



The Drew Review

The College of Liberal Arts
Drew University
April 2013
Volume 6

The Drew Review is the annual research journal for the undergraduates of the Drew University College of Liberal Arts, publishing undergraduate research from the previous calendar year. Our mission is to showcase the intellectual vibrancy of the students of the CLA.

Currently there are six editors; editors were selected by faculty nomination, application, and invitation. Different categories of membership exist, but all members are coeditors and share equal responsibility within the journal. All eligible published students will be offered a position on the board, with the remaining positions filled by faculty nomination and student application with writing sample.

Submissions to the *Review* require a faculty nomination. Students who believe their work is exceptional should approach their professor for a nomination. *The Drew Review* accepts papers of no more than twenty-five pages in October and February from the previous semester. These papers must be submitted along with a cover letter and faculty nomination. There is a limit of five nominations per professor per semester in order to guarantee a range of submissions.

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TABLE OF CONTENTS

A STUDY OF RELIGION AND MEDICINE: PERSPECTIVES FROM
PHYSICIANS

KATELYN CUSMANO (CLA 2014) 3

WHAT LED TO THE BOOM IN PRIVATE PRISONS?

NICOLE KURUSZKO (CLA 2013) 25

NATION AND DEVOTION: ENGLISH AS SOCIAL CONTROL

ELIZA MAUHS-PUGH (CLA 2014) 39

MTLS IN *VIBRIO CHOLERAE* REGULATES MANNITOL TRANSPORTER
PROTEIN PRODUCTION THROUGH THE *MTLA* 5' UTR

RONAK MISTRY (CLA 2013) 56

BAUDRILLARD'S HYPERREALITY: AMERICA'S SENSATIONALIZED
SPORTS THROUGH A POSTMODERN LENS

JAMES SIRIGOTIS (CLA 2013) 70

A STUDY OF RELIGION AND MEDICINE: PERSPECTIVES FROM PHYSICIANS

KATELYN CUSMANO (CLA 2014)

No one is immune to every disease, and sickness is inevitable at some point in everyone's life. Hence, it is virtually impossible to go through life without needing help from a doctor. Most physicians look at physiological factors such as blood pressure and cell count as determinants of patients' outcome. However, an increasing number of patients are demanding attention to other factors that can help them manage their well-being. Religion is one of these important factors that play a central role in many patients' outlook on health and sickness. In particular, those who are extremely ill have called for consideration of their spiritual health in conjunction with their physical health. These demands are leading to an increase in the study of the relationship between religion and medicine.

I undertook an Independent Study that involved human research on this issue in Spring 2012. The goal of this project was to examine the relationships between physicians, patients, and religion. The research took two forms: literature research and interviews. I interviewed five physicians from different areas of medicine via phone or email survey regarding their experiences with religion and patient care. I asked interview questions related to both the relationships between the physician's religion and their care and the patient's religion and patient care (see Appendix 1). The literature research I conducted included books written by highly established physicians in the field of spirituality and medicine such as Dr. Harold Koenig, as well as primary research articles and newspaper articles from sources such as *The New York Times* and *Journal of Religion and Health*. Newspaper articles were used as a method to demonstrate the relevance of the discussion of religion and medicine in today's society.

In the past, medical practice and religion have often clashed. While many patients find religion to be an important part of their lives, physicians have traditionally kept these considerations out of their medical treatment. In *The Reporter Herald* Dr. Daniel Sulmasy, an internist on the Presidential

Commission for the Study of Bioethical Issues, explains that, “[w]e can talk to people about their sexual practices, but not about their own spirituality, and certainly not talk to another clinician about his or her own spirituality. In early civilizations, the role of the healer and priest were one and the same. We don’t want to go back to that. But we’ve encountered a situation in that they are so radically separated that physicians think religion has no role” (Brachear, 1). However, physicians are beginning to come forward with approaches connecting religion to patient care, with studies on the relationship reaching 1,200 in the year 2000 as noted by Dr. Harold Koenig, psychiatrist and founder/director of Duke University’s Center for the Study of Religion, Spirituality, and Health, in his book *Medicine, Religion, and Health: Where Science and Spirituality Meet* (Koenig 2008, 22). The increasing number of studies on the topic suggests that a significant change could be coming for the place religion has in medicine.

