It suggests that...women[’s purpose]...is generating male sexual satisfaction. (47-48)

Mouse realizes that the woman is not real, just as people who buy pornography realize that “pieces of paper” in magazines are not real women. He tells Neo, “Well, she doesn’t talk very much, but if you’d like to meet her... To deny our own impulses is to deny the very thing that makes us human” (*The Matrix*). Since the woman “doesn’t talk much,” Mouse is, in essence, doing the same thing as someone who “uses pieces of paper to fulfill the function of women”; he is using a simulated woman “to fulfill the function of a [real] woman.” Mouse, then, embraces both the simulated world *and* sexism, just as people embrace misogyny by purchasing pornography that objectifies women.

However, Mouse is not portrayed as an evil character: he is presented merely as a weak, youthful character who frequently annoys the other members of the resistance. Although he and Neo momentarily yield to the seductive nature of simulated reality, they do not consistently long to return to the matrix; it is for this reason that Cypher, rather than Neo or Mouse, is the target of the film's moral judgment and criticism. David J. Gunkel argues that the film is ideologically reductive because the plot depends upon the traditional philosophical scheme of hierarchical binaries to sustain its plausibility. Within this dichotomous moral framework, Neo's decision to live in the real world is considered "good" whereas Cypher is demonized and presented as a dissolute traitor because he prefers the pleasant illusions of the matrix to the stark nature of reality (197-198). However, Gunkel neglects to explore the role of free will in his analysis of the film's philosophical underpinnings. The film not only condemns Cypher's preference for the comforts of an artificial world, it also condemns his eagerness to forfeit his free will in pursuit of this artificial world—Cypher wants to exist in the matrix even though he knows that it is a system that exists beyond his control. When he is eating steak with Agent Smith in the restaurant, he tells the agent, "I know this steak doesn't exist. I know that when I put it in my mouth, the matrix is telling my brain that it is juicy and delicious. After nine years, you know what I realize? Ignorance is bliss" (*The Matrix*). By choosing to return to the matrix, then, he is knowingly relinquishing his free will and deciding to allow the machines to manipulate the world that he will experience. Similarly, although the media allows for quick and efficient methods of global communication, it becomes an insidious force when people passively allow it to manipulate them, as through advertising.

While Cypher and Agent Smith plot against Morpheus, they are sitting in a luxurious restaurant in the matrix. In the successive scene, however, their lavish surroundings are juxtaposed with the stark environment in which the members of the resistance dine. Therefore, the film also equates the matrix with materialism and hedonistic indulgence. Cypher, then, is also portrayed in a negative light because he endorses the materialism and false pleasures of the matrix. Cypher also tells Agent Smith that he wants "to be rich; someone important—like an actor" when he is plugged into the matrix again, similarly revealing his propensity for artificial finery and grandeur. However, although Agent Smith may plug Cypher into the matrix again, there is no guarantee that he will fulfill his side of the bargain and make Cypher someone rich or important. Cypher's request reveals that the agents control human identity within the matrix, just as pop-culture works through the media to mass produce human identity

(Jameson 115). In our media-saturated world, “identity” is merely a collection of views and opinions which people absorb from the media (Jameson 115).

In an article about the media’s role in international conflict, Yoram Peri states that “If, in the past, the media were only as a tool of the state, they have seemingly also been regarded as reflecting society and individuals. However, a deconstruction of media and news media texts reveals deep structures that have not changed. As in the past, so in contemporary time, the media [plays] a significant role in the construction of the image of the enemy” (79). Thus, in constructing a given society’s view of “the enemy” during wartime, it follows that the media can essentially control the manner in which society perceives the war. If the media can be said to affect people’s views on war in this manner, it logically follows that the media can easily affect—and even *mold*—people’s political views. Since political orientation is something which is widely considered to define individuals, this is a situation in which the media essentially constructs human identity just as the matrix’s agents do.

Most people are oblivious to the matrix’s existence; this mirrors the fact that they do not think about the effect that the media has on their lives, and thereby inadvertently allow it to control them and mold their identities. Both the media and the matrix take the form of advanced technology which has achieved such large-scale dominance that it blurs the lines of human control: although the media was created by humans, it has become such a powerful social force that it now manipulates them. The media, however, only influences people insofar as they *permit it* to manipulate them. Since Neo frees himself from the matrix and develops the ability to control it, this suggests that people are capable of rising above the media’s influence. Although they have created it and perpetuated its authority, they also possess the ability to diminish its power over society as a whole. Neo’s telekinetic ability to manipulate the matrix also shows that the media’s power is rooted in the minds of the individuals whom it exercises authority over; this power can be easily revoked. However, in order to revoke it, individuals who oppose it need to band together.

Although Neo is “the one,” he needs the support and help of the resistance in order to be successful; the members of the resistance derive their power from its communal nature. For instance, unless a member of the resistance stays on the Nebuchadnezzar to call a cell phone or a telephone in the matrix, the other members of the resistance will be trapped in the matrix. Similarly, when Cypher throws away the cell phone, he causes the group dynamic to collapse and postpones Neo, Morpheus, and Trinity from leaving the matrix. The resistance’s power is founded upon teamwork and trust between its members. If, as it happens with Cypher, a single member of the

resistance conspires to thwart the group's efforts, or, if that member simply does not cooperate with the group, the resistance will not achieve its goals.

This sense of interdependence is deepened when one examines the power dynamics within the resistance. If Morpheus had not informed other members of the crew about the matrix and helped bring them into the real world, then the crew would never have understood that true reality lies outside of the matrix. Conversely, Morpheus needs Neo and the rest of the crew to succeed; he cannot achieve his purpose alone. Thus, the crew helps Morpheus in exchange for the knowledge he can provide them about the matrix and about themselves. Interestingly, Neo would not have attained self awareness and become "the one," without the help of Morpheus and the other members of the resistance. He can only break away from his identity as "Mr. Anderson" and assume his identity as Neo, or, "the one," by assuming his place within a community.

Analogously, although resistance to the media's influence will begin in the individual mind, it will remain on an individual level unless those who oppose it do so openly and collectively. Those who wish to rise above the media's influence would be best served by creating awareness about the subtle (and not so subtle) ways in which it controls society. Only by collectively opposing the media can we affect a change in the manner and methods through which it operates; only then can we become individuals and overcome the manner in which the media mass produces identity. We must gain control of the media instead of allowing it to control us.

*The Matrix*, then, can be seen as a warning about the power the media exerts over society. However, the film's message is not entirely bleak. The media—like the matrix—is a seemingly omnipotent, ubiquitously inescapable system which all humans are subject to. However, just as Neo possesses the ability to overcome the illusions of the matrix, society possesses the ability to collectively surmount the illusions of the media.

