

"Into the Sunset"

About the Staff



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Jane Ma is a senior Biology and English double major in Golf Company, pursuing an honors gold seal track for both degrees. She holds the cadet rank of Human Affairs Officer. She hopes to attend medical school and eventually work in public health. She is the current editor-in-chief of The Gold Star Journal and has also served as the editor-in-chief of The Shako. She has been published multiple times, most notably in the online journal, "Congenital Cardiology Today".



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Lauren Seedor

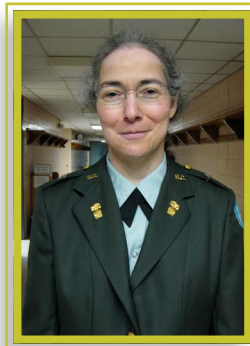
Lauren is a graduate of Conestoga High School and is from Wayne, Pennsylvania. She is a Political Science major with a French minor. She has a 4 year Army ROTC scholarship here at the Citadel, with hopes of becoming a Military Intelligence Officer. This coming summer she plans to participate in the French department study abroad program, which will be based out of Nice, to immerse herself in the French language, to improve fluency as well as her understanding of the French culture.

About the Staff



Ryan Leach

Ryan Leach is a US Army Veteran and junior Political Science major pursuing a minor in Southern Studies and an Honors Program gold seal. In addition to being a Gold Star Journal Editor, he also is a member of the Honors Program Student Advisory Committee and NCHC's Partners in the Parks Program. He is currently applying for a Rotary Scholarship to pursue a Masters in Sociology and Culture from the London School of Economics.



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Dr. Mabrouk is a Professor of Chemistry at The Citadel. She teaches organic chemistry, introduction to chemistry for non-science students, and the chemistry of art. She earned her A.B. from Wheaton College and her Ph.D. from the University of Massachusetts at Amherst. She enjoys working with the editors of The Gold Star Journal each year. Her hobbies include making soap and toiletries, using the lathe and scroll saw, cooking, and reading.

Special thanks and acknowledgements to Cadet James McManus, winner of our award for "Best Photograph", and Mr. Russell K. Pace of Citadel Photography for their talents and photographic contributions to this edition.

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If you would like to support this publication, please make a donation to The Citadel Foundation and specify your contribution to The Gold Star Journal. Thank you.

A Letter From the Editors

As editors, we are exceptionally proud of our nineteenth installment of The Gold Star Journal. We hope you enjoy the featured papers submitted by some of the best minds the Citadel has to offer. For this year, as with others, we have selected an assortment of papers we found to be outstanding. Especially striking about this year's papers was the ability of the authors to explore the ethical and socially relevant dimensions of their subjects--demonstrating not only a deft intellectual grasp of the material but also a humanistic perspective that speaks to their characters and passions.

Matthew Scalise considers the Ebola epidemic in relation to ethical issues of public healthcare in developing countries. Erik Usher, winner of "best undergraduate paper", presents some of his research on healthcare disparities among African Americans. James McManus explores achievement gaps in education in relation to the controversial Affirmative Action policy. Michael Barkley offers a fascinating history of the technological transition from wood to steel ships in the United States Navy and discusses why this shift has been so important. In a different historical vein, McKenzie Pepper, who won our award for "Best Overall Paper", shows us the often overlooked roles that women have played in the Hebrew Bible. Jane Ma discusses the idea of universal, ethically informed science and rejects the idea of separate sciences. Finally, Jennifer Burch analyzes the ethics of cloning and technology as presented in the novel, *Never Let Me Go*.

Recognition and appreciation are also to Karl Mack of the Sun Printing Co. for his continued help printing the journal, and to John Whitten of Citadel ITS for his assistance and expertise in developing the design of this year's edition. We also wish to extend a heartfelt thank you to Colonel and Mrs. Abraham Goldfarb, whose contribution gave us the opportunity to publish the journal entirely in color this year. Additional thanks to our readers and their constructive feedback as to how we can make a stronger journal, year after year.

Finally, we would like to recognize our faculty advisor Dr. Mabrouk for her tireless patience and invaluable advisement in each year's Gold Star Journals. Her dedication to the journal has helped us countless times, and we are sure that she will be a guide for future editors, long after we have left.

Jane Ma, editor-in-chief

Luis Miguel Parrado, editor

Jennifer Burch, editor

Lauren Seedor, editor

Ryan Leach, editor

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The Ebola Epidemic: An Ethical Dilemma

By Matthew Scalise



Matthew Scalise is pursuing a B.S. in Biology and a minor in Spanish. He has received Gold Stars 5 semesters and is actively involved on campus, serving in leadership positions on a number of clubs. After graduation, he hopes to attend medical school.

ABSTRACT

The Ebola virus first appeared in 1976 in West Africa; the current outbreak in West Africa, however, is the largest Ebola outbreak since it was first discovered. The lack of infrastructure and political instability within the countries most affected by the virus have illustrated the extreme inefficiencies within their respective health care systems. Due to the ease with which this virus can travel, the international community has stepped in to provide medical aid and assistance. In certain cases, experimental drugs have been given to those who have the virus despite improper testing and oversight. As a result, a number of ethical issues have been raised.

From smallpox to the common cold, viruses have both irritated and intrigued mankind since they were first discovered in the late 19th century. By definition, a virus is simply a small, non-living infectious agent containing genetic material and a protein coat with a lipid envelope surrounding it.¹ Among the many viruses known to man, the Ebola virus is one of the deadliest.

The Ebola virus first appeared in 1976 in West Africa; the current outbreak in West Africa, however, is the largest Ebola outbreak since it was first discovered. In all, the virus has spread to several West African nations. The most affected countries include Guinea, Sierra Leone, and Liberia.² Their lack of infrastructure and political instability has led to extreme inefficiencies in healthcare. As a result, these countries, among others, have been entirely dependent on foreign medical aid to stem the growing Ebola epidemic that began in March 2014.

The disease is transmitted and spread through contact with blood, secretions, organs, or bodily fluids of infected humans or other mammals. Those that are infected remain infectious as long as their blood and bodily fluids contain the virus. The most common symptoms of the disease are fever, vomiting, diarrhea, fatigue, impaired liver/kidney function, along with internal and external bleeding.² If left untreated, a person who has contracted the virus generally has a poor prognosis with only several weeks or so to live. As such, it is crucial that victims get the treatment they need. Nevertheless, the attention this virus has received has raised a number of ethical questions regarding the handling and management of medical care for those exposed to Ebola. While in certain contexts, some actions may seem the most beneficial, it may be the opposite in others.

Before these issues can be discussed,

the term “ethical” must first be defined. According to my interpretation of this concept (and what will be used for the purposes of this paper), an action is deemed “ethical” if it confers basic human dignity to another with no bias or consideration of race, gender, religion, etc. What follows is a list of some of the ethical questions that have been raised in light of the Ebola epidemic:

SHOULD UNAPPROVED,
UNTESTED DRUGS BE GIVEN
TO VICTIMS OF EBOLA?

Due to the horrific and painful nature of the virus, medical teams must work fast to help those who have come into contact with the virus, and prevent it from being transmitted to others. In the case of American missionaries, Dr. Kent Brantly and Nancy Writebol, Ebola was again close to adding another number to its death toll. Upon knowing that they were infected, and the short period of time they had to act, the two missionaries elected to receive a little-understood treatment by giving informed consent; informed consent can only be given if the patient has a “clear appreciation and understanding of the facts, implications, and consequences” of the intervention according to the World Health Organization’s (WHO) definition.³ While slight success had been seen in animal trials, nothing had been tested on humans. Therefore, questions were raised concerning whether the two missionaries truly knew the potential consequences of their decision to receive treatment. Understanding the implications of intervention, WHO noted,



Ebola Virus Under Microscope⁸

“Ethical criteria must guide the provision of such interventions.” They went on to say that any interventions can only be deemed ethical if they can have “transparency about all aspects of care, informed consent, freedom of choice, confidentiality, respect for the person, preservation of dignity and involvement of the community.”⁴ Thus, WHO made it clear that these criteria must be met in order for the two missionaries, or any patient for that matter, to receive treatment. Still, they stressed that they did not want to establish a precedent in which health officials, “start using untested drugs in the middle of an outbreak.”⁵ Nevertheless,

some have disagreed with this WHO panel, citing that only a few of the panelists “had any professional background in bioethics or medical ethics.” What’s more, no representatives from countries affected by Ebola were represented.⁶

Overall, the WHO along with other international health agencies have appeared haphazard in their commitment to fighting the virus, and as a result, destroyed their credibility with nations who already have distrust of foreign aid.⁶

The AIDS epidemic of the 1980s draws many similarities to the present Ebola epidemic that is sweeping West Africa. Like the current Ebola outbreak, improperly tested drugs were pushed through federal agencies, such as the FDA, and given to sick patients in order to stem public panic. Looking back, the AIDS epidemic of the 1980s was an ethical nightmare; research papers about the virus were not adequately vetted, drugs were not

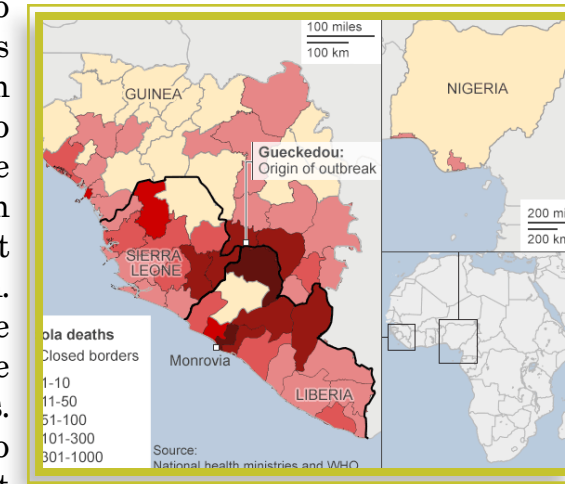
properly tested, victims of the disease were unfairly stigmatized, etc. Most notably, the drug Zidovudine (AZT) was pushed through the FDA in a record time despite objections from health providers over its many terrible side effects.⁷ In talking about the Ebola outbreak, the spokesperson of Doctor’s Without Borders (MSF) noted, “It is important to keep in mind that a large-scale provision of treatments and vaccines that are in very early stages of development has a series of scientific and ethical implications.” MSF cites that it is a physician’s mandate to “do no harm” and, in fact, this drug may do more harm than good. While the two missionaries appear to be Ebola free, the long-term effects of the drug are not understood or even known. The adverse effects of the drug could be far worse than that of the virus. Granted, it is difficult to weigh this idea in hindsight when both workers appear to be doing well. However, international condemnation of the decision to use untested drugs would most likely result if the interventions had not worked. Lessons of the AIDS crisis should be applied to the current Ebola outbreak. Caution, above all else, should be paramount.

Having said this, it is my belief that WHO, in conjunction with the CDC and other healthcare organizations, made the right decision in allowing the two missionaries to receive treatment. Namely, WHO convened a panel of experts to discuss the ethical implications of treatment. While some may argue that the panel did not have sufficient resources—in terms of representation—to come to its conclusion, I believe WHO made

their best effort in light of the pressing nature of the virus and the politics of the situation. Likewise, the two missionaries gave informed consent as per hospital records, knowing full well the gravity of their situation (according to WHO’s definition of informed consent). Because the two were in desperate times, they had to resort to desperate measures to avoid facing a painful death. I too would have made the same decision if I were in their shoes. Ultimately, researchers can study the two Ebola survivors who received the vaccine in order to incorporate it into data that can undergo FDA scrutiny and approval. Health officials provided the most ethical treatment by respecting the wishes of their patients and providing them with a high level of care at the forefront of scientific innovation.

WHO GETS THE
DRUG? WHO
MAKES THIS
DECISION?

With a potential treatment shown to be effective in Ebola patients, the next step in preventing the spread of Ebola is deciding who gets the necessary drugs. As of today, over 1000 West African men, women, and children have died as a result of the virus yet none have received any of the experimental drugs tested in the United States. Addressing this issue, Dr. Philip Rosoff, director of clinical ethics at Duke University, noted, “The few patients who have been treated with this first-in-people drug for Ebola have all been white residents of Europe and of the United States, a fact that could raise issue of preferential treatment.”⁷ Undoubtedly, the resources of developed nations such as the United States



Countries Affected by Ebola⁹

makes its citizens more applicable to receive treatment; the question now, however, is how to develop an implementation strategy to test the viability and effectiveness of the drug. According to the Center for Disease Control (CDC), some people who have Ebola will recover spontaneously. Therefore, if the drug is given to a sick Ebola patient and he or she dies, it is difficult to determine if he or she simply died from the virus or if the drug did not work. Randomized clinical trials can be the only solution to determine the drug's effectiveness.⁷ Still, this takes time, there can

be inherent selection bias, and it does not give the treatment to a portion of the people that need it the most. Speaking to NBC news, Dr. Rosoff explains that purporting a "miracle" treatment can also be detrimental to patients. For example, a new technique in treating

late stage breast cancer was published in 1986 and considered a "miracle" therapy at the time.⁷ As a result, many sick women urged their health care providers for this treatment but, later data showed that the results of the procedure were "marginal at best," with many women dying from the treatment itself.⁷ Similarly, interventions to combat Ebola cannot ethically be advertised without proper analysis in human trials. Likewise, a clear understanding of the financial costs related to treatment of the disease must be understood in order to treat patients as efficiently as possible; these cost considerations include where to treat patients, where to dispose of their waste, how to transport them, and if quarantine is necessary, among other things.