There are many opportunities to improve the integration of religion and medical care. My project took a unique approach in that it considered the role of religion in medicine from two perspectives: an academic consideration of both religion and medicine. In most current research done on the topic, those conducting the studies were either physicians or religious practitioners. Because of their perspectives, they are typically more familiar with one side of the debate than the other. However, because this study considers the issue from both an academic perspective on religion and an academic perspective on medicine, it takes a neutral standpoint in examining physicians’ and patients’ attitudes towards religion in order to aid in the understanding of what role religion does or could have in medical treatment. Currently, physicians’ viewpoints differ on the role their own religion plays in patient care. Most agree that a patient’s religion impacts treatment. The interviews in this paper will aid in an understanding of current physicians’ perspectives on the influence of religion in developing an initial treatment plan and the patient’s ability to engage with the treatment plan suggested by the physician. As this paper will show in more detail, religion has a positive role in treatment when it is possible to offer treatment congruent with religious views and when providing hope to those who are ill. Religion can offer resources that support the medical treatment while still allowing the patients to feel involved in their own healing. However, there can be a possibility of negative influence when a patient holds negative religious beliefs. It is

important to facilitate an open relationship between the physician and patient and avoid creating a barrier between the patient and treatment by ignoring the whole person.

The Influence of Religion in the Pursuit of a Medical Career

Occasionally medicine is viewed not solely as a science but also as a vocation. In an interview with Dr. Richard Hamilton, the Chair of Emergency Medicine at Drexel University, he explained that religion was a highly significant determinant in his decision to enter the medical field (Hamilton Personal Interview). He says, "I see being a physician as a vocation similar to a religious life. You take vows (Hippocratic Oath), adhere to ethical principles, are entrusted with the care of the human body and spirit, and can be a force for good" (Hamilton Personal Interview). As Dr. Hamilton suggested, there are aspects in the Hippocratic Oath that resemble religious teachings. For example, the Hippocratic Oath states "That into whatever house I shall enter, it shall be for the good of the sick" (Hippocratic Oath, Cornell Medical School). While the present study mainly considered Christian traditions, dedication to healing is found across many well-established religions, making it valuable to consider the similarities and differences of the Hippocratic Oath with the tradition of healing. Even if medicine is not explicitly "religious," it is built on a strongly-defined ethic of service to others as is seen in the Hippocratic Oath. The role of the physician is to assist others. Beyond this basic expectation, it seems that physicians have a number of different reasons for entering the medical field. Some of the non-religious reasons expressed relate to values held across religions, such as helping and healing others. As the five interviews have demonstrated, religion and medicine intersect in their respective commitments to help and heal people.

Physicians' Religion in Patient Care

Although religion does not always influence the decision to pursue medicine, it often influences how physicians care for patients. One such example is in their personalities and attitudes towards patients. In my interview with Dr. Harold G. Koenig he explained that religion affects how he treats patients on a daily basis (Koenig Personal Interview). He says that his religion makes him a more patient and caring person when he is treating patients. He also explains that his understanding of religion allows him to

better empathize with his patients (Koenig Personal Interview). While his religious beliefs do not affect his treatment practices, they allow him to build trusting relationships with his patients. This is not to say that physicians require religion in order to be caring and compassionate towards their patients, but that, for some physicians, religion has shaped them to be kind and warmhearted. In comparison, Dr. Hamilton says that his religious beliefs influence his view of medical decisions (Hamilton Personal Interview). He remarks, “I believe in preserving life, not prolonging death. So end-of-life decisions are most influenced by my religion – such as resuscitating a person when it would be fruitless and only prolong suffering and eventually end in death” (Hamilton Personal Interview). Like Dr. Koenig, Dr. Hamilton is trying to alleviate suffering by treating his patients compassionately.