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# The Origins of Carolingian Minuscule

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Do not take anything for granted. Many state this phrase in relation to all sorts of things from a pencil to life itself. What about the way we write, the style, the script, the format? Most people have never given this a passing thought, yet our style of writing is as old as the Middle Ages, something straight out of the medieval world with a rich history all its own. The Carolingian minuscule is our typical style sentence with capital and lowercase letters and spaces in between words. There was a time when this was not the case and a standard form of writing around the world did not exist. Many different regions had styles unique to their cultures that were apparent in their writings left behind for us to see.

Writing is an age-old talent, and infusions of Greek and Roman styles are part of this history. Many Barbarian tribes enhanced these original styles and arrived at something completely their own. Charlemagne's revival of the arts and education and the strong desire to provide a simplified style for reading and writing ended in a rich background for current writing. After Charlemagne received his new style of writing, the current Carolingian minuscule evolved even further. The monasteries were responsible for the transmission of writing around the world through their vast scriptoriums, copying book after book and changing their writing based on the popularity at the time. Like many new things, Carolingian minuscule received its critiques, however, these seem to be unfounded and not permanent since the use of the minuscule has prevailed. Throughout all of these developments from tribe to monastery, one can start to glean the contributions that inspired and created the Carolingian minuscule, and the rich history behind it that many have taken for granted.

The history of Carolingian or Caroline minuscule begins with the history of the first written letter; however, the discussion here will focus on its history since the Greek empire. The Greeks had two different styles of writing, one of "book hand" and one of cursive (Fischer 239). The book hand was used for literature and scribing, and the cursive was used for everyday business--with a special script called uncial (Fischer 239). "Uncial used 'majuscules,' or large, upper-case letters composed of curves instead of the angular capitals of monumental texts [because curves were easier to write with on vellum

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<sup>1</sup> Written under the direction of Dr. Laura Morowitz for AH217: *Medieval Art*.

and parchment]” (Fischer 239). Greek minuscule (Figure 1) developed around the 9th century. It is a style that held the characteristics mentioned above, but became much smaller, more compact and heavier (Fischer 241). The script is starting to get smaller, while there is no distinction between capital letters, as they are all capital, progress is already heading toward a simplified font. Greek minuscule even included markings in its publications to mark where one should breathe due to the increasing number of literate people. The issue of heightened literacy will become a reason for the unified script. Later, typographers abandoned this idea, calling it unnecessary, and instead left their writing unadorned (Fischer 243). One can begin to see how Caroline script has its roots in the Greek.

The Romans also began to edit and change their script styles. Initially they had a style very similar to the Greeks, using only capital letters with cursive styling; however, they began to add a slanting stress to their capitals (Fischer 243). One can see the modification as the letters became sligher for the ease of use; simply by stressing letters and varying the way they put the ink onto the papyrus. Uncial writing was popular for this group as well; “uncial writing’s earliest example shows it to be precise, as well as very easy to read” (Fischer 243). Over time the Roman cursive evolved into something simple that could be written with one pen stroke, this simplification then later led to the development of New Roman Cursive (Fischer 245). This contained “minuscule that no longer used capitals or uncials, developed [and] allowed three different letter heights: ascending (like b), neutral (n), and descending (p)” the different heights changed based on who the message or text was being sent to and for what (Fischer 245). The use of lowercase letters to denote significance is crucial to the creation of lowercase. This development, however, took a new turn in Italy and Southern France where they created the half-uncial, which is thought to have formed the model for the creation of Caroline Minuscule (Fischer 245). Half uncial (Figure 2) can be described as “a cursive uncial mixed hand that maintained disconnected letters which took on new, lower-case shapes” (Fischer 245).

While it is very clear that the Greek and Roman scripts contributed greatly to the development of Carolingian minuscule, the various scripts of the Barbarian tribes also added to its creation. Tribes such as the Visigoths, Merovingians, and Lombards each had their own adaptation of the traditional Roman style half-uncial. “It was in the book hands, elaborated from the cursive character, that the lines of national demarcation became clearly defined...”(Chisholm 573). First, the Lombardian font is large with sprawling cursive, very difficult to read, and eventually evolved into a form with alternating wide and thin strokes resembling modern calligraphy (Chisholm 573). The

Visigoth style developed similarly, maintaining more of the same structure as the Roman half-uncial but over time leaning more toward a calligraphic style (Chisholm 573). No doubt the two tribes had contact with each other and ended up merging styles. In the case of the Merovingians, they collaborated with the other Frankish types and created a style that was “cramped, laterally compressed, slender and almost illegible” (Fischer, 247). Upon inspection of Figure 3, one is able to notice the contributions Greek writing has made to the evolution of the Merovingian minuscule. It is easy to see how there was a constant evolution of styles. It seems as though no one but the trained writer would be able to read or understand these works. In a time where there was a push for literacy among more people, the handwriting needed to be more legible whether it was in book-hand or cursive hand.

In 789, Charlemagne recognized the issues surrounding the different types of Frankish script: Lombard, Visigoth, Merovingian, and demanded the revision of books in the scriptoria of Germany, France and Northern Italy (Fischer 247). This was no easy task, and it took a lot of work to develop a script that was suitable for Charlemagne’s demands. He was determined to have an educational program fit for the revival of learning and able to spread the Christian faith (Stokstad 110). Stokstad states, “Charlemagne’s educational program required texts to be correct, uniform and legible” (110). While this may seem like a desirable outcome, one might question the notion of what Charlemagne meant by all text being correct. Did Charlemagne deem them currently incorrect, was the information false or was it purely the lack of conformity in the script that he called incorrect?

Alcuin of York was the abbot and scholar in charge of overseeing the construction of what is now called the Carolingian minuscule (figure 4)—he also conveniently oversaw Charlemagne’s educational reform (Fischer 247). There were very specific things that set this script apart from all others previously mentioned. Fischer describes it as, “a very clean, simplified script that avoided ornateness and created an even, flowing appearance” (247-248). It was of the utmost importance to Charlemagne that it was legible, and it seemed that this new script did so with ease. It adopted some of the old letters from old Roman half-uncial, while deviating from the unorganized Merovingian (Chisholm 577). Comparing the images of the different scripts, there are no breath marks above the characters, and the weight of each letter is neither too bold and heavy nor too light and flimsy. Each line and letter is spaced adequately so that they are individually appreciated and understood. “Capitals, or majuscules, were now reserved for initials (beginning letters of text) and other special uses...[it was not until] much later capitals assumed a highly refined role...subject to precise rules of usage” (Fischer 249).

The use of the majuscule and minuscule allowed words to be the same with different meaning, Fischer cites the example bill and Bill, the item you pay versus the proper name (249). Another addition Abbot Alciun made was the differentiation of certain letters in the alphabet. “The letter u was invented to distinguish the vowel u from the consonant v” (Fischer 249). Perhaps changes like this were what Charlemagne referred to when he required a text that was correct. Stokstad mentions that scholars understand the development of Carolingian minuscule to be one of the “most significant and lasting achievement[s]” (110).