Assuming that the experimental

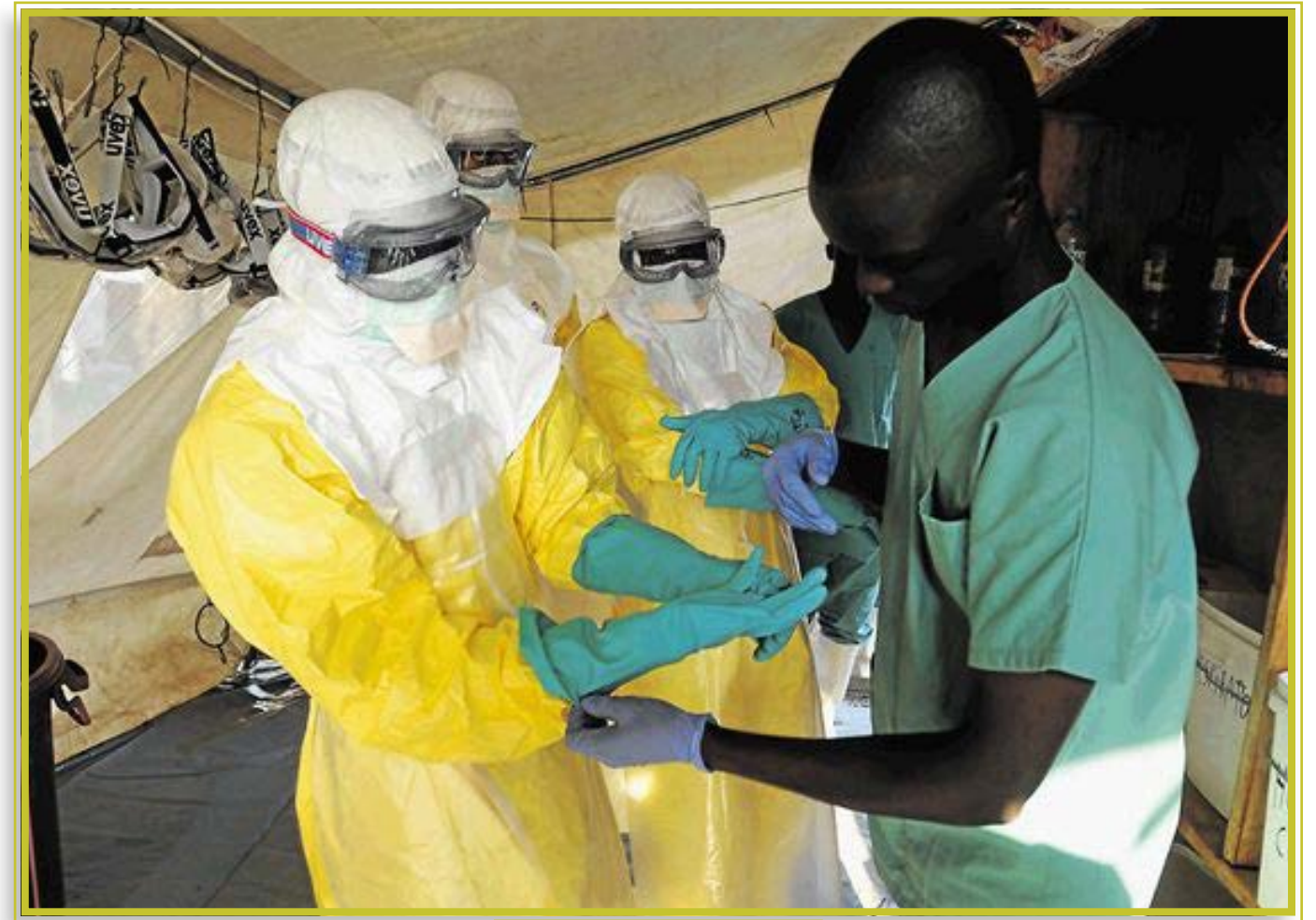
drugs used on the missionaries are approved by a regulatory agency, WHO should use its international clout and resources in conjunction with other non government organizations (NGO) to devise a double blind clinical trial that tests the effectiveness of the drug on communities of Ebola patients; some will receive the drug while others will only receive the normal standard of care. This limits the issue of one "deserving" treatment over another due to status, wealth, or other such notions. Eventually, an approved, regulated treatment can be agreed upon. Next, it would

become the role of the international community to devote its resources to implementing this treatment because of the political, social, and economic effects it may have on each country despite it possibly being outside its own borders. If a treatment is properly implemented,

the financial costs of the epidemic will be very much limited as it will ultimately help put victims of the virus on the road to recovery.

While the previous ethical concerns are very important, there are countless more that need to be considered when analyzing the situation. It is the role of a scientist to identify and understand ethical issues in areas of science and mitigate them as much as possible. An adherence to morality and the common good helps to minimize potential problems concerning ethics. The Ebola outbreak is as intertwined with healthcare, politics, and economics as it is with culture, tradition, and morality. It is the duty of researchers to sift away these entities to find the solution that affects the most positive outcome.

It is the role of a scientist to identify and understand ethical issues in areas of science and address them as much as possible.



Doctors in Africa¹⁰

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Perceived Risk of Developing Cardiovascular Disease Among African Americans

By Erik Usher



Erik Usher is Lima Company's Academic Officer, he will graduate in May with a Bachelor of Science degree in Biology. He has earned a Citadel Scholars Scholarship and is a member of the honors program. He and John Overcash won the 2014

Citadel Student Research Conference with a project assessing the wetland qualities in a Citadel owned property. Erik will be attending medical school at Campbell University in the fall and plans to become an interventional cardiologist.

ABSTRACT

Cardiovascular Disease (CVD) continues to be the leading cause of death in the United States. Racial disparities in CVD incidence and mortality between African Americans and whites are well documented. CVD prevention includes healthy lifestyle behaviors, but the extent to which individuals believe that they are at risk for developing the disease is an important factor in health behaviors. Risk education that enhances knowledge and comprehension of risk factors may address perceived risk of developing CVD. The purpose of this study was to compare the effects of alternate strategies for risk education on changes in perceived risk of CVD in a community-based sample of African American men and women.

INTRODUCTION

Cardiovascular Disease (CVD) has been the leading cause of death in the US for many years. It affects all demographics. Despite the overarching universal nature of the disease, education, socioeconomic status, and income create disparities regarding clinical outcomes and risk factors.¹ Racial disparity is well documented in the risk of death from CVD among white and black populations. African Americans (AA) are between 30-50 percent more likely to die from CVD than whites.² CVD is three times more likely to develop in AA men and women than in the white population.³ Within AAs, women are most at risk for CVD. However, the authoritative data on the dangers of CVD does not translate to the public. In a nationwide American Heart Association (AHA) study from 1997, the data showed that a very small percentage (7%) of women were aware that CVD was their principal health risk. While awareness is increasing (roughly 30% shift in 6 years), the majority of women are not conscious of the threat posed by CVD.⁴ Of the improvements noted, AA and Hispanic women have made the least progress with risk factor understanding.⁴ Many factors are thought to contribute to this disparity. Lower socioeconomic status, increased depression rates, discrimination and hostility levels are psychosocial risk factors that disproportionately affect AA populations in comparison to whites.^{2,5} These psychosocial stressors have been shown to alter physiological pathways such as inflammatory cascades and the parasympathetic/sympathetic nervous systems. This is thought to be one of the reasons that socioeconomic status has been connected with higher death rates.⁶

Perception of CVD risk is poorly associated with actual risk. Inaccuracy in risk assessment is common. In Hussein et al's study

assessing the accuracy of perceived risk, 66% of participants were inaccurate in reporting their 5-year risk of developing CVD. This inaccuracy is mostly due to incorrect optimism or underestimation of risk.⁷ In other studies patients, regardless of socioeconomic status, improperly perceive their risk of CVD (both inappropriate optimism and pessimism).⁸ In some cases, patients will report a low perceived CVD risk that can be linked to educational levels and healthier lifestyle choices. This suggests that more affluent patients, who have better access to healthcare/preventive measures, tend to believe that they are healthy.⁹ Recognition and knowledge of the dangers and risks associated with CVD is vital for the population. The Health Belief Model states that altering one's patterns of behavior associated with CVD risk requires knowledge that one is subject to developing CVD.³ Development of counseling strategies for primary care physicians to use with people who are at risk is crucial to stop their underestimation of risk.

In this report, data from the Triumphant Living Collaborative Risk Education Study (TLCRES) was utilized, which aims to evaluate the effect of integrated versus disease specific counseling on behavioral and psychological outcomes in AA men and women. TLCRES enlisted a sample size of 530 AA men and women from the Philadelphia area. Many other large scale surveys of CVD risk had previously homogenized ethnic groups, reducing the specificity and obscuring variations within races.³

Despite the universal nature of the disease, education, socioeconomic status, and income create disparities regarding clinical outcomes and risk factors.

The specific aims for this study are to:

1. Identify factors that have a significant independent association with perceived risk of developing CVD. The focus of this aim is to establish the baseline perceived risk of the participants from the initial phone interview, and to determine if any socio-demographic factors; such as age, gender, marital status, income, education and health insurance status; are significantly associated with risk perceptions. SAS software was used to perform all statistical analysis of data from TLCRES that is reported here.
2. Examine changes in risk perceptions from baseline to 1-month follow-up. The focus of this aim is to conduct a longitudinal analysis of changes in risk perceptions to determine if any significant changes in these beliefs occurred from baseline to 1-month after the counseling intervention. Using statistical analysis, changes in risk perception between the two intervention groups (integrated versus disease specific) were compared.

By understanding baseline perceived risk, any demographic factors that are associated with disparities may be identified. By comparing educational counseling techniques, primary caregivers can improve risk education and develop more effective intervention strategies. Identifying individuals who are most and least likely to believe that they are at increased risk for developing CVD, we can determine which groups should be targeted for risk education interventions, in order to reduce racial disparities in CVD morbidity and mortality.

METHODS

Study Population: All participants used from TLCRES were self-reported AA or mixed race with at least one AA parent, no less than 18 years old and no older than 75, and were residents of the Philadelphia area. Participants who did not meet these criteria were not included in the study. Additionally, individuals with a history of cancer (excluding basal cell skin cancer), myocardial infarction, stroke, heart disease, heart failure, eating disorder, schizophrenia, and anxiety were also excluded from the study.

Participants of TLCRES were recruited through self-referral from advertisements in newspapers and flyers. A study line at the University of Pennsylvania was provided for potential participants to receive additional information about the study. Researchers with the TLCRES conducted a screening and with eligible participants, administered a baseline telephone interview. The baseline telephone interview collected data on risk exposure activities, perceived risk, and psychosocial variables. Following the baseline survey, participants were invited to participate in the risk counseling program. Those who accepted the invitation were randomly assigned to receive either integrated risk counseling (IRC) or disease specific risk counseling (DSC) with a trained health educator. The counseling intervention began approximately 2-weeks following the baseline assessment. Following the intervention, follow-up telephone assessments were conducted at 1-, 6-, and 12-months.

DATA ANALYSIS

Utilizing SAS software, descriptive statistics characterized the participants based on socio-demographic and medical history variables. Baseline perceived risk was compared to variables such as gender, smoking

status, income level, education, employment status, and marital status using chi-squared analysis. Furthermore, a comparison of the baseline perceived risk to the one month follow-up perceived risk was statistically analyzed using a McNemar test assessing the effectiveness of the education programs. A McNemar test was also run to determine if significant differences existed between counseling types (IRC or DSC). Controlling for

Variable	Level	n (%)
Gender	Male	227 (43%)
	Female	303 (57%)
Marital status	Married	62 (12%)
	Not married	467 (88%)
Education level	≥ Some college	260 (49%)
	≤ High school	270 (51%)
Employment status	Employed	177 (34%)
	Not employed	349 (66%)
Income level	> \$20,000	237 (48%)
	< \$20,000	254 (52%)
Health insurance	Yes	414 (78%)
	No	115 (22%)
Age	Mean (SD)	48.2 (10.7)
Body mass index	Mean (SD)	29.9 (6.6)

Table 1. Sample characteristics for cohort of 530 African American participants

demographic variables, a logistic regression model was also utilized to determine factors that influenced reporting perceived risk.

RESULTS

The sample of 530 African American participants was relatively diverse regarding socio-demographic factors (Table 1). A majority of the participants were female (57%), unmarried (88%), had not gone to college (51%), were unemployed (66%), made less than \$20,000/year (52%), and had health insurance (78%). The average age of the participants was 48.2 years, and participants had an average body mass index of 29.9 kg/m². Chi-Squared analysis (Table 2) of baseline demographics showed that demographic factors did not have significant independent associations with

Demographic	Heart Attack	Heart Disease
Gender	0.4939	0.7467
Smoker	0.1514	0.0044*
Income	0.0663	0.2237
Education	0.8871	0.5208
Employment	0.6017	0.745
Marital	0.8773	0.6388

Table 2. P-values for Chi-Squared tests of association of demographic factors versus accuracy of perceived risk. *significant at =0.05

perceived risk of developing heart disease (HD) or heart attack (HA) with the exception of smoking status and perception of HD (X²=8.1024, p=0.0044).

There was a significant increase in the proportion of participants who perceived that they were at risk for HA from baseline to one month follow-up for all participants in both counseling groups. At baseline, 10.04% of participants reported to be at risk compared

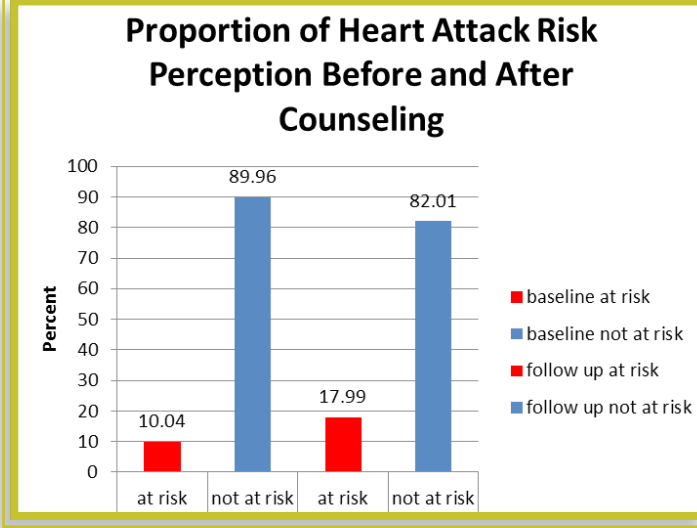


Figure 1. Percentages of subjects who self-reported to be at risk for heart attack before and after counseling.

to 17.99% at follow up (McNemar=7.3673, p=0.0066) (Figure 1). Additionally, there was a significant increase in the proportion of participants who perceived that they were at risk for HD from baseline to one month follow-up. At baseline, 13.81% of participants reported

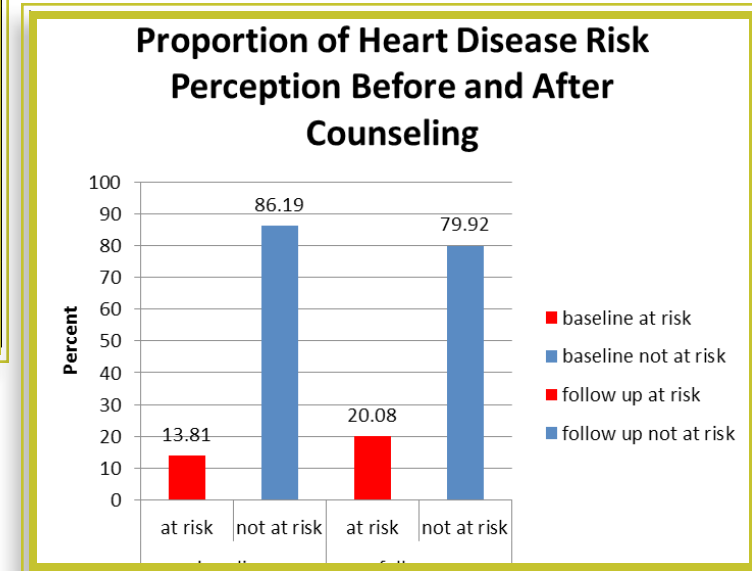


Figure 2. Percentages of subjects who self-reported to be at risk for heart disease before and after counseling.

to be at risk compared to 20.08% at follow up (McNemar=3.9474, p=0.0469) (Figure 2).