As a Roman Catholic, Dr. Hamilton also avoids recommending abortions or participating in them (Hamilton Personal Interview). However, he notes that he “prescribe[s] birth control routinely” (Hamilton Personal Interview). Therefore, Dr. Hamilton makes decisions based on his religion, but makes an intentional decision to draw personal lines as to the extent religion will affect his decision. Dr. Hamilton observes that the effect of religion on a physician’s approach to medicine is not isolated to Roman Catholics. He explains that he has known other physicians from religions such as Hinduism, who have similar approaches as he does due to their religious beliefs (Hamilton Personal Interview). It is important to understand the issue from the general perspective of spirituality. If physicians have a basic literacy in comparative religions, such as what can be taught in an introductory religion class, it will allow them to interact with patients of all backgrounds and religions. In other words, when interacting with a physician versed in comparative religion a patient only need identify his or her religious tradition without necessitating a lengthy discussion into an “introduction to my religion.” A physician with a general understanding of the beliefs and traditions of common world religions will have immediate knowledge of a patient’s background. Even if a physician and patient have differing religious views, having a general understanding of different faiths will allow a physician to assess to what extent the differing views will impact treatment. In fact, Dr. Koenig estimates that about seventy percent of the religion majors at Duke University are going on to medical school (Koenig 2008, 34), which suggests that students today feel it is important to bring

an academically-informed perspective on religion to their study and practice of medicine. Therefore, Dr. Hamilton and Dr. Koenig serve as examples of significant variability in how religion influences medical practice. Dr. Hamilton demonstrates that there is active tension between his religious beliefs and his treatment of patients. Due to this variability, the limitations of a doctor in providing treatment based on his or her religious beliefs must be made known to the patient. In much the same way, limitations for treatment based on the religious beliefs of the patient must be provided to the physician.

Dr. Aryeh Shander, Chief of Anesthesiology, Critical Care Medicine, and Hyperbaric Medicine at Englewood Hospital as well as Executive Medical Director of the Institute for Patient Blood Management and Bloodless Medicine and Surgery at Englewood Hospital, explains that it is necessary to note the difference between moral and religious beliefs (Shander Personal Interview). Dr. Shander's distinction between moral reasoning and religious reasoning is significant. Dr. Shander views the Hippocratic Oath as the moral baseline for physicians. His views suggest that as the academic study of religion and modern medicine progresses, it will be important to use academic comparative categories to consider the similarities and differences between the Hippocratic Oath and religion-based codes of ethics. Dr. Shander cites abortions as an example (Shander Personal Interview). While there are physicians who decide not to perform abortions due to their religious beliefs, such as Roman Catholics, there are also those who avoid abortions for moral reasons because they view abortion as ending human life. Moral factors should not be confused with religious reasons, especially when attempting to determine the role religion has in medical practice.

Another important note about the relationship between a physician's religious beliefs and their treatment decisions is that often the urgency of care affects the decision. While a physician can be selective when the issue is not urgent or there are other physicians who could take over care, this is not always possible. Dr. Shander gives the example of care during night call (Shander Personal Interview). He notes that if a physician has a patient who needs immediate care at 2 AM it is not always possible for the physician to hold strictly to his or her religious beliefs if the outcome will affect the health of the patient (Shander Personal Interview). For example, if a physician in opposition of abortion for

religious reasons is the only physician available for an emergency abortion that is necessary to save a mother's life, it may be essential for the physician to perform the abortion. Ultimately, Dr. Shander is suggesting that above all the Hippocratic Oath must be upheld, which at certain times may mean a physician abandoning his or her own religious beliefs for the benefit of the patient. Another example is during an emergency when there is a shortage of doctors available. Without other available physicians, in life-threatening situations it may mean the physician must put aside his or her own beliefs when no other option is available for the patient. According to Dr. Shander's beliefs in this situation it is necessary for a physician to uphold his duty under the Hippocratic Oath to help others.

Two physicians from the study did not see an influence between religion and their medical decisions. Dr Sanchez explains, "I treat patients as patients, and I am very objective otherwise. Only at their death bed do I think about religion" (Sanchez Personal Interview). Dr. Sanchez's observation that religion is most important when patients are dying is one shared among many physicians. In a study by sociologist Wendy Cadge of Brandeis University, 30 pediatricians and pediatric oncologists were interviewed about their views on religion and medicine (Balboni, 555). While the opinions differed between the two groups of specialists, there was agreement on one key point. Cage explains that, "[t]he study shows that physicians do not want religious beliefs to trump medical care or expertise, and they get frustrated when such beliefs interfere with medical decisions, but at the end of the day, when a loved one is dying or all medical options are exhausted, physicians often welcome a family's religious beliefs because they help a family answer the 'why us' questions that medicine cannot" (*Science Daily* 2009). While medicine can explain the physiological basis of illness, it cannot always answer personal questions such as why it was someone's "fate" to get sick; religion can better serve this purpose.