The Carolingian minuscule may have been a success for the time period, but what makes it even more important is the idea that it became the foundation for modern writing. Bishop describes it as an international script, which English scribes had been attempting for years to create (xi). The educational reforms first spread to France and Germany and then further on with the use of their new script (Fischer, 248). In Italy it was used for documents and books; in England it became popular for Latin texts (249). Chisholm describes how the style evolved into a more calligraphic form allowing it to be more beautiful and exact (577). “By the tenth century, Carolingian minuscule had become the standard hand in most of Western Europe, with many regional variants and remnant local forms for special purposes” (Fischer 249). This statement by Fischer highlights the universality of Carolingian minuscule and the fact that many regions in Europe adopted it while they also held on to their traditional scripts. Perhaps this was a way of holding on to their national identity, or it might have been a way to make special documents, more special, by having them look different than every day documents. In a way it might be similar to the use of calligraphy on collegiate diplomas—it signifies the honor and prestige.

While Carolingian minuscule is heralded as one of the greatest achievements in writing, there were those who did not like the script and did not find use for it. There were also, with time, those who no longer found the usefulness of it and began to revert back to their old styles. “By the 1100s the graphic unity of the Carolingian script had begun to fragment, and the regional hands emerged, each expressing a characteristic form” (Fischer 250). As stated earlier, nations held on to their regional styles and used them to convey importance. Why now were nations abandoning the universal style altogether and reverting back to what seemed old and outdated? Fischer suggests that perhaps scribes were trying to save parchment at the time by bringing back the breath marks and other punctuation above letters instead of spelling everything out nicely (250). “Scribes were forsaking the more leisurely paced Carolingian Minuscule in favor of the compact Gothic bookhand” (Shailor 34). This again highlights the need to save

parchment and time. Writing in a simple neat way takes more time than quickly scribbling something out on a note; this caused the reversion back to other forms because they simply took less time to write. Writing and literature might have been flourishing quicker than parchment could be produced, or patrons might not have wanted to own large books, instead opted for something smaller with the same amount of writing. Shailor comments on the trend associated with the use of Gothic bookhand, “that it was simply more visually appealing and also highlighted an exciting calligraphic potential that surpassed that of the Carolingian Minuscule” (34). Another modification made during this time was the switch to Arabic numerals. “As a result of the Crusades, scribes began using Arabic (1, 2, 3, 4) instead of Roman (i, ii, iii, iv) numerals, thus conserving even more space” (Fischer 250). These intricacies caused some nations to stray from the traditional uses of Carolingian minuscule, and other issues arose simply as time wore on and the novelty of the Carolingian minuscule wore off.

Centuries after Charlemagne’s death Carolingian minuscule was still used, especially in monastery scriptoria; however, it was modified and changed based on their own needs, eventually evolving into an Anglo-Caroline style. It is rumored that Carolingian minuscule made its first public impact in England during the Benedictine coup in 964 (Dumville 16). Here too, many variants, three distinct ones, came about as nations held on to their regional scripts, and adapted the minuscule to suit their needs. “The effective life of the three distinctive styles practiced during the first two generations of extensive Caroline writing in England...was converted or assimilated into a single national style [that] may be discovered by following developments at Christ Church, Canterbury” (Dumville 5). One of the biggest uses of Anglo-Caroline style script during the tenth century was to copy the Rule of St. Benedict. Dumville states that, “commentary on the Rule and glossed copies of the Rule are prominent among English manuscript survivals” (8). The use of Carolingian minuscule signaled to many the importance of the document. “They would have recognized that the books which they imported from abroad—particularly those containing texts of ideological importance for their cause...were usually written in that [Carolingian minuscule] script” (Dumville 17). Clearly, Carolingian minuscule not only held great importance to many for its simplicity and ease of use, but it also held importance in that its use symbolized religion and internationalization. One of the defining characteristics in English Caroline minuscule was its use of the square effects. “Square minuscule elements were retained in many examples of Anglo-Latin script...in the letters common to both alphabets [presumably Latin and English]” (Bishop xiv). It can be concluded that the English attempted to copy

the Carolingian minuscule, however, they did not have the proper technique to do so, and ended up with a squarer version.

While the English adapted their own form from Carolingian minuscule, it is still possible to see the influences and how it retains most of the basic features (figure 5). The English minuscule maintained the simple legible spacing and the similar variations of ink width; however, it also makes use of markings above the letters like breath markers. Bishop helps to describe it as a variation of things: “calligraphic or unpretentious, rapid or deliberate, fine and precise or notably firm and energetic; it has much character, the work of individuals being readily distinguished; it is consistently legible; script at once feeble and slovenly” (xii). From this description it can be qualified as the script for any occasion, and for this reason it makes sense that this version of minuscule was predominantly used. Flexibility is key; unlike its earlier counterpart, it does not have one style of writing for books and another for letters, but rather one could simply change a few minute details and have a nice, properly written piece of work that suits his or her need. The Anglo-Caroline minuscule also evolved from a need for changes within monastery scriptoria and also changes within the nation itself.

Carolingian minuscule is more than just a style of writing; it holds its own history and even was the inspiration for some historical changes. In its most refined form of Anglo-Caroline style, one is still able to trace back its roots. To imagine that it was derived from such ancient scripts as the Greek and Roman is exciting, but not surprising. Nor is it surprising to see the different tribal (Lombard, Merovingian, Visigothic) influences on the script. In the Middle Ages, word and art traveled quickly, religion possibly even faster; therefore, any differences or changes such as these spread like wild fire. They were not always accepted or received well, but that did not stop changes from being incorporated into history and perhaps recognized at a later time. When all of these influences came together to form the Carolingian minuscule during Charlemagne’s educational reforms, the results were spectacular. Works of art and writing merged and books were produced at astounding rates, literacy improved, and many became educated enough to enjoy these works of art. For a time nations held on to their former scripts for special occasions—looking to keep a piece of their history, no doubt, but like any great innovation it met resistance. There were those who felt it too tedious to write with and those who thought it was not fancy enough, and this led to changes and a movement away from Carolingian minuscule to a more Gothic style. At this point, however, there developed a new hybrid of writing, the Anglo-Caroline style, utilizing the best parts of each period of history, combining it into something functional and useful for all

occasions. The history of Carolingian minuscule influenced many things, including the way we write today.

What does this mean for us today? This vast history of majuscules and minuscules was important during the Middle Ages, and is certainly fascinating to learn about, however, even in 2010 there is a direct application, even more specifically to New York. “In September, the *Daily News* reported that the changes would require street signs which now mostly use all-capital letters to have upper and lower-case letters. So MAIN ST. would become Main St.” (Donahue). The streets signs of New York are getting an overhaul—they are trying to move away from all majuscules like the Greeks and Romans and are instead moving to a fusion of majuscules and half-uncial text—or in layman’s terms upper and lower case lettering. Why make such a drastic (and expensive change) to road signs? “Experts concluded it would make the signs easier for drivers to read, helping them get their eyes back on the road more quickly” (Donahue). Just like Charlemagne, experts are realizing there needs to be a reform in what people are reading—they desire a clear, legible and simple style that helps those on the road find road signs and find them safely. Clearly, Carolingian minuscule is still around us and the reforms made in the Middle Ages are applicable and still active to this day. The history is not only fascinating but also timelessly useful, and one can be rest assured that even in 2050 some aspect of Carolingian minuscule will evolve, but still hold strong onto its roots from where it came.