When risk perception was analyzed by counseling group, data did not support a significant change in risk perception of HA or HD after integrated risk counseling (HA McNemar=0.9259 p=0.3359, HD McNemar=0.5714 p=0.5714). However within the disease specific counseling group, there was a significant increase in the proportion of participants who reported to be at risk for HA and HD. At baseline 5.83% of participants reported to be at risk for HA whereas 17.50% reported at risk after counseling (McNemar=8.9091 p=0.0028) (Fig. 3). At baseline for perceived risk of HD, 10.83% of participants reported to be at risk compared to 20.00% after follow-up (McNemar=4.1727, p=0.0411) (Fig. 4).

The logistic regression model showed

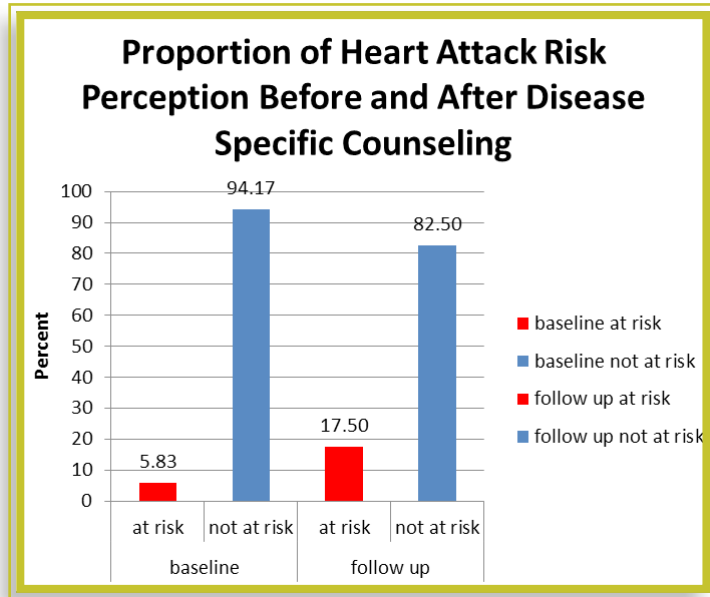


Figure 3. Percentages of subjects who self-reported to be at risk for heart attack before and after disease specific counseling (McNemar=8.9091 p=0.0028).

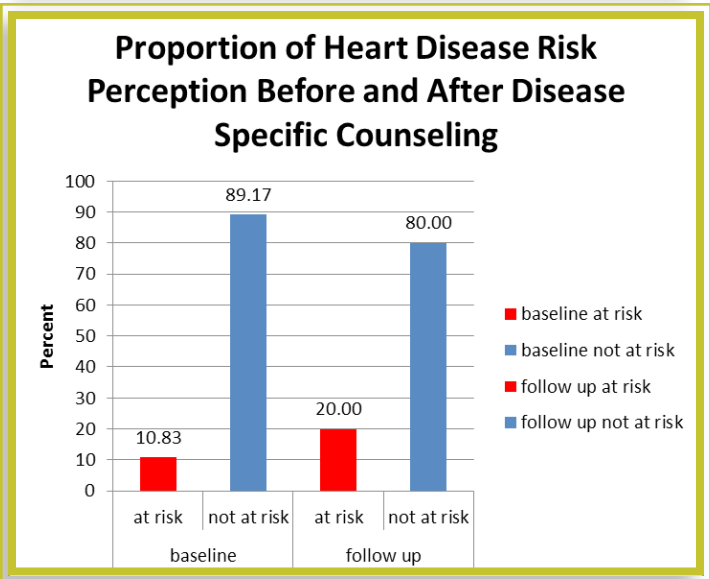


Figure 4. Percentages of subjects who self-reported to be at risk for heart disease before and after disease specific counseling (McNemar=4.1724, p=0.0411).

that two underlying factors affected the chances of reporting to be at risk for heart attack and heart disease at follow up: reporting to be at risk at baseline and obesity

(Table 3). Participants who perceived to be at

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.1859	1.7652	0.4513	0.5017
q48ac	1	1.1020	0.5140	4.5966	0.0320
rando	1	-0.1777	0.3766	0.2228	0.6369
gender	1	0.5629	0.4247	1.7568	0.1850
income	1	-0.6467	0.4336	2.2246	0.1358
marital	1	0.2887	0.5289	0.2980	0.5851
education	1	0.0541	0.4094	0.0175	0.8948
employed	1	0.7424	0.4387	2.8635	0.0906
hypertension	1	0.5063	0.4168	1.4755	0.2245
diabetes	1	-0.1087	0.7364	0.0218	0.8827
smoke	1	0.5302	0.4201	1.5933	0.2069
age	1	-0.0131	0.0200	0.4271	0.5134
bmi	1	-0.0330	0.0419	0.6202	0.4310
obesity	1	1.3024	0.5921	4.8381	0.0278

Table 3. Logistic regression model for socio-demographic factors and the effects on follow-up reporting to be at risk for heart attack.

risk of heart attack previously at the baseline interview were significantly more likely to report at risk at follow up (OR=3.010, p=0.0320). Participants who perceived to be at risk of heart disease previously at the baseline interview were significantly more likely to report at risk at follow up (OR=2.988, p=0.0154). The model showed that obese participants perceived risk of heart attack were more likely to report to be at risk after counseling than non-obese participants (OR=3.678 p=0.0278). Similarly, the regression model for perceived risk of heart disease showed that obese participants were more likely to report at risk after counseling than non-obese participants (OR=3.720 p=0.0207) (Table 4).

DISCUSSION

This study examined perceived risk of CVD before and after two types of risk counseling interventions. Factors relating to socio-demographics characteristics were explored to determine if significant

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.0796	1.6391	0.0024	0.9613
q48bc	1	1.0948	0.4520	5.8667	0.0154
rando	1	-0.2856	0.3611	0.6254	0.4291
gender	1	0.2998	0.4008	0.5595	0.4545
income	1	-0.5180	0.4138	1.5672	0.2106
marital	1	0.3186	0.5035	0.4004	0.5269
education	1	0.0308	0.3949	0.0061	0.9377
employed	1	0.7274	0.4184	3.0220	0.0821
hypertension	1	0.3891	0.4094	0.9034	0.3419
diabetes	1	-0.2284	0.7281	0.0984	0.7537
smoke	1	0.3565	0.4025	0.7844	0.3758
age	1	-0.0244	0.0190	1.6469	0.1994
bmi	1	-0.0353	0.0400	0.7777	0.3779
obesity	1	1.3136	0.5678	5.3515	0.0207

Table 4 logistic regression model for socio-demographic factors and the effects on follow-up reporting to be at risk for heart disease.

variations in perceived risk existed among the cohort. Unlike previous studies that found income, education and gender to be factors that affected perception of risk, our study found that with the exception of smokers, no other apparent demographic factors affected accuracy of baseline perception of CVD risk.^{4,9} The lack of significant associations does not support Mosca and colleagues' study that noted a gender disparity in perception of CVD risk in Hispanic and African American populations.⁴ Similarly, the data did not support Alwan and colleagues' study that low perception of risk is associated with income/educational levels. Smokers were more likely to report being at risk with the baseline questionnaire than non-smokers, which is expected due to widespread education on the dangers of smoking.⁹ Our data did not support the need to target specific groups within AA populations; however improvements in perceptions of CVD risk was noted from pre-to-post interventions overall controlling for both counseling groups despite insignificant increases found in the integrated counseling

group. Therefore, counseling should be utilized in all demographics to attempt to educate and eliminate racial disparity in perceived risk.¹⁰

This data supports the idea that counseling provides positive educational benefits for perception of CVD risk in African American populations. A risk perception for a disease is the first step in changing lifestyle patterns to avoid the disease entirely. Risk counseling interventions at the primary care level could be used to educate and therefore to lower instances of CVD in African Americans. Studies have found that physician counseling plays an important role in health promotion and prevention of CVD.¹⁰ Furthermore, the data supported disease specific counseling as being a more effective method for raising the perception of CVD risk compared to the integrated counseling group. Disease specific counseling provides more detailed and targeted descriptions of CVD rather than presenting a broad spectrum of information about CVD and Cancer. Literature supports the effectiveness of tailored counseling techniques for improving CVD prevention and health outcomes that extended to the one year follow up assessment.¹¹ Our study similarly found that counseling interventions on risk factors for CVD can also be effective.¹²

The data also supports the idea that those who perceive themselves at risk sustain and increase this perception after participating in a risk counseling program. The data revealed that risk perception increased for all socio-demographics and within both types of counseling groups, showing that educational programs on CVD are needed across the board. Moreover, it is encouraging that obese participants were 3.678-3.720 times more likely to raise their perceived risk at follow-up. This shows that risk counseling is effective for those who are most at risk for developing CVD.

This is possibly the most important finding of the study. Studies show that increased body fat increases frequency of CVD, severity and death.¹³ This is due to increases in blood pressure, ventricular hypertrophy, metabolic syndromes caused by resistance to actions of insulin, and sedentary lifestyle choices.¹³ By raising the perceived risk of HA and HD in a group that is most at risk, risk counseling can be viewed as an effective resource for those who perceive themselves at risk and for those with actual risk for CVD.

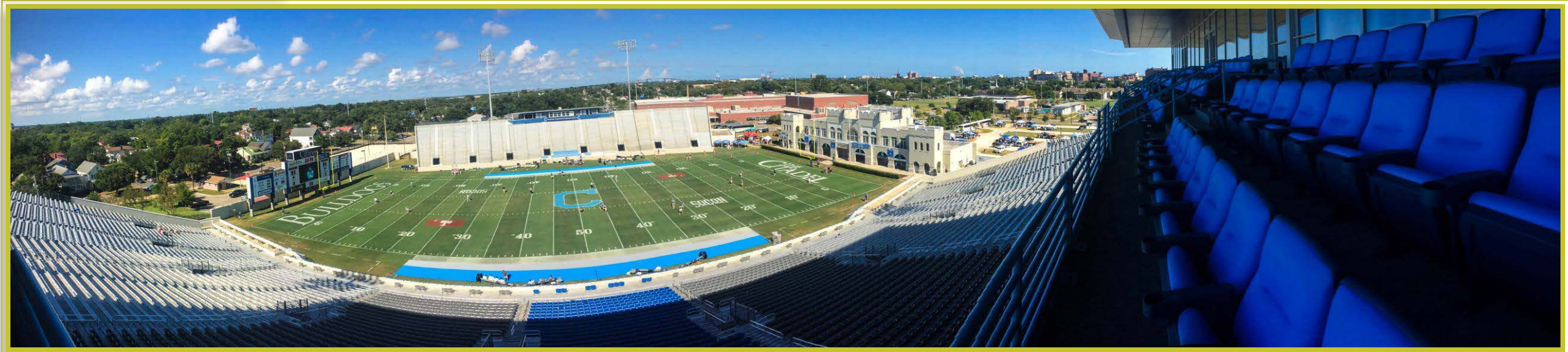
There are some limitations to this study. African Americans were the only racial group included in the sample. Therefore findings from this study are limited in generalizability to other racial groups. Additionally, the cohort was limited to one geographic location, limiting its transferability to other settings in the U.S. Future studies could expand the geographic areas of the research to determine if the outcomes are similar. The results of this study only depict the 1-month follow-up outcomes. Follow-up assessments were also conducted by TLCRES at 6-and 12-months post the risk

counseling intervention. Therefore, it will be important to examine the outcomes more longitudinally to determine if the effects of risk counseling found at 1-month are sustained over time. Lastly, a comparison to actual risk using the Framingham model should also be investigated. This is important because research has shown that people, regardless of socioeconomic status, improperly perceive their risk of CVD.⁸ There is also a paucity of literature examining actual risk versus perceived risk in minority populations. Thus, investigating the relationship between actual risk and perceived risk would provide information that could be translated into clinical settings to augment preventative care and treatment protocols, and ultimately improve health outcomes and decrease disparities in CVD.

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"Game Day"



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Achievement Gaps and Affirmative Action: Social Responsibility?

By James McManus



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ABSTRACT

Education often does not receive as much publicity as other issues in the public eye, but education concerns tend to divide the country. Achievement gaps among genders, races, and socioeconomic strata are often not discussed but are at the heart of many of our nation's issues, from unemployment numbers to average salary and overall quality of life. Affirmative action, favoring students with a certain feature, characteristic, or situation in college placement, is a controversial way to fill quotas in incoming college classes in an attempt to close achievement gaps. Can we close achievement gaps by catering to a "lowest-common denominator" in classes? Is affirmative action an ethical and effective way to eliminate achievement gaps?