Similar to Dr. Sanchez, Dr. Timothy Sullivan, a pediatrician at Norwich Pediatric Group in Connecticut, says that religion does not influence any of his decisions as a physician (Sullivan Personal Interview). Their responses can be understood with reference to the Brandeis study, which found that pediatricians normally do not deal with these issues because the children they treat are typically healthy (Balboni, 555). However, pediatric

oncologists see a different perspective since they are more accustomed to dealing with extremely ill children (*Science Daily* 2009).

The Role of Patients' Religion in Choice of Medical Care

Treatment of patients is not an isolated event but instead an ongoing relationship between physicians and patients. It is necessary to consider the patient's religious beliefs. There are many religions that hold specific beliefs about hospital treatment. One of the most well-known cases is that of Jehovah's Witnesses. Jehovah's Witnesses cite Acts 15:20 and 21:25 in the Bible to explain that as a Christian they must "abstain from...blood" ("Blood Transfusions," 1). For this reason they accept no blood transfusions and only accept non-blood treatment methods. This has thrust Jehovah's Witnesses into the spotlight with cases against parents for child neglect because they refused treatment for their children. One such story was published in the *National Post* in 2009. A five-year-old boy with cancer and his mother were transported from a hospital in the United States to Canada in order to prevent court and hospital officials from forcing him to have a surgery that would involve blood transfusions (*National Post* 2009). The boy eventually died because he did not receive treatment. The driver of the transport vehicle has since become a social worker and calls the behavior of transporting young patients to avoid blood transfusions "not protection, it's illegal" (*National Post* 2009). In response, the Canadian national director of Jehovah's Witnesses says that "treatment options are a personal decision of parents. Responsible parents make treatment decisions based on where they can get the best medical care in accord with the law and with the co-operation of their treating physicians" (*National Post* 2009). He claims that there are no groups within Jehovah's Witnesses with the responsibility of bringing patients to Canada and that these actions are at the parents' discretion. Cases like this highlight the importance of a discussion between the physician and the patient regarding treatments that follow a patient's beliefs.

The medical community has attempted to solve this problem by offering alternatives to the typical surgeries and transfusions often considered necessary in treatment. Bloodless surgery centers are becoming more widespread. These centers prescribe drugs that facilitate the body's bone marrow to make more red blood cells and medications that help minimize bleeding

(Center for Bloodless Medicine Hartford Hospital). There are also surgical techniques like the use of a harmonic scalpel that “uses sound waves to seal tissue as it cuts, used during surgery on vascular organs, such as the spleen or liver” (Center for Bloodless Medicine Hartford Hospital). The benefits of these centers are that blood transfusions can be avoided, and physicians are often experienced at dealing with Jehovah’s Witnesses. However, bloodless surgery centers cannot remedy every medical situation a Jehovah’s Witness may come across as some illnesses or injuries do necessitate blood products.

All five physicians interviewed have treated a patient who was a member of Jehovah’s Witnesses. This is significant, especially considering the extremely different fields of medicine and geographic location. From large institutions like Duke University, Englewood Hospital and Yale University Hospital to smaller offices like Norwich Pediatric Group, most physicians have had to change a patient treatment plan in relation to the practices of Jehovah’s Witnesses. Dr. Sullivan gives an example of a young girl with leukemia (Sullivan Personal Interview). He referred her to a pediatric oncologist for more testing and treatment. However, leukemia treatment in young children often calls for the use of blood products. Because of the religious preferences of the family, the pediatric oncologist and the child’s family had a heated disagreement concerning a treatment plan, which ended with the family walking out of the office. Because of his experience, Dr. Sullivan explains that he was able to find another oncologist for the child who successfully treated her without the use of blood products, and the girl survived her cancer. Also, Dr. Hamilton says that his hospital does all they can to accommodate these beliefs (Hamilton Personal Interview). “We have special programs in place to see to it that all medical decisions are well thought-out and consistent with the patient’s Jehovah [sic] beliefs, but we have all the [traditional] alternatives available to them should they choose them” (Hamilton Personal Interview). As Dr. Sullivan and Dr. Hamilton demonstrate, many physicians are willing to mold treatment around patients’ religious beliefs to establish flexible treatment plans.

Other stories with Jehovah’s Witnesses are not as successful. Dr. Sanchez says, “I had a patient bleeding one day that decided to bleed to death before receiving blood. I respected his decision” (Sanchez Personal Interview). In this instance Dr.