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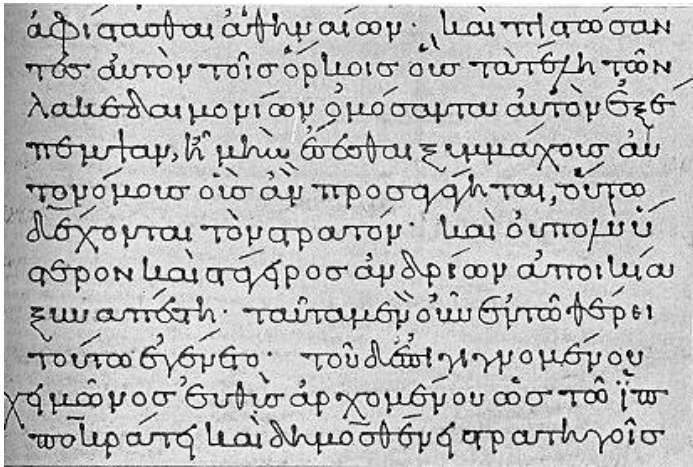


Figure 1: Learn How To Write

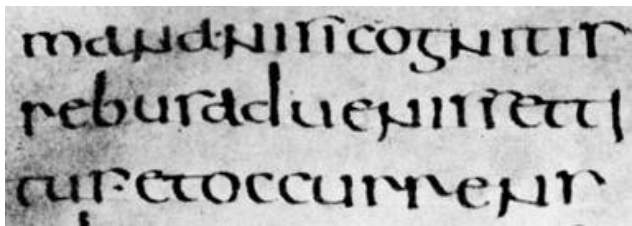


Figure 2: The Programming Type

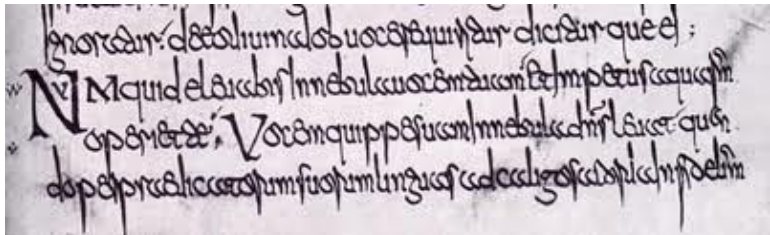


Figure 3: Farber

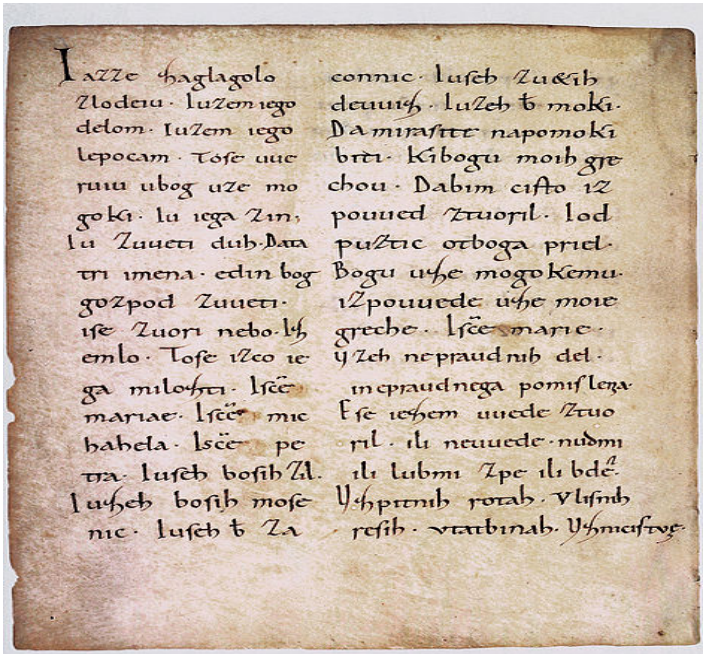


Figure 4: Norman

**R**egulares igitur mona-  
 chi nonseculares in pre-  
 fatio xpo comite degen-

Figure 5: Tilletson

# **Feminine Devils: The Demonic Portrayal of the Female in Shakespeare's *Macbeth***

Jessica Verderosa (English)<sup>1</sup>

Throughout William Shakespeare's *Macbeth*, the play depicts the female characters as tempters of humanity; inherently diabolical beings who try to undermine and persuade the initially upright man to commit sins. Though the play presents the reader with a tragically erring protagonist in Macbeth, an ambitious general who eventually gives into the temptations of usurpation, both the witches and his wife, Lady Macbeth, are the figures who lead him toward his sinful choices. Macbeth becomes a symbol for humankind, representing a plagued humanity that recognizes the guilty consequences of sin, but still desiring the prize achieved via immoral acts. However, if Shakespeare presents Macbeth as a wavering, corruptible man, then the female figures within the play become the malignant devils that tempt him. Although Macbeth possesses free will, the Weird Sisters originally plant the idea of usurpation in his mind by prophesying his eventual kingship. Similarly, Lady Macbeth uses cool, powerful logic to convince her waffling husband to perform treasonous murders. This monstrous portrayal of both the witches and Lady Macbeth, however, represents the prevailing Elizabethan fear of women. *Macbeth* categorizes the Weird Sisters and Lady Macbeth as terrifying, inhuman figures, maintaining that female influence over the male mind can only result in destruction. In fact, the play asserts that by obtaining power over Macbeth, the insidious women step out of their rightful, subordinate roles, thus distorting themselves as well as others. Therefore, the Weird Sisters appear bearded and manly, indicating a betrayal of their feminine identities, while Lady Macbeth destroys herself by unwillingly succumbing to inherent female hysteria in her sleep. In this way, the play's parallels between Macbeth and humanity, alongside the female characters' identification with the tempting devil, underscores an Elizabethan anxiety over women and the desire to keep feminine power suppressed.

The beginning of *Macbeth* presents its protagonist as both honorable and brave, the ideal general, unsullied by sin or temptation. In Act I, Scene II, the reader already hears an account of Macbeth's heroic deeds via a wounded Sergeant, "For brave Macbeth (well he deserves that name)/Disdaining Fortune, with his brandish'd steel,/Which smok'd with bloody execution/(Like Valor's minion) carv'd out his passage/Till he fac'd the slave" (Shakespeare I, ii, 16-20). The Sergeant praises Macbeth multiple times for his unrivaled valiancy, first informing his audience that the general truly deserves the title

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<sup>1</sup> Written under the direction of Dr. Ann Hurley for EN330(W): *Shakespeare Survey*.