Achievement gaps are a point of contention among educationalists today, particularly with the question of how to fix them or reverse the process. Closing a gap requires two sides of the divide coming together, moving either half to the other side or both to meet in the middle. When dealing with curriculum, students, and learning styles, the movement is more difficult. If a society wants to eliminate these gaps, regardless of the consequences, they could simply cut curriculum down to cater to the lowest achievement level: the 'lowest-common-denominator' approach. This is not particularly appealing to a society that wants to grow and to encourage hard work as it would essentially remove the incentive to excel. The preferable way to fix these gaps then is to bring all students to the highest levels of achievement, no easy (or cheap) task, but the empowerment of all students is significantly better than the degradation of some. By properly writing and implementing curricula, schools can improve the performance of low-achieving students while challenging all levels of capability, thus closing the achievement gap by raising all students to the higher standard.

Since the 'lowest-common-denominator' approach would technically solve achievement gaps, one must examine costs and benefits of this method and determine its feasibility. A good curriculum challenges all students, but not to the point that they feel helpless and cannot achieve results. Depressing all students to the lowest level of academic performance could make struggling students feel more empowered as the tasks are now at a comfortable achievement level. According to Pianta et al. (2008, p. 369), students learn best while being challenged and while the lowest level of students may feel more comfortable, many of the students accustomed to higher-level work would become restless and frustrated at the ease with which they complete

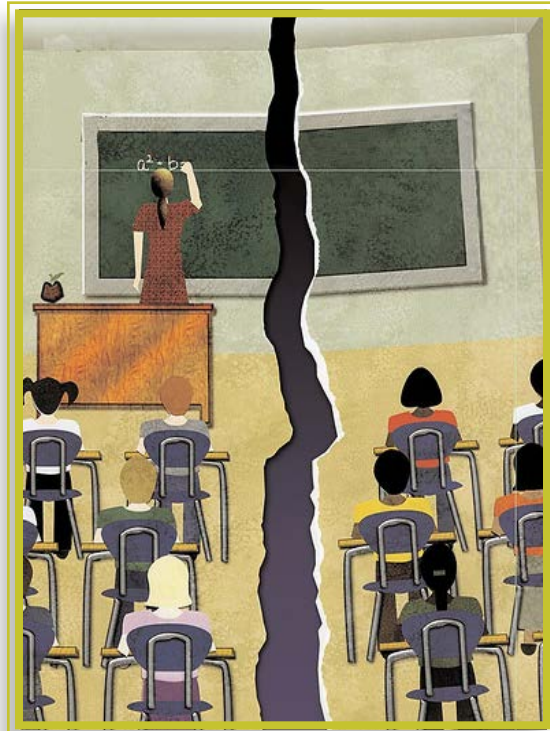
assignments. Joseph Robinson (2008) points out that part of this low-achieving group are Hispanic and language-minority students and that their performance in reading and math in early years (kindergarten, first grade) can be improved through ability groupings. There are benefits for every student in an ability group, and Robinson (2008, p. 142) explains this is due to the "level-appropriate, small-group, direct instruction children receive." Robinson (2008, p. 142) continues that language-minority students benefit greatly from the "opportunities for exposure and practice of reading in English," which they would not get in "whole-class instruction... targeted to the average level of the class" because of a lack of "direct-instruction accommodations." If all students were made to learn at the same pace and level as students whose first or primary language is not English, it is obvious there would be a great deal of frustration and possibly even resentment towards these minorities. If ability groups allow struggling students to be helped in a way that also benefits high-achieving students, it could be a reasonable alternative to lowest-common-denominator curricula that simply lowers standards and achievement.

When setting the curricula for a school district, both high- and low-achieving students should be taken into account in order to produce a challenging but manageable syllabus. Student achievement, Pianta et al. (2008, p. 366) argues, takes "the right mix of curriculum, professional development, and instructional supports" into account. Relevant and well-written curricula then, are crucial to encouraging student development. In order for curricula to be considered relevant to a school, it should take into account the highest- and lowest-performing students and provide appropriate material to cater to those skill levels (and everywhere in between). It should

be left fairly open-ended and allow or encourage ability group divisions, especially in a diverse student population. The curricula should be tailored towards the school culture, including considering demographics and socioeconomic backgrounds of both students and the community at large. Well-trained teachers should write the curriculum (with input from administrators) because of their proximity with the students and their knowledge of the school's culture. Their proximity could make them pessimistic and lack confidence in their students' abilities, which is why administrative support would be useful. In fact, teachers should be provided with more all-around autonomy in regards to the implementation of the curriculum. According to Linda Darling-Hammond and Laura Post (2000, p. 136, 143), a lack of "professional autonomy" is one of the main factors perpetuating teacher shortages in struggling schools, particularly because of over-prescriptive lesson plans and curricula which leave teachers little "adaptability." Darling-Hammond and Post (2000, p. 128) also stress that "teacher effectiveness" is "an extremely strong determinant of differences in student learning" and a source of student inequality and, therefore, achievement gaps. Increases in teacher autonomy would allow a school to tailor a curriculum directly to their students, providing teachers with enough leeway and ability to adapt and suit individual students' needs, leading to an increase in teacher effectiveness, and cutting down on achievement gaps.

Beside this new, teacher-written curricula tailored towards providing each student with individual support, there must be an increase in funding. According to Darling-Hammond and Post (2000, p. 127), "the wealthiest 10 percent of school districts in the United States spend nearly ten times more than the poorest ten percent" which are

generally in “central cities” and have a high concentration of “poor and minority students,” larger class sizes, “fewer and lower-quality” resources, and “less qualified and experienced teachers.” These poorer districts are generally where the lowest achievement resides, particularly due to their lack of resources and inability to attract well-trained teachers. These achievement gaps are not just in test scores either: they have far-reaching and damaging effects, sometimes to entire ethnic groups. As Sean Reardon and Claudia Galindo (2009, p. 854) highlight, educational outcomes of Hispanic students (often large portions of populations in poorer schools) are “well behind” those of their white, Asian, and sometimes black counterparts, especially with regard to “high school completion rates” and the numbers who “attend and graduate from college.” Darling-Hammond and Post (2000) are adamant that educational outcomes of these



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minority populations in poorer schools can be improved through more resources and better teachers, both of which require more money allocated to education. Lisa Guisbond and Monty Neill (2004, p. 13) point out that “good teachers already know which students are falling behind,” but even if they are ‘good’ (well-trained and effective), many lack the resources or support to solve the problem themselves.

Simply purchasing better textbooks and other materials fixes the problems with insufficient resources, but ensuring the presence of “good teachers” requires money

put towards training and teacher education. According to Darling-Hammond and Post (2000, p. 133, 130), effective educators are better with “curriculum development, classroom management, student motivation, and teaching strategies” and that “every additional dollar spent on more highly qualified teachers netted greater increases in student achievement” than money spent on other school resources. Therefore it is imperative that money be spent not just on more resources, but particularly on teachers’ training, hiring, and salaries. Each district needs to be sure that their teachers can handle classrooms diverse in ethnicity, background, and ability, as well as a robust curriculum, designed to afford them the opportunity to connect with each student individually on both instructional and emotional levels. Pianta et al. (2008, 369) explain that teachers should integrate emotional aspects into “instructional activities, discussions, and even transitions” in order to create an environment with “personal relationships, high expectations, a productive learning orientation, engaging activities that stimulate thinking as well as social interaction, and regular critical feedback and questioning.” A great deal of training and experience is required to achieve successful integration of each aspect mentioned by Pianta et al. (2008), but in order to create a safe and productive learning environment, connect with a diverse group of students, implement the curriculum, and close the achievement gap, the funding

allocated for teachers must increase. A ‘lowest-common-denominator’ approach to closing the achievement gap would only result in lowering standards across the board. While this would technically narrow the gap between the high- and low-achieving students, ability groups are a much more efficient and successful way of doing so. Ability groups do not have the adverse side-effects that come from tailoring a curriculum specifically towards struggling students, and they can help students of all backgrounds, making it a much fairer and more successful solution. Teachers should assist in writing curricula for their own school, particularly because they understand their students and the culture of the community. Any curricula designed should take into account as many different student achievement groups as possible and allow teachers to tailor aspects towards specific individuals. For many minorities, especially Hispanics and language-minority students, the achievement gap is not just in test scores, but in overall possible educational attainment. Many schools with large minority populations are underfunded and in less affluent areas. In order to successfully implement an achievement gap-closing curriculum in these schools, more funding and better trained teachers are necessary. If curricula is properly written (to challenge all students) and implemented appropriately (with increased funding and by well-trained teachers), it can tackle achievement gaps better than could a ‘lowest-common-denominator’ policy.

What if schools did not just have to close achievement gaps, but were able and required to facilitate socioeconomic mobility among students? The American and indeed British political spectrums have recently been consumed with debate regarding “affirmative action” and other similar policies to increase diversity in schools. One extreme

allocated for teachers must increase.

argues that socioeconomic and cultural mobility will not happen without being forced by strict government intervention. The other is adamant that if students of a low socioeconomic status work hard enough, they will be afforded the same opportunity as those who are more monetarily prosperous and that they should not be treated any differently. Policies intended to increase diversity through promotion of a minority, like racial or ethnic quotas, can sometimes cause “positive discrimination” against the majority and create or inflame tensions. While every country’s educational systems and cultures are different, both schools and universities should be penalized for any discrimination of socioeconomic status, either “positive” or negative, in order to promote socioeconomic mobility.

It is vital to prevent “positive discrimination” of minorities because to do otherwise would be unfair to all involved (Bibbings 2006, p. 74). One cannot and should not justify substituting one form of discrimination for another, which is reason enough why positive discrimination should be avoided. A student’s socioeconomic status is based almost solely on aspects of life outside their control, like “parental finances and employment histories as well as their experience of (higher) education,” a community’s overall wealth and political and religious attitudes, and the “existence of schools” (Bibbings 2006, p. 76; Kravdal 2004, p. 180). If a student works hard, they should be afforded the opportunities which accompany their efforts. Forcing schools into academic “dumbing down” or any lowering of admissions standards is also unacceptable as it “unfairly discriminates against applicants from good schools” and those who work hard and come from less privileged backgrounds (Bibbings 2006, p. 74). The culture of the United States

allocated for teachers must increase. A ‘lowest-common-denominator’ approach to closing the achievement gap would only result in lowering standards across the board. While this would technically narrow the gap between the high- and low-achieving students, ability groups are a much more efficient and successful way of doing so. Ability groups do not have the adverse side-effects that come from tailoring a curriculum specifically towards struggling students, and they can help students of all backgrounds, making it a much fairer and more successful solution. Teachers should assist in writing curricula for their own school, particularly because they understand their students and the culture of the community. Any curricula designed should take into account as many different student achievement groups as possible and allow teachers to tailor aspects towards specific individuals. For many minorities, especially Hispanics and language-minority students, the achievement gap is not just in test scores, but in overall possible educational attainment. Many schools with large minority populations are underfunded and in less affluent areas. In order to successfully implement an achievement gap-closing curriculum in these schools, more funding and better trained teachers are necessary. If curricula is properly written (to challenge all students) and implemented appropriately (with increased funding and by well-trained teachers), it can tackle achievement gaps better than could a ‘lowest-common-denominator’ policy.

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ensures one can improve one's life with hard work and perseverance. Therefore, any policies regarding increasing diversity in American (or indeed in any) schools should not remove incentives for hard work. "Positive discrimination" of any kind is unacceptable in promoting socioeconomic mobility of students as it essentially promotes vengeful discrimination and leads to the "dumbing down" of academic and acceptance standards for all students, removing incentives for hard work.

Colleges and universities should avoid positive discrimination at all costs as there are other ways in which they can facilitate socioeconomic mobility. Florencia Torche (2005, p. 316) determined that "inequality of educational opportunity (IEO)" is widespread and leads to "persistent inequality," requiring "massive educational expansion and a varied set of policy interventions to reduce." Many of the "widening participation" policies of which Lois

Bibbings (2006, p. 74) speaks are diverse and would be acceptable for use as most do not cause positive discrimination. She splits these policies into two groups: "hard" options, which include "quotas or preferential selection methods," and "soft" options, also termed "assistance measures" (Bibbings 2006, p. 83). While hard options can cause positive discrimination and for reasons stated previously should be avoided, soft options provide widely applicable and effective alternatives to discrimination of any kind. First, universities should change admissions

procedures to provide a "contextual approach" to all applications, therefore focusing on the whole student. If they find it necessary to examine grades and standardized test scores, they should be considered in the context of each school (Bibbings 2006, p. 81). It is also crucial that non-academic achievements are put into perspective; many wealthier applicants may be able to afford to complete "relevant unpaid work experience," while poorer students may have to work "for fast food companies or in the family business" in order to provide for their families (Bibbings 2006, p. 81). Universities should require "written work, additional testing, or interviews" in order to "identify merit and aptitude regardless of background" and select candidates who can perform and have "the ability to succeed" (Bibbings 2006, p. 82). These selection methods would continue to emphasize hard work while removing the barrier that economic or social backgrounds may provide an applicant.

Second, offering more financial aid opportunities, both merit- and need-based, is important and can lead to a much more diverse school population. An even simpler solution to providing financial aid in America is lowering the rising costs of attending higher education, which here tripled and in some cases almost quadrupled in the past 40 years (CollegeBoard 2013, p. 15). Third, universities and colleges should offer more support, both academic and emotional, to all students, regardless of economic background or ability (Bibbings



Cadet McManus in classroom. viii

2006, p. 80-1). This would "raise confidence, aspirations, and attainment" of students, particularly those who may not be comfortable in the new setting (Bibbings 2006, p. 81). If universities change their selection criteria (while still rewarding hard work) and provide more merit- and need-based financial aid, they can prevent any discrimination towards student backgrounds in their selection process.