Sanchez was unable to determine an alternative treatment plan to save her patient. Dr. Hamilton also says that he has seen times when decisions like the one above, “cost them [the patients] their lives” (Hamilton Personal Interview). While a physician’s religious beliefs might have mixed influence on patient treatment, it is clear that the beliefs of a patient can have extreme influence on the outcome of his or her medical situation. The physician might have disagreed with the patient’s decision, but it is important to note that in all the situations in which the patients did not survive due to refusal of treatment, the physicians respected their decisions.

Jehovah’s Witnesses are not the only patients with religious views affecting their treatments. Dr. Hamilton says that he has treated “Christian Scientists who refuse medication and vaccines...” (Hamilton Personal Interview). In an article in *The New York Times*, leaders of the Christian Scientist community explained their view of medicine. Illness is considered “a mistaken belief” and a “conflict between ‘correct’ and ‘incorrect’ thinking” (Vitello 2012). In the past, Christian Scientists have been told by their religious leaders not to seek medical care. Similar to Jehovah’s Witnesses, much of the controversy regarding these decisions has come from the deaths of children. Lawsuits are often filed regarding these matters. In fact, “over its history, more than fifty church members or practitioners have been charged in connection with such deaths” in the United States (Vitello 2010). In terms of treatment, in this case there are not many alternative options. Dr. Hamilton explains that all they can do is “advise them of the risks they take, and they have to make a choice that is in their own best interest physically and spiritually” (Hamilton Personal Interview). However, there are counselors in many hospitals who facilitate a discussion about what will work best for the family. These situations usually do not result in a compromise solution due to the incompatibility of the religious practices and medical treatment. Currently, Christian Scientists are attempting to get health insurers to include non-traditional medical approaches like biofeedback in health insurance plans (Vitello 2010). While these provisions were included in 2006 legislation in Massachusetts and the United States Senate, they were later taken out. Therefore, the deep disagreement on medical treatment between Christian Scientists and health insurers is far from resolved.

Dr. Shander explains that he has also had experiences with patients of other religions in which their religion influenced the treatment they desired. This has included those who are Catholic and are against abortions or a patient who is Jewish and has certain ways to handle brain death (Shander Personal Interview). He says that there are some far Eastern cultures in which taking medications containing substances like bovine may be discouraged. However, Dr. Shander finds that these examples are not as common as changing treatment plans for Jehovah's Witnesses, and alternatives to the most common treatments are usually not as extreme in these cases as avoiding any blood products. With the exception of Catholics, these instances are also less commonly seen.

However, the impact that a patient's religion has on treatment changes based on the specialty in which the patient is being treated. Dr. Sullivan notes that because he is a pediatrician dealing with very young patients, he does not have as many cases in which religion dictates treatment as physicians in other fields (Sullivan Personal Interview). Most of his patients are too young to have strong religious preferences so the instances he sees the most involve the religion of the family or parents, not only of the patient. This case is very different than that of Dr. Shander, who works in a Bloodless Surgery Center, which is frequented by Jehovah's Witnesses due to their religious needs (Shander Personal Interview).

Religion and Patients' Views of Their Illness

In addition to treatment plans, a patient's religion also affects how the patient views his or her illness, and often his or her ability to overcome or cope with the illness. Dr. Hamilton offers a fitting example, from his experience with a family member:

My father-in-law died of squamous cell carcinoma of the neck. When he was diagnosed it was very advanced and the treatment was really palliative. It would prolong his life but not by a great deal. I talked with him about his choices: he could avoid some invasive surgeries and chemotherapy, etc. He showed me a book he had read and re-read. Thomas à Kempis, *The Imitation of Christ*. He said, "I am either a man of faith or I am not, and if I am a man of faith I feel like I should battle this cancer and put the outcome in God's hands." That was a health decision

based on his faith, although the specifics of the treatment were not dictated by religion - he could have chosen either. In his mind, his faith meant that he should battle the cancer and accept the pain and suffering of the treatment in the hope of improvement. He died five months later, but he did battle it to the very end. We took him home from the ICU and allowed him to rest in bed on a ventilator. Many family and friends came to visit over the next few days, and when we all said goodbye, we gathered around him and turned the ventilator off. That was a faith-based decision as well (Hamilton Personal Interview).