“brave,” only to then reinforce this notion by directly comparing Macbeth to “Valor’s minion,” hailing him as the very disciple of courage. In fact, the play maintains Macbeth to be a loyal, honorable figure who contrasts greatly with other flawed characters, such as when nobleman Rosse states, “Assisted by that most disloyal traitor/The Thane of Cawdor, began a dismal conflict/Till that Bellona’s bridegroom, lapp’d in proof/Confronted him with self-comparisons/And to conclude/The victory fell to us” (I, ii, 51-58). Rosse directly compares Macbeth to the “disloyal” Thane of Cawdor, claiming that Macbeth ultimately succeeds against him because his superior military prowess echoes his superior character and loyalties. While such parallels become ironies later throughout the play, when Macbeth reveals himself to be a treacherous usurper, both Rosse and the Sergeant’s praise becomes significant because their words indicate Macbeth’s humanity. Although he develops into a tormented villain, Macbeth’s initial honorability stresses his identity as a human being who internalizes, supports, and personifies his society’s morals.

Indeed, Macbeth’s nobility does not begin to waver until the demonic witches tempt him with their prophecy. In his study, C. J. Sisson asserts, “There is no sign of Macbeth’s dangerous ambition until after his first interview with the witches” (14). Although Macbeth certainly harbors ambition at the play’s opening, this quality allows him to vanquish traitors and gain military victories, highlighting aspiration as a positive attribute. Ambition never becomes “dangerous,” as Sisson states, until the witches’ words entice him to direct it towards taking the throne. When the Weird Sisters appear supernaturally before him, the third witch prophesying, “All hail, Macbeth, that shalt be King hereafter,” the words awaken a new mindset within the striving general (Shakespeare I, iii, 50). Though the witches do nothing but predict his future kingship, the prophecy leads the originally innocent Macbeth to envision and desire himself as Scotland’s ruler. However, Macbeth does not immediately yield to these temptations, but instead wavers and waffles, uncomfortable with the newfound ambitions the witches trigger inside of him. When attempting to decipher whether the Weird Sisters’ appearance forebodes fortune or ill will, he reasons, “If good, why do I yield to that suggestion/Whose horrid image doth unfix my air/And make my seated heart knock at my ribs/Against the use of nature?” (I, iii, 134-137). Although Macbeth informs himself that the witches’ prediction depicts success for him, he questions the physical nervousness that overcomes him at the Weird Sisters’ words. This physical reaction indicates Macbeth’s discomfort with his budding awareness that his ambition could easily lead him to usurp the current leader, King Duncan. The witches tempt him, but Macbeth struggles with this temptation, both knowing and fearing its sinful nature. In this way,

Macbeth represents humanity plagued and tempted by sin, as Ken Colston stresses in his article, “Unless one accepts sin as the obstacle to human fulfillment, Macbeth seems a fearful and clumsy risk taker who looks behind and ahead way too often and who talks and thinks way too much” (62). Macbeth symbolizes the human sinner who suffers guilt due to the knowledge of his immoral acts, but still commits evil at the hands of temptation. Therefore, when the witches leave him, Macbeth attempts to resolve his struggles by stating, “If chance will have me king, why/chance may crown me/without my stir” (Shakespeare I, iii, 143). Although the prophecy lures Macbeth to sinful ambitions, he attempts to quell his desires by claiming he will only take the crown if the situation befalls without his active participation.

However, if Macbeth represents the human sinner, than the female witches consequentially represent the devil that persuades humanity toward sin. The play openly portrays them as malignant, evil forces who take guiltless pleasure in tormenting humanity. The Weird Sisters explicitly express their malevolent intentions toward humans when they discuss a particular victim of theirs: “I’ll drain him dry as hay/Sleep shall neither night nor day/Hang upon his penthouse lid;/He shall live a man forbid;/Weary sev’nnights, nine times nine/Shall he dwindle, peak and pine” (I, iii, 18-23). The Weird Sisters describe a sailor they take delight in tormenting, one of the witches explaining how she will slowly dampen his willpower by barring him from sleep. However, while the witches certainly cause human suffering, the play also stresses how the Weird Sisters cannot force a human being towards evil. Therefore, the witch who recounts the horrors she will inflict upon the sailor must also remind her sisters, “Though his bark cannot be lost/Yet it shall be tempest-toss’d” (I, iii, 25-26). The metaphor of the “bark” on a “tempest-toss’d” sea indicates how the Weird Sisters cannot condemn humanity to evil, but simply tempt them towards it. The “bark,” indicating the sailor’s soul, cannot be “lost,” meaning that the witches cannot forcibly overtake a human soul. Instead, the witches can ensure that the soul is “tempest-toss’d,” meaning that they can trigger temptations within the soul, causing a human being to struggle between right and wrong. Similarly, the witches never possess nor force Macbeth to commit immoral acts, but simply prophesize his kingship in order to lead him toward usurpation. Just as the devil has no true power over the human soul, which possesses free will and can therefore act on its own accord, the Weird Sisters cannot force Macbeth towards wickedness due to his free will, but instead exploit his ambition by predicting him as eventual king.

However, *Macbeth* does not present only the Weird Sisters as monstrous female entities that entice Macbeth toward his ruin. His wife, Lady Macbeth, also leads him to his destruction, thus categorizing another female character as the tempting devil. In his

study, Harold S. Wilson openly states about Macbeth, “It requires an extraordinary exertion of will and persuasion from Lady Macbeth to strengthen his wavering purpose” (72). The play characterizes Macbeth as tentative, hesitant, and begrudging as he performs murderous acts to achieve the crown, whereas Shakespeare shapes Lady Macbeth as brutal, relentless, and wicked as she persuades her husband to usurp King Duncan. Even with the Weird Sisters’ tempting words, only Lady Macbeth’s powerful influence pushes her waffling husband to perform seditious acts. Indeed, Macbeth cannot even fully imagine himself committing the murders necessary to become king, but instead projects responsibility onto an imaginary blade: “Is this a dagger which I see before me,/The handle toward my hand? Come, let me clutch thee:/And on thy blade and dudgeon gouts of blood,/Which was not so before”(Shakespeare II, i, 33-35, 46-47). Macbeth envisions a dagger with its handle already turned toward his hand, suggesting that the blade offers itself to him, rather than Macbeth actively deciding to lift it. He also does not envision himself stabbing the king, but instead sees the blade already bloodied, as if the act took place without his willpower or knowledge. Therefore, the bloody dagger performs the treacherous acts, not Macbeth, who simply reaps the benefits of kingship, but escapes the guilty responsibilities of usurpation.