Primary and secondary schools can also take steps to improve and promote socioeconomic mobility in both their student body and their community at large. One big problem among students of low socioeconomic status is that there is a certain level of mystery about higher education: they tend to think they are not "good enough" nor is it "for the likes of them," and regarding it as "highly risky and/or impossible" (Bibbings 2006, p. 77). This is more of a social problem than anything else, one which starts with the community and the students' parents. Therefore the key is to de-mystify higher education by pairing universities with schools, encouraging community outreach activities ("visits to universities, student-pupil mentoring") and creating a school-wide culture that values education (Bibbings 2006, p. 80-1). While it is important to remove the mystery from post-secondary education, it is equally as vital to inform the student (and the parents) of the many options he or she has available, including two- and four-year vocationally- and academically-oriented schools (Alon 2009). Schools should also provide students the information necessary to

make the decision to not attend college, which is also an option for students. No student, regardless of socioeconomic background, should be forced or persuaded to attend post-compulsory education against their will. The student should be informed of all of his or hers options and helped to choose one that suits their ideal career path. Primary and secondary schools should also provide the tools required to enhance socioeconomic mobility, especially helping to develop skills using "information

What if schools did not just have to close achievement gaps, but were able and required to facilitate socioeconomic mobility among students?

and communication technology (ICT)" which are essential to the use of "social services" and crucial "to be competitive in labor markets and secure higher earnings" (Mo 2012, p. 3). Programs like One Laptop per Child help to narrow the "digital divide" between students with and without access to technology, but simply exposing students to the use of computers can at least slightly improve skills (Mo 2012, p. 20). Unfortunately, giving students computers also requires better trained teachers and a well-tailored classroom structure in order to make a sizeable impact on computer skills, all of which can be expensive. Schools can improve the socioeconomic mobility of their pupils (and their communities) by providing opportunities to interact with and learn about colleges and universities, assisting in decisions regarding all post-secondary education possibilities, and enhancing ICT skills with proper equipment and support.

The practicality of such measures to increase socioeconomic mobility can be questionable, as they can be costly in time and resources, and may be deemed unnecessary by certain cultures. For example, if a country

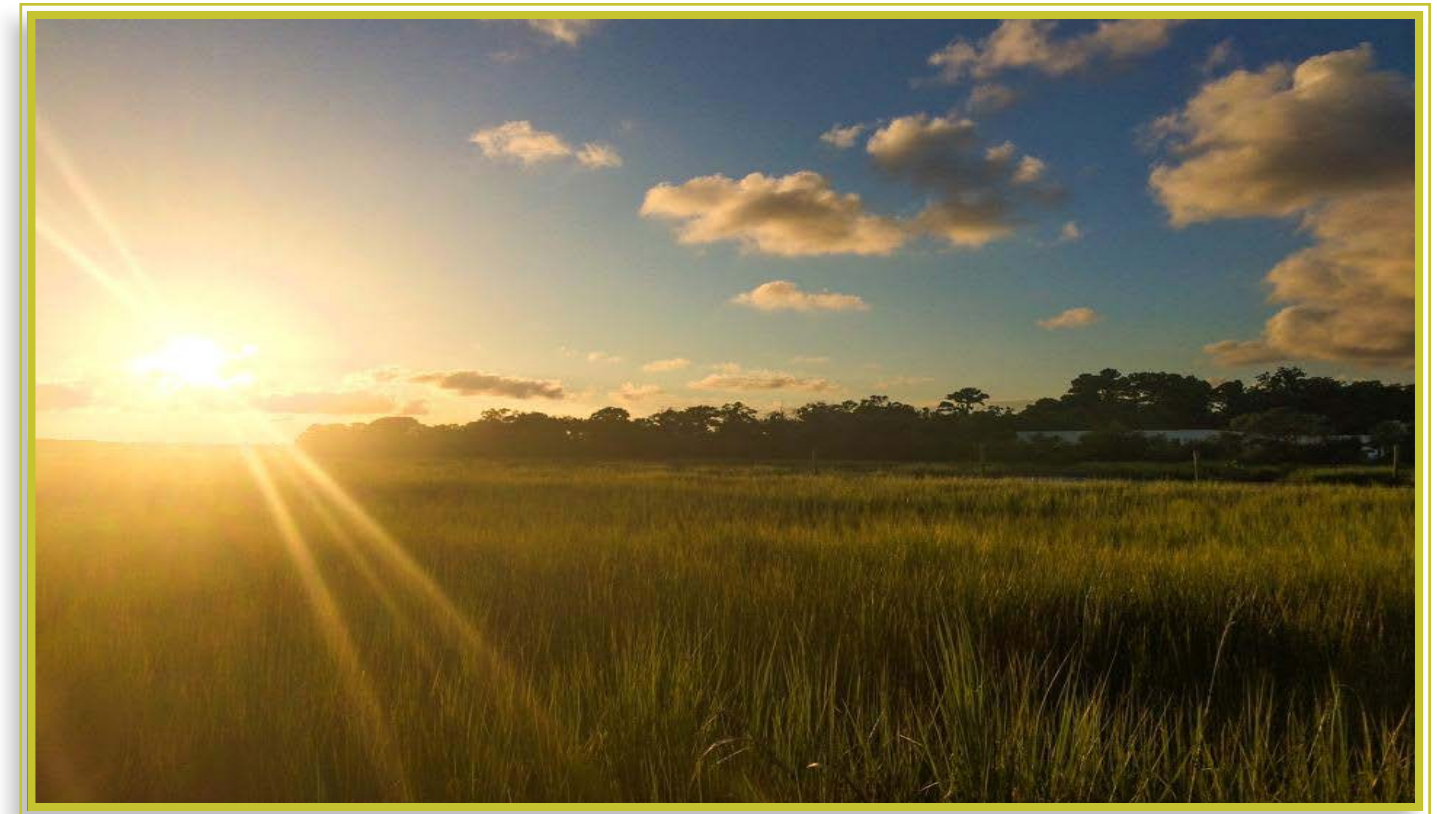
were to mandate that universities remove all economic and social discrimination from their selection processes, they would have to give the institutions time to implement these systems, and then develop some way to test them. "ICT adoption is costly," so many schools would need a budget surplus or large government grants in order to implement the curriculum effectively (Mo 2012, p. 3). Different countries also have different views on socioeconomic mobility. For example, in the United States, social class is determined by the amount one is worth monetarily, so providing students with a way to work hard and achieve their dream job is important to the culture. However, in many other nations, social status is determined at birth and therefore social or economic mobility may not be culturally as important (or one may be more important than the other). While each country must determine the amount of money, time, and emphasis they place on socioeconomic mobility, it is important for people to be able to achieve their own personal goals, regardless of social or economic class.

While all countries and cultures are different, it is important to prevent all types of discrimination in order to promote all-around socioeconomic mobility. Discrimination, positive or negative, does not promote hard work or personal betterment. Universities should adopt admissions procedures that emphasize these abilities and a student's potential, while also taking into account each applicant's individual situation, lowering costs, and providing both merit- and need-based financial aid for students. Primary and secondary schools can de-mystify higher education, providing students with personalized options for post-compulsory education opportunities, and enhance ICT skills with equipment and support from well-trained staff and parents. While practicality

may be an issue (what with high costs in both money and time), schools and universities should be penalized for not eliminating socioeconomic discrimination, therefore promoting socioeconomic mobility.

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"Golden"



"Sky Over Second"

The New Navy: From Wood to Steel

By Michael Barkley



Michael Barkley is a senior Army contract in Palmetto Battery from Indian Land, South Carolina. He will commission in May as a quartermaster. He is a history major and has a minor in law and legal studies. He has earned

Dean's List 6 semesters and Gold Stars 3 semesters.

ABSTRACT

This paper examines the impact of steel on the United States Navy. Fueling advancements in Naval thought and strategy, the introduction of steel broadened the influence of the United States all over the world. The impact of steel upon the US Navy cannot be underestimated because of the profound effect it had upon the training of US Naval Officers and the evolution of Naval warfare. The continued success of the US Navy requires that its officers understand the technological transition which drastically altered fighting capabilities.

The United States Navy prior to the Civil War was one of the top navies in the world behind Great Britain. Post-war, however, the United States Congress cut funding for the Navy, and it began to decline. While other countries were experimenting and expanding their navies, the U.S. Navy stagnated. Other issues were made a priority for the United States and maintaining a top-tier navy was not one of them. It took the realization of the need to protect American commerce and the embarrassment the Navy underwent for the institution of the Navy to transform and evolve in the 1880s. Some would argue there was no need to expand since the Navy at that time met the nation's needs. Regardless, the evolution into a steel navy led to further educational and theoretical advancements in naval warfare, which led to the broadening of the American influence on the global scale.

The United States prior to the Civil War had one of the best navies in the world, second only to Great Britain. During the Civil War, the Union Navy's mission was to blockade the Confederacy and her ports. The Confederacy did not have any allies; therefore, the battles were fought on American land and not on the sea.¹ Despite this the Navy during the war grew to about 700 ships.² Like after most wars, the military downsized, and the Navy was the first to get drastic budget cuts. Between the years 1868-1883, Congress cut on average \$20 million from the Navy's budget each year.³ This annual budget cut saw the Navy transition from a premier coastal defense force into a second-rate Navy power.⁴ The Navy shrank from about 700 ships to 45 ships about 15 years after the Appomattox surrender.⁵ In 1870, the Navy only had one ironclad, and about 2/3 of American cruisers were not operational or functional. Three years later in 1873, the Navy ranked 7th in the world.⁶ Because the Navy was shrinking annually with budget

cuts, there was not enough money in the budget for new technology to be introduced into the fleet. Worldwide other navies were quickly surpassing the United States because they had the budget to experiment and the leeway to "have expensive failures."⁷ Congress justified this and thought that they were wise by allowing the European navies to experiment and have all the "expensive failures" on their dime.⁸ To many Americans and those in Congress, the Civil War was a confirmation of the American perception that commerce was what fueled wars. The Navy's required job was to patrol the coast and protect American commerce.⁹

Aaron F. Stevens, who was a member of the House Committee on Naval Affairs, did not agree with the United States having a large Navy. Stevens argued that the "American Navy" was simply that, "American." The Navy did the job it was required to do, and it did not need to be competitive on the global scale with the European powers.¹⁰ Without funds from congress who did not want to compete, there were no plans to build or to upgrade the naval fleet. Head of the Navy Department Admiral David Porter did not encourage or push for newer technology for the Navy's ships. He believed that the change into steamships caused the Navy to regress and stressed to ship captains to use sail whenever possible in order to save money. The money that the Navy did have for ship repairs went to repairing outdated ships whose capabilities were minimal at best.¹¹

The lack of functionality and new technology would prove vital in the coming years in the 1870s and would catapult the efforts of those who were in favor of increasing the size of the Navy.

Despite the Navy's lack of size and technology it was performing its "American" missions that the government required of them. However two events, the first in 1873, demonstrated to not only the United States, but the world how far the Navy was behind the rest of the world. In 1873, an Old Civil War vessel, the *Virginus*, was caught by the Spanish gun-running weapons the United States were sending to the Cuban insurgents to try to overthrow the Spanish. The Spanish executed 49 sailors, which led to the



U. S. Naval War College, Coasters Harbor Island
Hello! Cousin Joe - I'm seeing the great outside world! Joe

Naval War College¹⁴

mobilization of the US Navy in Key West, Florida. Despite the mobilization, the Navy war did not ensue because of the inability to carry out maneuvers with old outdated ships.¹² The Navy was embarrassed again by its inability in 1879. Chile attacked Bolivia and Peru; the latter who with the US had financial interests ties. The US tried to bring an end to the war to protect American interests in Peru. The Chilean Navy, with state of the art British warships, was not fazed by the wooden vessels in the US Pacific Squadron. They told the US to back off and to 'mind their own business.' The Navy was overmatched and forced to back off and as a result was not taken seriously on the global scale.¹³ These embarrassments, both within the US sphere of influence, raised

the question of whether or not the US could uphold the Monroe Doctrine. At this point in the history of the US Navy, they were not capable of being able to prevent any potential efforts of European powers in Latin and South America.¹⁴

In 1881 James Garfield was elected President at a time when US manufacturing was on the rebound from a brief panic in 1877.¹⁵ It was not until the Garfield administration that serious steps towards Navy advancement begun to take place. After Garfield's election, Secretary of the Navy William H. Hunt appointed fifteen men to an advisory board chaired by Admiral John Rodgers, which became known as the Rodgers Board.¹⁶ This board would call for the elimination of wooden ships and the construction of steel ships.¹⁷ Despite the approval of President Chester,

who replaced Garfield after his assassination, the initial recommendation made by the board of 68 ships was disapproved. It was not until August of 1882, after negotiations, that Congress did authorize the building of two steel ships.¹⁸ Production however was stalled because with midterm elections coming up both parties wanted to take credit for passing the Harris Bill which funded construction.¹⁹ In 1883, the board recommended the construction of four steel cruisers, Atlanta, Boston, Chicago and the steel dispatch boat Dolphin. The construction of the 'ABCD' boats ended the age of sail in the Navy and propelled the Navy into the age of steel.²⁰ Technology was starting to outpace the Navy and innovations in tactics and training had to be made to adjust to these changes.