As demonstrated in Dr. Hamilton's story, religion has been shown to have an effect on a patient's perspective of an illness. As Dr. Koenig describes in his book, studies show that religious patients recover from depression faster than those without religion beliefs (Koenig 2008, 71). As he explains: "there is a consistent and replicable inverse relationship between religious involvement and depression" (Koenig 2008, 69). Those who have a positive faith and a religious community to turn to for support often recover from episodes of depression much faster than those who have no faith to turn to or who have negative faith issues, as will be discussed shortly.

Individuals suffering from psychiatric disorders have attributed their recoveries to their strong religious beliefs. In *The Healing Connection*, Dr. Koenig discusses one such patient with schizophrenia named Alison Fletcher (Koenig 2000, 133). Fletcher spent ten years moving in and out of mental facilities. Finally, she joined a church and found she was better able to deal with her mental illness. She says "[d]uring that time, with the encouragement and support of my church friends I was able to get off Social Security and find a job" (Koenig 2000, 136). Afterwards, as she continued to get better, she explained that: "I can't say it's all been roses ever since. I've had some struggles. There are times I should have taken my medication and I didn't. Times I became very upset and disturbed. But I made it through. And I keep making it through. I haven't been hospitalized for two and a half years now...We're even weaning me off the drugs I've been on" (Koenig 2000, 136). She attributes all of this success to her faith and new mentality in tackling her mental illness.

Religion has also been shown to provide a positive outlook for those with critical or terminal illnesses. One patient with

Hodgkin's Lymphoma describes ways in which his religious community has changed his view on his cancer. He says, "it forces me to look outside myself and that's good. When I see other peoples' problems, especially those which seem greater than what I face, but even those whose problems might pale in comparison to mine, it changes my perspective. It's just harder to get depressed about your own situation when you're focused on other people" (Koenig 2000, 110). In a study of 330 patients in a teaching hospital suffering from various ailments, 42 percent cited religion as the primary reason they are able to cope (Koenig 2008, 55). This study is further supported by a study that found that of 382 terminally ill patients in California, 44 percent explained that prayer allows them to cope with their musculoskeletal pain (Koenig 2008, 55). It can be suggested by these data that religion plays an important role when somebody is diagnosed with a terminal illness.

The influence of religion on physical health is not limited to adults. A review published in *The Journal of Adolescent Health* considered 43 studies concerning adolescent health, attitudes and spirituality published between the years 1998 and 2003 (Rew, 433). The review found that most of these studies used valid and replicable methods. The aggregation of the data from these studies showed that overall, religion and spirituality can also positively affect the health attitudes, outlooks, and physical and mental health of adolescents (Rew, 434). More information needs to be collected; however, these studies are a good start to demonstrating the importance of religion in the lives of adolescents.

Across a range of studies there is a correlation between religious individuals, and positive health habits and longevity. A study that assessed 5,286 patients over a 28-year period found that the patients were 23 percent less likely to have died by the conclusion of the study if they regularly attended religious ceremonies (Mueller, 243). Furthermore, in 1997 a study conducted by the Human Population Laboratory in Berkeley, California, found that there are many factors that affect longevity and are influenced by church attendance (Koenig 2000, 137). Researchers found that "frequent attendees were ninety percent more likely to stop smoking, thirty eight percent more likely to increase exercising, seventy-nine percent more likely to stay married..." as well as "nearly two-and-one-half times more likely to

remit from depression” (Koenig 2000, 138). It was suggested in another study conducted by P.R. Steffen and A.L Hinderliter that religious coping can lower blood pressure, which can then lead to better cardiovascular health (Steffen, 523). These data suggest that in the absence of other variables, strong religious belief and church attendance may promote a healthy lifestyle.

Religion can also be the source of problems in people’s responses to illness. Studies have shown that when patients have negative faith issues, such as being angry at God for allowing them to get sick, it can worsen their symptoms. In a Duke University study it was found that of 600 ill patients admitted to the Veterans Administration Hospital, when patients had a negative religious feeling they tended to be more physically and mentally ill, and this tended to last longer than patients without religious views or with positive religious views (Koenig 2000, 144). Others refuse to change their lifestyles because they think that God will heal them. One example is Mary, a patient of Dr. Koenig (Koenig 2000, 144). Mary was diagnosed with type two diabetes and told to change her lifestyle, including losing weight and exercising regularly. However, Mary decided that if she just prayed to God she would not need to change and refused to modify her behavior. A similar result was found in a study with veterans with Post-Traumatic Stress Disorder (PTSD) (Fontana, 579). Those with negative religious issues were more likely to spend time in need of mental assistance and resources than others diagnosed with PTSD (Fontana, 580). Therefore, it is not only important for physicians to ask about positive religious beliefs, but also to determine if the patient has any negative religious issues that could impede recovery.