While Macbeth’s guilt and hesitation indicate his humanity, Lady Macbeth’s disturbance with his wavering nature characterizes her as the insidious devil. When she first discovers the Weird Sisters’ prophecy in her husband’s letter, she openly frets, “Yet do I fear thy nature/It is too full o’ th’ milk of human kindness/To catch the nearest way” (I, v, 16-18). Lady Macbeth understands that her husband’s morality will bar him from murderous sedition; therefore she decides she must exploit his nobility in order to gain access to the throne. Just as the devil attempts to undermine the soul, tempting humankind with the benefits of sin, so does Lady Macbeth pressure her husband to forfeit honor and seize the crown. When Macbeth expresses uncertainty about murdering King Duncan, Lady Macbeth urges him by nearly jeering, “Wouldst thou have that/Which thou esteem’st the ornament of life/And live a coward in thine own esteem/Letting ‘I dare not’ wait upon ‘I would’/Like the poor cat I th’ adage?” (I, vii, 41-45). Lady Macbeth pressures her husband into the act, claiming that he will never obtain the “ornament of life,” or the crown, if he allows hesitation to keep him from performing the murder. She further impresses on him that such tentativeness brands him a coward, thus stripping away the masculine valor he represents at the beginning of the play. Yet, just like the witches, who urge, but cannot coerce evil upon the soul, Lady Macbeth does not physically force her husband into murder, but simply persuades him toward the act with cruel logic. When Macbeth asks her what will befall them if they fail, Lady Macbeth

answers, “We fail?/But screw your courage to the sticking place/And we’ll not fail” before she recounts her plot to intoxicate the king, kill him in his slumber, and then blame the murder on the servants (I, vii, 59-61). Lady Macbeth does not threaten Macbeth, but instead strengthens his resolve by claiming his courage alone will ensure their victory. As the Weird Sisters spark Macbeth’s temptation with nothing but verbal prophecy, Lady Macbeth persuades her husband to perform treachery with nothing but her powerful argument, linking the female figures to devils that entice a troubled humanity.

*Macbeth* further emphasizes Lady Macbeth as the devil via her demonic characterization. While the witches’ pleasure in tormenting a sailor indicates their wickedness, Lady Macbeth’s lack of regret in murder stresses her malevolent nature. After Macbeth slays the king, he rushes from the room, thoroughly distressed, claiming, “Methought I heard a voice, ‘Sleep no more!/Macbeth does murder sleep’ – the innocent sleep/Balm of hurt minds, great nature’s second course/Chief nourisher in life’s feast” (II, ii, 32-37). Macbeth expresses immediate guilt and turmoil due to the murder, maintaining that his evil deeds will prevent him from slumber, which heals mental distress. Lady Macbeth, however, scoffs at his anxiety as petty delusions, merely stating, “Who was it that thus cried? Why worthy thane/You do unbend your noble strength, to think/So brain-sickly of things” (II, ii, 41-42). Unlike her husband, Lady Macbeth expresses no true turmoil, but claims such nervous thoughts undo Macbeth’s manly courage. She then asserts her own fearlessness by smearing the deceased’s blood onto slumbering servants, maintaining, “The sleeping and the dead/Are but as pictures; ’tis the eye of childhood/That fears a painted devil” (II, ii, 50-52). Lady Macbeth characterizes fear of corpses as childish, suggesting that to experience horror over the sight makes one foolish and weak. The act of dirtying her hands with innocent blood does not upset her; it becomes a necessary vehicle to achieve her husband’s kingship. Lady Macbeth never shows any anxiety or regret in urging her husband to commit murder, but instead sees the situation with a wicked, clinical logic, concerned only with the results of bloody usurpation. This total lack of conscience condemns her as inhuman, just as the Weird Sisters’ malignant glee in torment characterizes them as foul demons.

These demonic portrayals, moreover, also indicate an inherent Elizabethan fear of women imbedded within the play. Indeed, both the Weird Sisters and Lady Macbeth possess power over Macbeth’s thoughts, thus their influence must be pernicious and destructive. The Weird Sisters purposely plant temptation into the general’s mind. The first scene of the play immediately indicates the malignant intent of the witches with their words, “There to meet with Macbeth,” (I, i, 8). Although the following scene only yields praiseworthy description about Macbeth, the Weird Sisters’ ominous plans to meet with



him, framed by thunder and lightning, stresses how their wicked influence will lead to his moral decay. This image of the Weird Sisters as powerful, though malicious, forces clashes with the accepted Elizabethan role of the subordinate woman. Thus, when Macbeth and Banquo first witness them, Banquo observes, “You should be women/And yet your beards forbid me to interpret/That you are so” (I, iii, 45-46). The witches, lacking feminine subservience, deny their femininity entirely, therefore their appearance becomes distorted, unnatural, and perverse, resulting in a masculine beard on an otherwise feminine face.

Just as the Weird Sisters only possess negative influence, Lady Macbeth’s influence over her husband only urges him toward a sinful murder that distorts order via usurpation. In fact, Lady Macbeth’s argument itself indicates the prevalent cultural fear of women via images of infanticide, “I have given suck, and know/How tender ’tis to love the babe that milks me;/I would, while it was smiling in my face,/Have pluck’d my nipple from his boneless gums/And dash’d the brains out, had I so sworn as you/Have done to this” (I, viii, 54-58). Lady Macbeth maintains that her resolve for her husband to gain the crown is so strong that she would murder the child she nurses if it would achieve this goal. However, this imaginary infanticide becomes symbolic for an overall cultural anxiety concerning mothers. Since Elizabethan society rests its foundations on male succession, the discomfort that women, who alone know the true lineage of male babies, could distort family lines becomes incredibly common. In her article, Stephanie Chamberlain explains, “That patrilineage could be irreparably altered through martial infidelity, nursing, and infanticide rendered maternal agency a social and political concern” (73). The actions of the mother become significant because pernicious maternal intentions can bastardize, disrupt, or end vital family lines. Lady Macbeth stressing that she will murder her child in order to achieve immoral usurpation, therefore, echoes this deep cultural anxiety about demonic mothers’ abilities to destroy the rightful patrilineage, such as King Duncan and his heir’s rule.

The image of infanticide, however, also represents negative cultural ideas toward women via the womb. Elizabethans believe the womb to be the source of female hysteria, therefore condemning women as beings with an inherently overemotional, illogical mindset as well as a frailer, weaker physical disposition. Elizabethan society maintains that tears, anxieties, strange whims and even physical illness derive from the womb wandering erroneously throughout the female body (Kahn 34). In her study, Coppelia Kahn maintains, “Women suffering variously from choking, feelings of suffocation, partial paralysis, convulsions similar to those of epilepsy, aphasia, numbness and lethargy were said to be ill of hysteria, caused by the wandering womb” (33).

Elizabethans internalize a variety of symptoms as due to a female's womb floating aimlessly throughout the body; culture then asserts that only marriage will return the womb to its rightful position, promoting Elizabethan patriarchy (33).