There were three institutions that



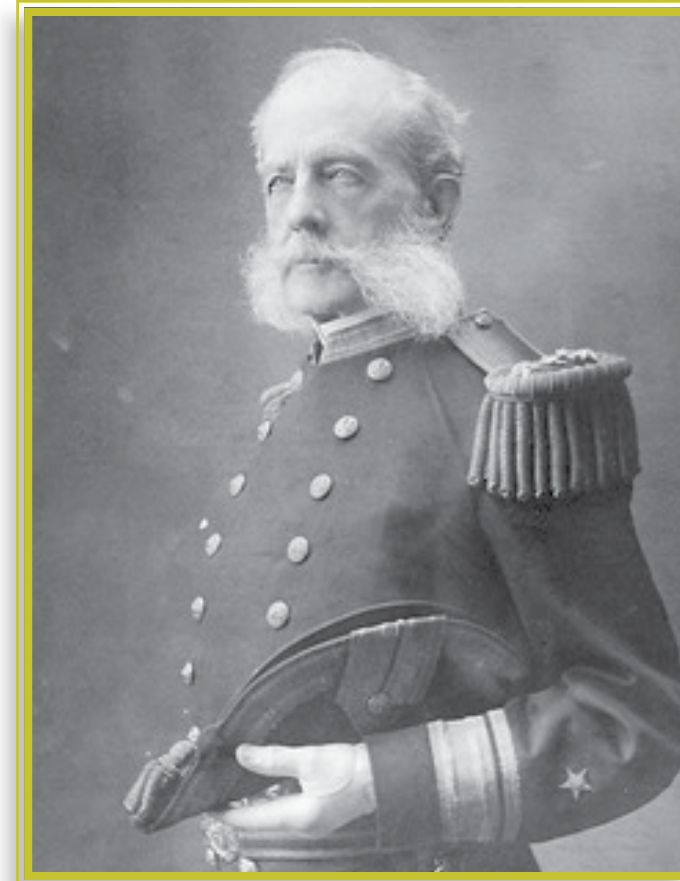
USS Atlanta⁵⁵

propelled and revolutionized Naval thought: the US Naval Institute, the Office of the Naval Intelligence and the Naval War College.²¹ The United States Naval Institute was the first of the three founded in 1874 before Congress granted the authorization of steel. The institution served as a platform for the controversy's that reflected the changes in technology. Many of these controversies that arose with the technology were products of status struggle between the not yet integrated staff and line officers. Previously heavily debated discussions were elevated by the professionalism the institute offered.²² The Office of Naval Institution, which was the brainchild of Secretary of the Navy Hunt, and was

established in 1882. The primary function of the Office of Naval Intelligence was to collect data about foreign fleets, policies, tactics and strategies. This institution regulated the flow of new information into the US Navy, which had not yet grasped how to utilize steel vessels.²³ The idea behind the Office of Naval Intelligence came from the War of the Pacific because a center became needed for information to be gathered and evaluated properly before being sent back to the fleet. President Arthur was a full supporter of these programs; he believed strongly in a strong Navy.²⁴ Arthur believed

that every "consideration of national safety, economy, and honor imperatively demands a thorough rehabilitation of" the US Navy.²⁵

The last institution that influenced naval thought was arguably the most important and that was the Naval War College. It was there that a new approach on how to utilize the steel vessels, and the tactics underwent development. Founded by Rear Admiral Stephen Luce in 1884, the college's purpose was to educate Navy Officers and bring "order to the chaos the new technology brought."²⁶ The location chosen was Newport, Rhode Island where fundamental principles of warfare were taught and how to apply those lessons on both land and sea.²⁷



RDM Stephen B. Luce⁵⁶

Rear Admiral Luce did for the Navy what General Emory Upton did for the Army. Luce had Navy officers study past Navy engagements and strategy and used these historical examples to show the underlying principles.²⁸ Luce as the founder of the War College was the first president and was tasked to create a curriculum that would teach the Navy officers all of these things. To come up with these lectures and lessons Luce selected Admiral Alfred Mahan.²⁹ Both these men were critical for the evolution of naval strategy and thought that is still being taught today.

Lucesaw the naval officer as a profession, such as doctors or lawyers that require and demand further education and certifications.³⁰ He believed that the most important education naval officers could receive was that which developed their understanding the nature of the world's navies and how they changed because of technology.³¹ He helped start the War College with the vision to raise "Naval Warfare from the empirical stage to the dignity of a science."³² Luce developed many of his early ideas of reform from his experiences at the Naval Academy and his tours of duty,

realizing that the Navy education system needed reform.³³ In a lecture given to the War College, Luce accredited the "Civil War demonstrat[ing] conclusively the necessity of a War College."³⁴ Despite Luce's early beliefs about the need for higher education for the Navy's officers, it would

not be until 1877 that Luce devoted his efforts to the establishment of the War College. In a letter to the Secretary of the Navy, the Honorable R.W. Thompson, he proposed the establishment of a school where officers could be offered higher education in their naval training. He stated that the "leading feature of the post graduate course would be the carrying of the young officers through a course of instruction in the Art of War."³⁵ The year after the War College opened, Luce handed over the presidency of the college to the head lecturer Admiral Mahan.³⁶

Admiral Mahan was selected by Luce to be "the principal and leading lecturer."³⁷ Mahan, using historical examples, argued the "effect of sea power upon the course of history and the prosperity of nations."³⁸ In one of his

most well-known lectures given at the War College, later published, Mahan declares "control of the sea is and has been a great factor in the history of the world."³⁹ Mahan's arguments and lectures went hand in hand with the viewpoints of Secretary of the Navy, at the time, Benjamin Tracey. They viewed that it was a necessity for the United States to have a great navy, in order to be considered a serious actor on the world stage. Mahan argued against coastal defense philosophy and was in favor of a more pro-active "deep water strategy."⁴⁰ Mahan's pro-active perspective on

the role of the Navy went against the opposition of those who opposed a larger Navy, such as Stevens and his notions of an 'American Navy'. Mahan demonstrated an ideological shift not only for the Navy but the nation as a whole to a more British perspective.⁴¹ He saw the "influence...

the little British islands" had on the world as a model to follow.⁴² If a small island could have a great Navy and be an imperial force, then the United States sure had the capabilities with borders on both oceans.

Mahan popularized imperialistic themes and sought to have the Navy as the focal point for the split away from previous isolationism. He argued in a journal article published in 1890 in the Atlantic Monthly that the United States had to "take her rightful place in the world as a major commercial, industrial, military and diplomatic power."⁴³ This policy would be a break from the "inward-looking capitalism, isolationism" that the United States practiced.⁴⁴ The Naval Act of 1889 demonstrated this departure from the old way of thinking, into the new 'American'

Three institutions propelled and revolutionized Naval thought: US Naval Institute, The Office of Naval Intelligence, and the Naval War College.

imperialistic policy.⁴⁵ One of the focal points of Mahan's policy he wanted to implement was the control of the Isthmus Canal. He argued that if the United States did not take full advantage of the opportunity the canal presented, and did not defend the Monroe Doctrine; the canal could become dangerous to the United States. Controlling the canal would add to the strength of the United States as not only a sea power, but an imperial one by being able to control trade routes better from ocean to ocean. Not everyone, however, supported Mahan and his ideas about the Navy's expansion. There were some that held to the isolationist perspective and did not see the need for these new strategies and policies that were brought on by the new steel navy.⁴⁶ These isolationists feared being drawn into foreign conflicts and thought involvement would undermine American values.⁴⁷

What drove the naval arms race between France and Great Britain was spearheaded by the rise of technology and steel. That competition did not exist within the United States, and the argument was made that with no European threat in the west there was no strategic importance for the US to have steel ships.⁴⁸ They argued that the coastal defense and commerce protection could be done with the ironclads and other traditional cruisers that they already had.⁴⁹ It was also argued that the US steel manufacturers were not well-equipped enough to handle the demands that building a steel navy entailed. Opponents did not want to have to rely on foreign steel for American ship building. The two main proponents in the House, Charles Boutelle and Henry Cabot Lodge, argued that a steel navy would stimulate the US economy and steel industry with a greater demand for steel and other ship materials.⁵⁰ The use of American made steel became solidified in 1886 with the Democrats passing an act that required

shipbuilders only to use domestic steel. Even though it took steel producers, such as Andrew Carnegie and other manufacturers, years to be able to have steel producing capabilities in their plants, it was an important step solidifying the United States Navy as 'American.'⁵¹

The solidification of the new American steel Navy became evident in 1898 by the routing of the US Navy over the Spanish Armada. The results of the Spanish-American War gave vindication to those who had pushed for and helped to develop the new navy.⁵² The war justified the viewpoint held by many that the danger to the United States was at sea and that a strong navy was needed to protect against European foreign powers.⁵³

Post-Reconstruction the United States military downsized like militaries have done historically after wars at home or abroad. The Navy at this point was used domestically and from an isolationist perspective. The innovation that steel brought to the Navy not only affected the ships that were built using it, but also foreign policy and naval thought. The Naval War College revolutionized policy with the intellectual contributions of Admiral's Luce and Mahan. The Navy transformed in the 1880s as a result of steel, but it was those intellectual contributions that transformed the United States' role in the world.

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"Early Morning Inspection"

Women in the Tanakh

By McKenzie Pepper



McKenzie Pepper is a senior cadet from F-Troop majoring in Political Science. Cadet Pepper is scheduled to commission in the United States Army as an infantry officer and plans on pursuing a juris doctorate upon completion

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ABSTRACT

Women have played a pivotal and often underappreciated role in the development of ancient Hebrew culture and indeed throughout history. The object of this study will be to highlight instances in the Hebrew Bible where women attain some sort of significance—whether through moral superiority, military might, or intellectual capacity—and discuss the context surrounding the instances. The documentary hypothesis will be utilized in analyzing the depiction of women throughout the various sources and stories.

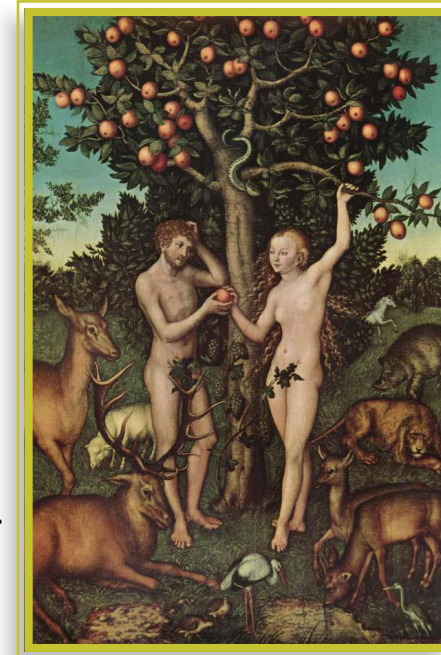
The roles and responsibilities of women in ancient Hebrew culture are explicitly defined and traceable through the Hebrew and Christian scriptures. To be sure, the ancient Hebrew culture was thoroughly patriarchal from its clan society all the way through the kingship of Israel to the Roman conquest. Women were systematically subjugated to male authority and as such, were subject to the whims of their caretakers. However, that is not to say that individual women never rose to prominence or held authority in the patriarchal culture. The Hebrew Bible is peppered with stories of individual women who rebelled against the chauvinistic bondage experienced in the culture. A word of caution must be said about the instances where women gained social significance and consolidated authority. The tendency to perceive a progressive gain in social and political rights is natural and the urge must be resisted for the historiographical work does not lend evidence to the tendency. While it may be desirable to trace a clear path of social gains in females' relationship to society, where precedence is set and social gains build upon previous gains, the literature does not support this notion. The isolated instances where women gain significance is precisely that—isolated. The object of this study will be to highlight instances in the Old Testament where women attain some sort of significance—whether through moral superiority or military might—in the literature and discuss the context surrounding the instances. Perhaps a pattern other than the typical linear progression might reveal itself through an analysis of the literature. This study will roughly follow the chronological order of appearance in the literature. In reference to the transcendent God of the Hebrews the word deity will be used exclusively for clarity issues (as opposed to Ba'al the Hebrew word for Lord also an early distinct deity, Elohim, and

Yahweh). The standard Wellhausian School of differentiation for various sources will be used to denote distinct narratives (J for Yahwistic, D for Deuterocanonical, P for priestly, and E for Elohist).

In following the chronological timeline, the creation story of Genesis 1.27-2.28 sets the context in which humans first came into existence. The deity spoke and created humankind: "Let us make humankind in our image, according to our likeness; and let them have dominion..." (1.26). In the aforementioned verse, the deity refers to multiple humans but does not differentiate according to gender nor enumerate precisely how many humans are created. Later in verse 27 the deity creates humankind in his image and differentiates between the sexes: "God created humankind in his image, in the image of God he created them; male and female he created them". Following the creation the deity blessed humankind and gave them dominion over the whole of earth. The significance here is that he gave dominion to them over his other creations without regard to splitting authority between male and female.

This is important in that it sets the original conditions in which mankind first entered existence. From this original standard, other narratives can be judged in accordance to their level of derailment from the natural, original order. Chronologically, the earlier creation story of Genesis 2.7, a J source, differentiates the role of women in many aspects from the chronologically later parallel in 1.26-28, which is a P source. In Genesis 2.7 a solitary male is physically formed from the dust of the earth

and given authority over the land with the exception of the tree of the knowledge of good and evil. This older Yahwistic source focuses more on the mortality of human beings and their mundane nature, being crafted from the dust of the earth, than having dominion over others. The deity then determines that "it is not good that man should be alone" and subsequently creates a "helper as his partner". A woman is created out of man as a seemingly subordinate helper, and the man uses his superiority of language and names the creation "woman." As the narrative progresses the man and woman fall into enmity in relation to the deity in that they disobey the commands of the deity by eating the fruit of the tree of the knowledge of good and evil. Genesis 3 describes the events surrounding the disobeying of the divine edict and sheds light on one conception of the original relationship between man and woman. Eve and Adam are wandering through the Garden of Eden when they encounter a talking serpent that speaks to them and portrays the deity as selfish and scared of humankind's power. In Genesis 3.4-5 the serpent says



Adam and Eve

to the woman, "you will not die; for God knows that when you eat of it your eyes will be opened, and you will be like God". Eve uses her intellectual capacity to reason to the conclusion that it is desirable to eat from the tree and quite easily convinces her husband to indulge as well. She exercises her will over her apathetic husband who was with her: "So when the woman saw that the tree was good for food... She took of its fruit and ate; and she also gave some to her husband, who was with her, and he ate" (3.6-7). The deity soon realizes what has

happened and punishes the first humans with a curse that has been used as justification for the subjugation of women into modernity. The deity says to the woman, “yet your desire shall be for your husband, and he shall rule over you” (3.16). This role reversal stands in stark contrast to the earlier episode where the man is utterly passive to the women’s intellectual persuasion. Thus we have a creation narrative that places the dominion of man over women as a result of a transgression against the deity. It is interesting to note that the *raison d’être* for the subjugation is the communal sinning of both the man and the woman against the deity’s decree and the subjugation is a curse or a derailment from the natural order of existence. Whereas the older Yahwistic source has man and woman relatively equal the later priestly source has women subordinate to man. The Yahwistic source would be the starting point or natural order and the curse that ensues is different from the natural source. It fundamentally alters the relationship of man and women



Hagar and Ishmael

Further along in the Book of Genesis after the deity’s destruction of the earth by flood, he enters into a covenant with Abraham and his wife Sarah. Sarah is barren and unable to produce an offspring for Abraham though the deity had promised if Abraham upheld the covenant Sarah would produce a son. In Sarah’s possession was an Egyptian slave girl named Hagar—presumably a gift from Pharaoh after their experience in Egypt—

whom Sarah convinced Abraham to lie with to fulfill the deity’s promise. Abraham went into Hagar and conceived a son then; the angel of the lord appeared and commanded Hagar to name him Ishmael. Sarah grew jealous and contempt swelled in her bosom for her utility in the social structure was diminished by Hagar’s ability to produce a son for her husband. Hagar and Abraham incurred the wrath of Sarah to the point that Hagar was cast out from the house of Abraham. Here a husband submits to his wife’s jealous outburst. Abraham is cast in the pathetic role of a husband who discards his concubine and discharges his patriarchal duties to a member of his house in order to have his peace at home. There are two accounts of Hagar’s exodus from Abraham’s house, one in Genesis 16 and the other in Genesis 17. In Genesis 16 Hagar is an independent nomad woman who has a deep disapprobation to her mistress’s chicaneries. She voluntarily wanders off into the desert and manages quite well for herself when the angel of the lord appears and reveals her son’s great destiny. The desert is an inhospitable environment where even the most stalwart of men are at the mercy of the elements yet Hagar is able to thrive. In contrast, Genesis 17 the conditions are less favorable for Hagar and she is vulnerable to the whims of society and the perils of the wilderness. However, the parallel in Genesis 17 should not diminish the importance of her achievement of independence and self-acquired favor in the

deity. In this narrative, both Sarah through Isaac and Hagar through Ishmael become mothers of nations. Here both men and women are equally important in the fulfillment of the deity’s covenant.