The Value of Assessing a Patient’s Spiritual History

In addition to the importance religion has been shown to play in patients’ ability to deal with long-term illnesses, patients often show a desire to be asked about their spiritual needs if they have a serious illness. In a study by the American Medical Association, 177 adult patients taken by ambulance for symptoms of coronary disease were interviewed regarding how they would feel about physicians taking spiritual histories if they were diagnosed with a terminal illness (Eluman, 1). They found that about one half of the patients viewed themselves as religious. Of those who said they were religious, almost all, or 94 percent, of patients said that they would want their physician to take a

spiritual history if they were diagnosed with a significant illness. Of those who said that they did not have religious affiliations, half of the patients said that they thought that physicians should take a spiritual history. Therefore, when patients with and without a religious affiliation are combined in this study, the majority of the patients thought that physicians should take a spiritual history, regardless of whether or not they are spiritual (Eluman, 1). That patients have a desire to be asked questions about their spirituality suggests that it is an important factor for patients to that patient in treatment and can ultimately lead to a more trusting relationship between patient and physician.

It is evident from the number of cases in which religion influenced treatment that patients often give religion an important role in treatment. Another example of this is in a study done at Harvard by Dr. Tracy Balboni. Balboni and other Harvard researchers interviewed 230 patients with advanced stages of cancer being treated in the country's best cancer centers. Each patient was asked to rate on a scale of one (not at all) to five (completely supported) whether the health system met their spiritual needs. Forty-seven percent of the patients indicated that their religious needs were met little if at all (Balboni, 555). When nearly half of all patients think that the medical system could be doing more to support their spiritual needs, it indicates a problem that needs to be alleviated. However, the problem is getting farther from a solution. As hospital budgets and finances are being cut, one of the first areas trimmed is that of chaplains and other spiritual leaders (Koenig 2008, 25). Without these individuals, patients' spiritual needs are being left in the dark. Because of this, it is becoming more and more important for physicians to fill this role so that patients' spiritual needs are met.

Typically a patient history consists of past medical problems, family medical history, and current symptoms. However, the need for physicians to be more engaged with their patients' religious needs is certainly problematic when one considers that many physicians are uncomfortable with taking a religious history (Koenig 2008, 26). Because of this, it will become necessary in the future to train current physicians as well as future physicians in medical school in the rationale and method for taking a spiritual history. Recently, a study published in the *International Journal of Psychiatry in Medicine* worked with physicians on a new way to discuss a patient's spiritual needs with a physician (Kristeller, 20).

Five oncologists underwent training in the Oncologist Assisted Spirituality Intervention Study (OASIS) learning the questions and dialogues that the study recommends. The recommended dialogue between physician and patient is one that allows the physician to gauge the feelings of the patient and move in an indicated direction. This seems preferable to a set list of questions, as it would cater to each individual patient's desires.

The discussion has seven parts and is set to take roughly five to seven minutes, which will not increase the time required to take a typical medical history. The second step is the most personalized, in which the physician gives different responses based on whether a person has a positive-active faith response, neutral-receptive response, spiritually-distressed response or defensive/rejecting response to an introduction of religion in their care. The patients were asked to fill out an inquiry directly following the appointment and three weeks later over the phone as to how they felt regarding the OASIS discussion in their appointment. This study found that overall, "using a brief, patient-centered approach is acceptable to the majority of patients and relatively comfortable for physicians" (Kristeller, 20). More specifically, over half of the patients said that they felt at ease talking about religion with the oncologist (Kristeller, 7). Furthermore, about 40 percent thought that the discussion was useful and about 33 percent of patients thought that talking about these issues with their oncologist helped them cope with their illness (Kristeller, 7). These numbers indicate the importance of the discussion of religion between a physician and patient. If taking five minutes to talk about religion would aid about a third of patients and allow them to deal with and hopefully recover from their illnesses, it is most certainly a valuable practice.