Lady Macbeth, therefore, attempts to defy her womb with the violent image of infanticide. She envisions murdering her child, the product of her marriage, which should keep her womb in its rightful place. In this way, the imaginary infanticide echoes Lady Macbeth's reversal of gender roles. While the play depicts Macbeth as plagued with feminine turmoil over committing murder, Lady Macbeth's unshaken resolve in smearing blood over the sleeping servants suggests masculinity. The infanticide image becomes symbolic of Lady Macbeth's attempts to reject her femininity in order to gain power. In fact, Lady Macbeth explicitly expresses this desire to deny her sex when she beseeches malignant forces, "Come, you spirits/That tend on mortal thoughts, unsex me here/And fill me from the crown to the toe topful/Of direst cruelty!" (Shakespeare I, iv, 40-43). Just as the Weird Sisters deny their femininity, resulting in their distorted, bearded appearances, Lady Macbeth directly denies her womanhood with this request; so that she may step outside of the subordinate role the womb promotes in order to urge her husband to usurp King Duncan.

However, despite her attempts, *Macbeth* ultimately concludes that Lady Macbeth is unable to escape the innate female hysteria that exists within her womb. While the supernatural Weird Sisters' rejection of femininity keeps them from ever fully being women via their beards, Lady Macbeth's attempted rejection results in a destructive insanity and eventual death. Though she appears originally collected at the time of the murder, the guilt of the act begins to haunt her in her slumber. In Act V, Scene I, a doctor and waiting gentle-woman observe Lady Macbeth sleepwalking, while she distressingly cries, "Out, damn'd spot! Out, I say! One – /two – why then 'tis time to do't./What need we fear/ who knows it, when none can call our pow'r to/accompt?" (V, i, 35-40). Though she suppresses her turmoil during her waking hours, Lady Macbeth still envisions blood on her hands in her dreams, hysterical because she cannot cleanse her dirty palms, anxiously fretting that she may be discovered, despite assuring herself that no one can accuse her while she remains queen. Since Lady Macbeth rejects her womb by speaking of infanticide, it begins to wander, thus leading to this nocturnal hysteria and her mentioned death at the end of Act V (V, v, 16). She fails to truly achieve the masculine attitude she maintains during the day, instead succumbing to the inherent illness of her womb that she herself ousts from its rightful position due to her attempted reversal of gender roles.

Shakespeare's *Macbeth* thus presents its female characters as pernicious figures who seek to tempt the humanized male protagonist toward sin. While Macbeth represents

the human soul plagued by temptation, the Weird Sisters and Lady Macbeth both represent the guiltless devil that entices Macbeth toward usurpation. In addition to characterizations that indicate an innate malignancy within the witches and Lady Macbeth, the female figures also cannot actively force the human soul to perform evil acts, but lure Macbeth to murderous sedition via verbal persuasion. This demonic characterization of females, however, indicates the imbedded Elizabethan fear of women. The Weird Sisters and Lady Macbeth must be portrayed as pernicious influences because they hold power over Macbeth's thoughts, suggesting that female persuasion can only lead to destruction and distortion. In fact, *Macbeth* asserts that the female characters reject their femininity altogether by stepping outside the accepted subordinate role for women. By denying this role, both the Weird Sisters and Lady Macbeth become perversions of themselves. While the witches distort their appearance by growing unnatural beards, Lady Macbeth's rejection of her womb results in female hysteria and death. *Macbeth* ultimately maintains the message that females with powerful influences can only result in destruction.

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# **The Flaws of Plato's Arguments for the Immortality of the Soul in the *Phaedo***

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Ancient Greek philosopher Plato writes the *Five Dialogues*, and these classical works focus on the trial and death of his teacher, Socrates. The *Phaedo* is the last dialogue that recounts the remaining few days of Socrates' life. In this dialogue, Plato offers readers a variety of proofs for the immortality of the soul. The Greek tradition suggests that the soul exists and embodies life. Socrates believes that the ultimate goal of philosophy is to prepare for death, and he struggles to convince his friends that real philosophers obtain wisdom once their souls separate from their physical bodies. The four arguments that Socrates makes about the immortality of the soul include: the argument from the opposites, the argument from recollection, the argument from affinity, and lastly the argument from the forms. Although Socrates attempts to make compelling arguments for the immortality of the soul, his arguments are flawed due to his dependence on metaphysics.

Socrates first argument for the immortality of the soul deals with the theory of the opposites. The theory of the opposites is the notion that opposites need to exist in order to account for any kind of change. This theory is used to understand the relationship between the living and the dead. According to Plato, Socrates believes that the soul came into being from the dead, and therefore the immortal soul exists before and after a body dies. Nevertheless, Cebes raises the question about the existence of the soul after the death of the body.

Socrates proposes that the soul represents life and the body is a symbol of death. One reason that this argument is problematic is due to Socrates' belief that the soul is a living entity that arises from the dead. He is able to make the argument that the body ceases to exist after an individual's death, however he cannot convince readers or even Cebes that the soul is immortal because it exists forever. Socrates wants readers to accept that the soul is immortal due to the reasoning that the soul is a non-physical entity. Nevertheless, by acknowledging that the soul is eternal, the readers must accept a metaphysical theory. Socrates cannot provide empirical data that proves that the soul exists both before and after death.

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<sup>1</sup> Written under the direction of Dr. Sarah Donovan for PH20: *Ancient Philosophy*.

The second argument that Socrates proposes deals with the theory of recollection. The theory of recollection suggests that individuals have the ability to recollect ideas or knowledge that their souls learned previously during another life. Recollection is dependent upon the theory of the Forms; this theory says that every material object on earth is modeled after an immaterial, perfect blueprint in heaven (each of which is called a Form).

In the *Phaedo*, Socrates states that dissimilar objects help an individual recollect the concept of equality that he or she learned previously. Socrates utilizes the example of a large and a small stick. When the two sticks are juxtaposed together, individuals understand that the sticks are dissimilar, and people are able to comprehend the basic notion of equality. According to Plato, Socrates believes that people are in general in agreement about the concept of equality due to their ability to recollect the forms.

Although the argument for recollection seems convincing, Socrates does not have enough evidence to show that the premises for his argument offers a valid conclusion. University of Oslo Professor Panos Dimas specializes in Ancient Philosophy, and criticizes Plato's argument of recollection in his article, "Recollecting the Forms in Plato." Dimas states, "Plato has obviously realized, as many commentators have not, that there is little philosophical plausibility in an argument for recollection that presupposes the existence of the forms as a premise" (186). By accepting the existence of the forms, Socrates uses this initial premise to make the casual claim that the soul needed to exist before the body (Dimas 186). The argument appears plausible, but the claims that Socrates makes encourages individuals to believe in a metaphysical idea that the forms must exist. He cannot physically prove the existence of the forms, and proposes that a non-physical entity, the soul, is the only thing that can truly understand the something else that is non-physical (the forms).