As the Hebrew culture developed from a nomadic pre-clan society to a full-fledged confederacy of distinct, and sometimes feuding, clans, a peculiar system of governance developed to manage the fledgling culture. Judges ruled the confederacy as semi-autonomous sovereigns. The judge also served as a prophet or prophetess that speaks for the lord and has spiritual authority over the society. The fourth judge to govern the confederacy was a prophetess named Deborah and her appearance in Judges 5 presents a fairly clear picture of the Yahwistic order of Israel in that it is lacking significant redactions. Deborah is a warrior prophetess that speaks directly for the deity in spiritual matters and pragmatic governance. At this time the Hebrew tribes’ infiltration into Canaan had caused serious military conflicts with Canaanites, which resulted in sporadic raids and attacks on Hebrew settlements. The Song of Deborah describes the prophetess’s rallying of the tribes’ men against the coalition of Canaanites and their leader Sisera of Harosheth-goiim (Voegelin 247). Deborah’s rallying cry “awake, awake, Deborah.... Awake, awake, utter a song!” aroused a male military leader with the name of Barak who went to defeat the Canaanite Sisera (Judges 5.12). The Deborah Song is important

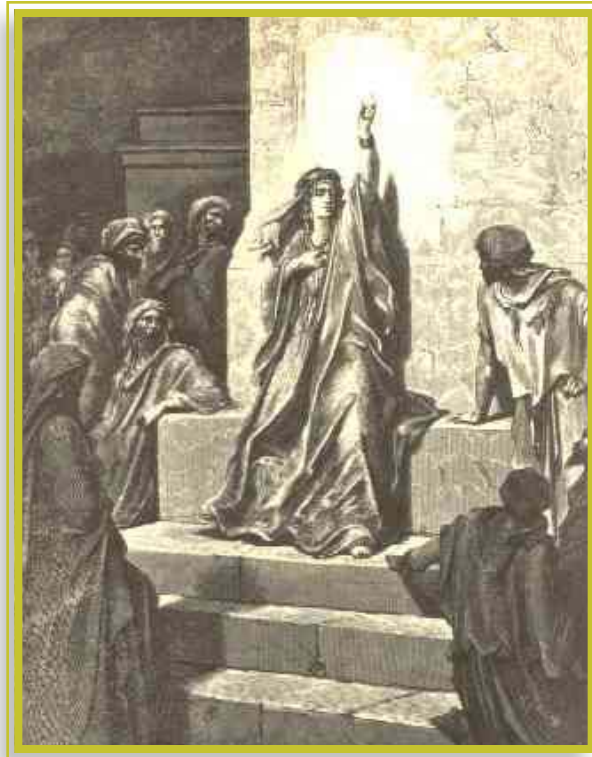
in many respects but staying within the scope of this study the tribute is rich in potentiality for concrete societal gains by women in ancient Hebrew culture. The fact that the deity uses a woman to transmit his desires to the clans is extremely significant in that it places a solitary female as the supreme spiritual, and therefore matriarchal authority of the land. She chastises the various men of the tribes for failing to fully participate in Yahwism and successfully repels the Canaanite resistance to the Israeli infiltration. The context in which she becomes the Judge of Israel again lends to the significance of her rise to power. To be sure, the clans of Israel where a confederacy but lacking a permanent political structure or organization they were almost exclusively organized by men. The song reveals the haphazardness in which Deborah is thrust into the role of a Judge to save the clans from a possible extinction by the Canaanites. She becomes a savior for the fledgling confederacy and shows the Israelites their wrongness in doubting the deity. A state of emergency had to be declared and a prophetic authority had to issue a war call to assemble the armies of the tribes. The charismatic Judge must have sufficient authority to summon the men to action. This in and of itself stands in stark contrast to the generally held view of a subjugated woman at the mercy of her caretaker. Other biblical scholars contend that the Deborah song is one of the most “unencumbered by interpretations and redactions of the later historical schools...

“The evidence that supports the subjugation of women as a derailment from the natural order manages to survive countless editors, redactions, and oral traditions to make it into the Hebrew and Christian Bible as we know it today.”

and is so early that it has not yet suffered from Israelite-Canaanite syncretism” (Voegelin 250). This may be evidence that the patriarchal society was not the natural order of existence but a purely pragmatic institution created by one sex to exert influence over another.

The song celebrates a victory at war that is won by the deity but facilitated by a prophetess who commands the tribes and establishes a general, Barak, who is obedient to the deity. Midway through the song another woman is celebrated; Jael, a Kenite woman, extends hospitality to the fleeing Canaanite prince Sisera. She offered him hospitality, and when he felt safe, she drove a tent peg through his skull.

Most blessed of women be
 Jael,
 The wife of Heber the
 Kenite...
 She put her hand to the
 tent peg
 And her right hand to the
 workman’s mallet;
 She struck Siser a blow,
 She crushed his head,
 She shattered and pierced
 his temple...
 (Judges 5.24-26)



Deborah as a Judge of Israel^{vi}

The demise of Sisera clearly brings praise upon Jael for her horrendous murder of Sisera. The act of Jael, by earlier nomadic standards, was a barbaric violation of the laws of hospitality. However, the creator of the hymn praised the brutal murder committed by the Kenite. The discrepancies in mores espoused in the Hebrew Bible is indicative of a peculiar social progress. If we take for granted

the claim that The Song of Deborah is indeed a pristine picture of Yahwist Israel, and that the social environment of the clan society was a progression, the notion that women were indeed making social progress significance can be held.

These three instances covered from the book of Genesis and Judges of the Hebrew Bible stand as testaments to the authority and significance of women. However, these are not the only instances where women exercise authority or superiority over their male counterparts. It is beyond the scope of this study to create a comprehensive analysis of all the stories in the literature. They do deserve mentioning as they contribute to the understanding of the relationship of women to men in ancient Hebrew culture. The goddess Asherah from earlier Asiatic theogony is described as the consort of El and personified in Proverbs: “Does not wisdom call out? Does not understanding raise her voice? On the

heights along the way, where the paths meet, she takes her stand; beside the gates leading into the city at the entrances, she cries aloud...” (8.1-3). The deity’s infinite wisdom manifest itself in mundane reality as a woman. Ruth, Esther, the daughter of Jephtah, and Rizpah all stand as moral exemplars in relation to the male protagonist in their respective narratives. While it is most certainly true that the literature as a whole presents a Hebrew culture that is deeply, and

sometimes physically and sexually, violently, chauvinistic, that is not to say women or rather specific women never gained societal and spiritual significance. While it is hard to trace a tangible progressive social experience for women in ancient Hebrew culture, it is not beyond reason to suggest that the women of the tribes’ experiences resembled that of a cyclical trough and crest model. In the beginning, in accordance to the deity’s will, man and women were of the same significance in the mundane reality. The tables turned as man is commanded to exert authority over

women as a punishment for the first transgression against the deity. Later the deity raises Sarah, Hagar, and Deborah to spiritual prominence, and this could conceivably translate into societal significance for women. Finally, as explicitly found in other narratives, women are confined to the home and in all respects subjugated to their male counterparts. The various books of the Hebrew Bible experienced significant editing and redaction, which helps explain the inconsistencies of the mores in the literature. The specter haunting the younger,

chauvinistic stories of the Hebrew Bible is the emergence of heroic women, and their potentiality for development into significant actors in the older stories. The evidence that supports the subjugation of women as a derailment from the natural order manages to survive countless editors, redactions, and oral traditions to make it into the Hebrew and Christian Bible as we know it today.

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“Palmetto Morning”



"Lost Cover"

Sardar's Islamic Science: Is Science Universal?

By: Jane Ma



Jane Ma is a senior Biology and English double major in Golf Company, pursuing an honors gold seal track for both degrees. She holds the cadet rank of Human Affairs Officer. She hopes to attend medical school and eventually work in public health or internal medicine. She is the current editor-in-chief of The Gold Star Journal and has also served as the editor-in-chief of The Shako. She has been published multiple times, most notably in the online cardiology journal, "Congenital Cardiology Today".

ABSTRACT

Ziauddin Sardar, a prominent Islamic scholar, presents a lengthy manuscript arguing for the concept of a purely Islamic Science. This paper outlines and analyzes his arguments, both its strengths and weaknesses. Ultimately it will conclude that while some aspects of the type of science he advocates for are worth considering and incorporating, science is ultimately a universal construct that should not be culturally categorized--a process that in fact impedes the progress of true science.

In his manuscript "Arguments for Islamic Science", Ziauddin Sardar lays out his schematic for what he calls Islamic science, both what it is and why it is absolutely necessary. In it, he argues for a distinctly Islamic brand of science, one that he claims is not divorced from a religious and holistic context but is driven by Islamic values to serve Islamic needs. Further, Sardar asserts that modern science or western science is "inherently destructive and it cannot fulfill the needs of Muslims societies" (Sardar 1985). While there's certainly a measure of truth within certain elements of his argument and a good deal to consider throughout the entire work, ultimately it fails to demonstrate the need for an Islamic science. It fails in two ways, first through some logical contradictions within his argument and second through oversights within a broader and more generalized philosophical framework that delves into the relationship between science and culture or science and religion as well as the nature of science itself. This essay will endeavor to explain the four arguments of Sardar's paper as well as his definition of an ethics-driven Islamic science that is both differentiated from other sciences and necessary in the face of such sciences; and then to analyze where he falls short of his goals while acknowledging some of his better points; and finally to step back and discuss the idea of a universal science in a globalized context.

Sardar's theory of a separate Islamic science is based on four arguments: first, that each civilization necessarily and naturally develops its own brand of science—therefore, science is decidedly not universal; second, that Islamic science has historically already possessed a style and identity all its own; third, that so-called Western science is inherently destructive and is a threat not only to Islamic science as an entity but also to the world/mankind in general; and fourth, that "Western sci-

ence cannot meet the physical, spiritual, and cultural needs of Muslim societies” (Sardar 1985). After presenting these four arguments, he then advocates a progressive path forward for Islamic science: reject Western science and forge a new scientific identity by participating in a science informed by Islamic ethical principles, most importantly that of Tawhid, meaning unity or oneness. This binding principle of Islam translates to the following traits of Islamic science: first, that there is “no distinction between subject and object in Islamic science” (Sardar 1985); second, that there should be no division of science into arbitrary subjects—such divisions are false; and third, that Islamic science does not differentiate between facts and values—that knowledge, or *ilm* (in Arabic), is inseparably married to ethical values.

I will initially examine some problems that arise in his first four arguments, as these conclusions are the foundation of his call for a defined Islamic science. He spends the bulk of his first argument discussing the differences between Chinese science and Greek science, which he draws from outdated sources, according to his notes. Roderick Grierson (of the Near East University in Cyprus) also points this out in his short article critiquing Sardar’s piece. Grierson writes: “the source listed for his [Sardar’s] account of Greek science is a Penguin paperback that...has been dropped from its list as antiquated.” He further adds that Sardar’s basis for his assertions about Chinese science seem to be based on a volume of Joseph Needham’s *Science and Civilization in China*, a text which is now over 60 years old. Additionally,

Therefore, Islamic Science--and, it is my contention, all science--is a global, fluid, cross-cultural, and shared experience, a collective endeavor.

he makes some factual errors; for example, he cites a Christian (not Islamic) physician who refuses to make poisons because it would be in violation of both his profession and his religion as proof that Islamic scientists are ethically superior (Grierson 1990).

What is perhaps more worrisome about this part of his argument are the generalizations that he makes about two extensive and complex civilizations in order to achieve his point. He characterizes the allegedly separate sciences of these two civilizations and consequently makes a statement about each civilization. It is his contention that Greek science is reductionist and separatist, breaking things down into smaller and smaller pieces to study them individually; whereas Chinese science focuses on harmony and synthesis: “by concentrating on relation rather than substance, Chinese thought emphasized

the interconnectedness of man and nature as well as individual and society” (Sardar 1985). He sets both of these sciences as diametrically opposed, two poles at different ends of a spectrum. He clearly wishes to align Islamic science with Chinese science and reject Greek science, which is acting as a representative for all of Western science.