Socrates struggles to prove that his argument of recollection is plausible due to human beings' dependence on their ability to reason to acquire knowledge. He believes that sense perception does not aid individuals to achieve true understanding of the forms, and thus people must use recollection to remember the knowledge that they already possess. He states, "Then before we began to see or hear or otherwise perceive, we must have possessed knowledge of the Equal itself if we were about to refer out sense perceptions of equal objects to it, and realized that all of them were eager to be like it, but were inferior" (Plato *Phaedo* .75b-c). Dimas suggests that Plato is overly dependent on the theory of recollection and assumes that the knowledge that individuals acquire is only through recollection (188). Nevertheless, Plato assumes that sense perception alone could allow people to comprehend the forms. He believes that sense perception helps trigger

cues in people's mind about knowledge that they have already acquired in the past. Plato cannot empirically provide evidence that the knowledge people acquire is through recollection alone, and he heavily depends on non-physical ideas to make his argument more convincing.

Socrates' third argument for the immortality of the soul is referred to as the argument from affinity. He proposes that the soul is immortal because the soul is invisible and is constantly changing. Socrates states "The soul is most like the divine, deathless, intelligible, uniform, indissoluble, always the same as itself, whereas the body is most like that which is human, mortal, multiform, unintelligible, soluble, and never consistently the same," (Plato *Phaedo* 80b). Plato believes that the physical body remains the same throughout a person's lifetime, and eventually decays after the person dies. The physical body is a visible object that eventually ceases to exist. Nevertheless, the soul, which eventually leaves the body, needs to remain pure by separating itself from the impure body. Socrates suggests that the soul is a pure, invisible, non-physical object. Socrates assumes that the soul must be immortal and necessarily must exist forever because the soul is an eternal, non-physical object.

Simmias and Cebes cleverly question the logic behind Socrates' argument. They agree with Socrates that the soul exists, however Simmias and Cebes are not thoroughly convinced that the soul exists after the death of an individual. They realize that Socrates commits the fallacy of a weak analogy by assuming that the soul is immortal and can exist long after the death of the body. Socrates compares visible and invisible objects and implies that invisible objects are immortal because they are pure and eternal.

Simmias challenges Socrates' argument by giving the example of the lyre and harmony. Simmias believes the soul can be destroyed after the body physically dies. He states that the harmony in the lyre is something that is invisible, and the harmony will be destroyed once the strings on the lyre break. Socrates states that invisible, non-physical objects cannot be destroyed, and therefore using that logic, Simmias proves that a harmony is an invisible, non-physical object that can be destroyed. Therefore, Socrates cannot claim that invisible objects like the soul are indestructible merely because they are invisible objects.

Socrates criticizes Simmias' view and proposes that Simmias incorrectly makes the analogy that the soul is like a harmony. Socrates actually attacks the exactness of the language of Simmias' argument rather than the actual argument itself. He is fixed on Simmias' claim that a soul is like a harmony, and as a result, Socrates tackles the argument that a soul cannot be a harmony. Socrates is relying on the metaphysical to provide support for his argument that the soul is an invisible object that is indestructible

merely because it is invisible. Plato wants people to accept the notion that the soul is immortal because it is a non-physical object, and this implies that readers must submit to a metaphysical theory that makes the claim that non-physical objects truly exist.

Cebes responds to Socrates' third argument, and Socrates has a difficult time developing an adequate response to Cebes. He states that Socrates cannot claim that the soul is immortal because the soul is indestructible. In Cebes' example of the coat, he says that the coat will outlast its owner, but that does not indicate that the coat is immortal. The coat cannot be destroyed, and it is a physical object. Cebes believes that the soul might inhabit many bodies before it is finally destroyed. Socrates needs to introduce his final argument in order to respond to Cebes.

Socrates' final argument deals with the forms. He discusses the relationship between the opposites and concludes that if an object is confronted with its opposite, the object must either retreat or be destroyed. The law of non-contradiction states that an object cannot be itself and its opposite at the same time. Socrates defines the soul as something that is indestructible. He believes that the soul is the carrier of life and at the same time is deathless. According to Socrates, the soul cannot be destroyed because it is deathless. He states:

If the deathless is indestructible, then the soul, if it is deathless, would also be indestructible? Then when death comes to man, the mortal part of him dies, it seems, but his deathless part goes away safe and indestructible, yielding the place to death. Therefore, the soul, Cebes, is most certainly deathless and indestructible and our souls will really dwell in the underworld. (Plato *Phaedo* 106e)

According to Socrates, the law of non-contradiction assumes that the soul cannot be alive at the same time it is dead. Therefore, the soul must be alive and is incapable of being dead. In order to further prove his point, Socrates gives the example of the fire and heat. When a person thinks of fire, the concept of heat is automatically associated with the fire. The fire cannot be both hot and cold at the same time. Therefore, the fire cannot participate in the forms of both hot and cold, as stated by the law of non-contradiction. Socrates utilizes this analogy to show that the soul can only be alive and participate as a transmitter of life. Since the soul is deathless and alive, it does not die once the physical body ceases to exist. Using this logic, Socrates assumes that the soul is immortal and exists forever.

Socrates also hints that the soul is alive and its main purpose is to help an individual recollect the forms. Simmias and Cebes accept the fact that the forms exist, which essentially means that they agree to a theory of metaphysics. The foundation of this argument relies heavily on the acceptance of the existence of the forms and the

assumption that non-physical objects exist and are indestructible. Nevertheless, Plato wants people to submit to a theory of metaphysics by making the claim that the soul is invisible, alive, and deathless. He cannot empirically prove that the soul is indestructible, and he is making the claim that the soul is immortal based on his definition that the soul is deathless. In the fire example, once the fire was introduced to its opposite (snow), it ceases to exist. This logic is applicable to the case of a soul. Socrates states that the soul continues to live even though it encounters its opposite, which is death. The soul encounters the death of the physical body, and might possibly retreat and avoid death. However, the soul might actually be destroyed (law of non-contradiction) when it encounters the death of the physical body, and Plato cannot physically prove that the soul will retreat and not destruct.

Plato offers a variety of arguments for the immortality of the soul in his classic work, the *Phaedo*. The arguments for the immortality of the soul appear plausible, but many aspects of all four arguments are flawed. Plato wants readers to submit to a theory of metaphysics by accepting that both the forms and the theory of recollection exist. The last argument in particular is not valid because Plato tries to weave the notions of the opposites, forms, and recollection into the final argument. Lastly, Plato has a difficult time proving that the soul is immortal because he heavily relies on the Socratic method in the dialogue. The Socratic method entails the rallying of questions and answers in order to resolve a debate amongst individuals. Readers can tend to get lost in the Socratic method, and may not notice the fallacies in Socrates' arguments. As a result, many of Socrates' arguments appear to be valid because Socrates attacks the rhetoric of his opponents and wants his interlocutors and readers to accept several theories that are based on metaphysics.

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