Basing his arguments on such “naive generalizations” (Grierson 1990) is a mistake. What is disconcerting is the unsophisticated yet wholly confident aggregation on Sardar’s part of multifaceted and complex ideas such as science and religions, or massive and diverse populations/civilizations, as well as vast tracts of both history and geography. All of these are pressed close together to form the

blocks on which the rest of his arguments rest; and upon closer inspection, they are shown to be bursting, swollen, overstuffed—and not as sturdy or homogenous as they might originally seem. Even within a single civilization, there is always an extreme diversity in attitudes, approaches, and motives...towards science or otherwise. To try and base an argument on the idea that all Chinese people (1.35 billion and counting) or Muslims possess a particular reverence for life and a synergistic and harmonious world view that Western civilizations do not is quite a bold claim. This statement is not intended to demonize, but merely to point out the error in revering/advocating on the basis of such broad and careless generalizations.

S. Irfan Habib, an Indian historian, also comments on Sardar’s assertion that Chinese, Western and Islamic sciences are concrete and separate entities. Habib states that the historic Islamic science that Sardar glorifies (particularly in Sardar’s third major argument) in the golden age was actually due to the high rate of state sponsored interchange of culture and knowledge encouraged at the time. Habib further comments that “it is unfortunate that... Islamic civilization, including its science, is being proudly projected as a monolith, solely dependent on Quranic revelation” (Habib 2014).

However, it would seem fair to state that Sardar is right in saying that Islamic science at its zenith had a distinctive identity—one of multiplicity and plurality based on sources from several different cultures, sources which were internalized and built upon.

Therefore, Islamic science—and, it is my contention, all science—is a global, fluid, cross-cultural, and shared experience, a collective endeavor. Abdus Salam, 1979 Nobel Laureate and also notably the only Pakistani to receive a Nobel Prize in addition to the only Muslim to have been awarded the prize in science, writes this: “My own view has always been that science is the shared creation and joint heritage of all mankind and that as long as

a society encourages it, science will continue to flourish in that society.” (Salam 1988) Salam also saw no problem reconciling his identity as a relatively modern theoretical physicist and his identity as a devout Muslim. He seems to agree with Sardar in the sense that Islam as a religion and Islam as a science are one and the same, from the same sources and informed by the same ethics. But the difference is that Sardar closes the gates of cross-fertilization, isolating his rigid conception of Islamic science as a self-created construct and mandating that the influences of other sciences, particularly those of the destructive



Islamic Science

West, be rejected. This is an impossible idea, and some might say reminiscent of Al Ghazadi, who declared the gates of itjihad closed towards the end of the golden age of Islamic Science—a defensive response to the Crusades and their Western threat.

That is not to say that there aren't certain useful or meaningful elements in Sardar's work. Sardar presents so much so hastily, leading to some destabilizing missteps, but there are some ideas worth considering. If we strip away the generalized labels and the diametric juxtaposition of Western science vs. others and examine the characteristics of Islamic science, we'd find that a lot of these traits hold merit. He describes Islamic science as ethically informed and places a particular emphasis on practicing an conscientious type of science built upon the principles of istislah (public interest), khilafa (trusteeship as God's stewards on Earth), and adl (social justice). Taken out of a strictly Islamic context, this is a model that non-Islamic scientists could also emulate to a degree—certainly the desire to help people (particularly the less fortunate) and the call for an environmentally conscious approach, in an era when the measure of dissolved atmospheric oxygen is at an all-time high (Keeling Curve, 2014). These virtues, while they may be central to Islam, are by no means exclusive to Islam.

Furthermore, neither is the debate on how and for what motives science should be pursued limited to the realm of Islamic science, or to any one group. It is a hugely contested topic today among scientists of all races, nationalities, and religions: should science be practiced for science's sake, for knowledge alone, or should it be practiced to fulfil certain goals and aims? There has been a good deal of recent criticism from advocates of "fundamental research" who believe that re-

search should be conducted freely, in pursuit of new discoveries and for no other reason. They complain that scientists are forced to justify their research in non-scientific terms, for funding and in deference to public pressure to find cures for certain popular diseases yet not others—in short, scientists have to bend their research to public interest.

Addressing issues like these are not confined to any one civilization or culture. It is the responsibility of all scientists everywhere, just as Islam does not have an exclusive claim to value-driven science and others do not have an exclusive claim to fully empirical science. Science is universal; therefore it is necessary to develop a cross-civilizational and inclusive perspective. Such a perspective banishes unbalanced and Eurocentric (for such an inclination does exist) renderings of backwards-looking historiography but also levels the playing field for forward-looking progress.

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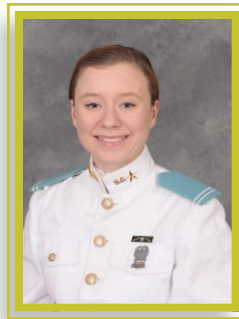
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"Happy Halloween"

Science and the Soul in Never Let Me Go

By: Jennifer Burch



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member of The Citadel Women's Rifle Team, as well as head delegate for The Citadel's Model Arab League team. She is currently an Army contract and hopes to pursue a career as a Military Intelligence Officer.

ABSTRACT

This paper examines the conflict between the pursuit of science and the basic traits that all humans are said to possess, including having a soul. In this case, the humans are actually clones, created in order to provide organ transplants to wealthy non-clones. In the novel Never Let Me Go, author Kazuo Ishiguro tackles this issue with grace. With this paper I intend to further examine the question of what should be more important- the desires of the few or the good of the collective? The clones are unusually preoccupied with religion, while the non-clones believe them to be soulless and expendable.

In Kazuo Ishiguro's novel *Never Let Me Go*, contemporary British society has decided to clone human beings in order to provide organ transplants, presumably, to allow the continuation of life even when medically unnecessary. However, ethical qualms still remain among the population, namely, do these clones have souls and, if so, what does society owe them as possessors of souls? One would think that the possession of a soul would hypothetically place these clones on the same ethical footing as the average human. However, actual humans such as Miss Emily and Marie-Claude believe that the clones have souls and yet still in the end support the donation program. In the end, perhaps the bigger question is why does British society care? In a seemingly secular period of British history, why, in the end, does it matter if they have souls? Why has society assumed that non-clones have souls? The question of soul-hood is a strangely antiquated one in a society so consumed with prolonging life that they would create an entire program to clone organs. Much of the appeal of the afterlife to humans is that death will resemble life, so that in a way you will never die. If death for clones is like life, it is cruel to present them with the concept of the soul and the afterlife, because then their suffering will never end. It would seem more beneficial to the clones to believe that after death there is nothing, so that they can finally be at peace. The proving of the soul also has large implications for the non-clones and their system of beliefs. If in fact the clones do have souls, then man has successfully taken the role of God himself. In this way, humans have themselves become deities.

In the novel, religion seems to have largely fallen by the wayside in British society. This makes the obsession concerning the existence of a soul confusing, because the idea of a soul is so intertwined with religious ideals that one would not be able to exist without

the other. However, modern day society has seen the divorce between popular holidays such as Christmas and its deeper religious meaning. Some aspects of religion still bleed through, such as Kathy asking Tommy if he "had found God or something" (Ishiguro 23). Kathy says this after witnessing a change in Tommy's behavior. He goes from angry and immature to a calm, balanced individual. Kathy somehow got an idea that Tommy had changed his behavior because he had experienced religion. It is strange that she would bring this up considering that religion is not a big part of anyone's life at that point. Additionally, as Hailsham students they are extremely isolated in



Organ Donation ^{viii}

regards to modern society. It is possible that, like many of the other students, Kathy had simply picked this phrase or idea out of a magazine or a book and used it without thinking about the deeper meaning. There is no further explanation given for Kathy's reasoning behind the statement, and throughout the novel there is no mention of the religious beliefs of Kathy, Tommy or Ruth.

Other religious aspects also bleed through. Rodney, who the trio meets after

they go to the Cottages, was described by Kathy as "talking a lot about things like reincarnation" (Ishiguro 142). It is never explained where the characters get these religious ideas, or what they actually believe concerning the subject. The characters have been informed regarding religion in the same manner that they were informed of donations- "told, but not told." (Ishiguro 64) On a surface level the old religious ideas are recognized by the clones as existing but there is no deeper understanding that would lead to belief regarding God, the soul, or something like reincarnation. Keffer, the old caretaker at the Cottages, was "rumored to be religious" (Ishiguro 133). This implies

that belief in religion is seen as old fashioned as well as a something primarily middle class and rough around the edges. In families and communities that do not possess many material goods, there is often a body of folklore that fills the vacuum that tangible possessions would normally fill. Religious beliefs are often a part of this, as well as superstitious ideas. In a way, this parallels the experiences of the clones, particularly at Hailsham. They do not have many things that truly "belong" to them, but they do have

a system of traditions, stories and rumors that are passed down, such as the stories about the escaped Hailsham students that met grisly ends.

There is also evidence throughout the novel that organized religion has fallen by the wayside, such as the conversation between Ruth, Tommy and Kathy at the abandoned church. It is strange that a church has been left to become a ruin, because normally churches, even when disused, are treated with some manner of respect and not simply completely abandoned. It would take an

Perhaps it was only natural that with a preoccupation regarding the preservation of life would emerge even more of a preoccupation of death.

extremely secular society to leave a church without any sort of repurpose. Strangely enough, Kathy, Tommy and Ruth do not seem surprised or curious regarding the church being there, only pleased to have found somewhere to talk uninterrupted. Tiffany Tsao states that “even though the clones and guardians express belief in human beings’ possession of souls, their understanding of the concept lacks any reference to any supernatural creator of these souls” (Tsao 219). This is because for the clones, their creator is man himself as opposed to God. The desire for the citizens of British society to live longer lives (at the expense of others) through transplanted organs also speaks to the declining influence of religion within their culture. The Bible states that “For we are God’s workmanship, created in Christ Jesus to do good works, which God prepared in advance for us to do” (New International Version, Eph. 2:10). This means that you should be happy with how you were created, because you were created by God. If God

wanted you to look a certain way or for your lifespan to continue or end a certain way, he would have made it so. This is also evidence that in the novel the humans have in a way become deities because they are deciding who lives, who dies and ultimately how long everyone’s lives are.

Ultimately, the question of the soul was one that only emerged after the scientific advances that allowed cloning had already been in use for some time. In Tommy and Kathy’s conversation with Madame, she states this succinctly. When “the great breakthroughs in science followed one after another so rapidly, there was no time to take stock, to ask the sensible questions” (Ishiguro 262). The world jumped into the cloning process without taking the time to think about the consequences. “By the time people became concerned about students...it was too late”

(Ishiguro 263). Why did society suddenly look back in terms of what they valued? Perhaps it was only natural that with a preoccupation regarding the preservation of life would emerge even more of a preoccupation with death. It is impossible to stop thinking about death if so much is being done to prevent it, and naturally thoughts of death lead to thoughts about the afterlife and the existence of a soul. It is interesting in the novel that in the case of the clones, society would rather not think about the implication of having a soul than actually have to answer the question. In Miss Emily’s conversation with Kathy and Tommy, she states that “people did their best not to think about you” (Ishiguro 263). However, the issue quickly came to light due to the Morningdale Scandal, when it was discovered that not only

clones were being made but being made to be genetically superior to the regular humans. The British society described in the novel has no problem with clones being used for transplanted organs as long as the clones have no way to take a larger role in regular society. Miss Emily states that “a generation of created children who would take their place in society? That frightened people” (Ishiguro 264). The clones are always expected to subvert themselves to the whims of society as lower class citizens who by some are not considered human at all. Titus Levy states that “Kathy [and the others] must sacrifice the personal freedoms she has enjoyed to the demands of society” (Levy 3).



Hailsham House, from the film adaptation of the novel. ¹⁵

The struggle of clones mirrors that of the struggle of African slaves in the 19th century. It was easier for slave owners and traders to not consider the slaves humans at all, rather than accept the fact that they were treating human beings with such brutality. The idea of having a soul and being human transfers upon the person some measure of dignity. Dignity must be removed if one is to be truly enslaved, either in 19th century America or 21st century Britain. Dignity means that the mind has not been enslaved even if the physical body

has. However, when slave owners, the church and other individuals heavily invested in the slave trade finally accepted the fact that slaves were human and had souls, they still did not refrain from enslaving them. This mirrors the actions of Marie-Claude and Miss Emily, who believe that the clones have souls but in the end still support the donation program. Having a soul does not save you from

being enslaved or from making your donations, which makes it seem as if the real argument is not between those who believe the clones have souls and those who don’t, but between those who believe the clones should have a happy life before donations and those who don’t think it matters.

The end result is always the same, because every clone must donate. This makes the fact that the clones are

invested so heavily in the idea of a soul all the more cruel, because if in fact the soul does continue on after death, the clones have nothing to look forward to. Many clones fear that the afterlife will simply be a continuous routine of donations. This is illustrated during Tommy and Kathy’s conversation regarding what happens after the fourth donation. Tommy states that the clones are scared of the last donation “because they’re not sure they’ll really complete. If you knew for certain you’d

complete, it would be easier. But they never tell us for sure” (Ishiguro 279). For the clones, they would rather be sure that after death there is nothing at all, rather than more donations. Kathy describes in more detail the fears of the clones, stating that “maybe, after the fourth donation, even if you’ve technically completed, you’re still conscious in some sort of way; how then you find there are more donations, plenty of them, on the other side of that line; how there are no more recovery centers, no carers, no friends, how there’s nothing to do except watch your remaining donations until they switch you off” (Ishiguro 279). Marie-Claude and Miss Emily seemed to have only meant well with their intentions of proving that clones have souls, but they inadvertently imparted ideas upon the clones that only provide a measure of hope for normal people.

In the end, the attempts of British society to escape death through the use of transplanted organs has only served to make society, and the characters of Kathy, Ruth and Tommy, more aware of the fact that for some to live others must die. Predators must hunt prey, sacrifices must be made and eventually everyone must die. That much is sure, but the question of what happens after still remains. The novel speaks to the desire of man to have control over his life, even at the expense of another man. It also serves as a warning, particularly in this day and again

Some things are too good to be true, or might lead you down a road you never intended to go.

when scientific advances are so numerous and so rapid, leaving many individuals bewildered and feeling left behind in a world they no longer understand. Much of the good (or harm) from these advances happens before society can really stop and think about potential issues. Some things are too good to be true, or might lead you down a road you never intended to go. It might be sooner than we think that the issues presented in the novel will have to be considered.

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“The Inspector”