However, there were a few flaws with the design of the study. Most importantly, the study included a demographic highly enriched in patients of a singular race (Caucasian) and religion (Christian) (Kristeller, 8). In order to truly validate the outcome of this study it will be necessary to run similar tests in other areas with mixed demographics. Furthermore, these patients all had cancer, which is often a terminal illness. Would discussions of religion be as beneficial during an appointment for a yearly check-up or hospitalization for appendicitis? That is certainly another area that needs to be probed. While the number of studies considering religion and medicine continues to increase, it is likely

that these questions could be answered in the not so distant future if researchers continue to examine this matter as they have recently.

Recommendations

Religion has been shown to help patients in times of need, and most patients feel that they would want their physician to take a spiritual history (Eluman, 1), as was demonstrated in the study of coronary disease patients; therefore, it should be something that many physicians consider including in their treatment of patients. Furthermore, interviews from this study showed that physicians often feel that religion can impact the treatment a patient receives. These recommendations can assist the physician and the medical community in treating the whole person.

Overall, the main recommendation stemming from the cited studies as well as this paper is that physicians need to move towards taking a spiritual history of their patients prior to treatment. This will provide doctors with knowledge of the extent to which religion is a presence in their patients' lives or even the knowledge that their patients are not religious. This knowledge is useful in the development of a treatment plan as numerous cited studies have demonstrated that it can be beneficial for patients to have their religious beliefs acknowledged by the medical community treating them (Koenig 2008, 55). Furthermore, it can also help physicians determine the role religion has in their own attitudes towards medicine and treatment. Spiritual histories can transform the unexamined role of religion into the examined role of religion in patients' medical treatment. For the benefit of the patient, physicians should attempt to mold treatment plans with respect to a patient's religion. Since it recognizes that patients' spiritual needs and desires vary based on religious tradition as well as individual beliefs, a spiritual history will provide specific information regarding what the patient feels would benefit him or her with the treatment plan. While food preferences (e.g., kosher, halal) are already addressed by hospitals, the patient may have other spiritual desires such as meeting with other patients with similar beliefs to pray or discuss religion and healing or the patient may wish to incorporate support from their religious community into the healing process. A spiritual history provides patients with the opportunity to express their spiritual needs and incorporate these needs into the healing process instead of treating religion as taboo.

As Professor Emeritus of Medicine at Yale University Howard Spiro explains: “We all have much to think about, but my conclusion was that mainstream doctors have got to take the lessons of alternative medicine, the lessons of healing, more to heart than they do. We should consider mind and spirit as well as the body” (Yale Medicine). With that it is also possible that medical schools could begin discussing some aspects of alternative medicine that are founded in science such as treatments recommended by the National Center for Complementary and Alternative Medicine, a group within the National Institutes of Health, giving physicians an idea of how to approach situations should they encounter patients with religious beliefs such as Christian Scientists who will not accept scientific medical treatment.

Another recommendation is to begin teaching basic religion classes in medical schools. Many of those opposed to taking religious histories are physicians who have been practicing for many years. It is understandable that, because they are established and have developed their own ways of taking medical histories, they are opposed to incorporating religious preferences. Therefore, the change could come with the next generation of physicians. If medical schools begin teaching about religious histories it will begin to show up in their medical practices after graduation. Ideally with this system, taking a spiritual history will one day be of little debate and will be just another part of the usual medical history.

Training in taking religious histories has already been incorporated into many medical schools. The Association of American Medical Colleges (AAMC) reports that schools like Loma Linda University School of Medicine offers classes that teach students about how religion can play into patient’s medical treatments. However, at the moment most of the religious concepts taught at medical schools are bioethics classes that only touch upon religion and possible ethics issues but do not give detailed backgrounds as to the beliefs of each religion. While incorporating another class into the medical school curriculum is certainly difficult due to the already grueling nature of classes, it would have its benefits considering the number of patients who feel that a spiritual history makes their medical experience better and aids in their recovery.

Above all, the most important thing that a physician can do, even without training in taking a spiritual history, is to tell his or her patients that they are open to discussing spirituality issues if the patient chooses to do so. While this is not gathering as much information as the OASIS questionnaire, it is laying a foundation for an open conversation between the patient and physician. It is acknowledging that the physician is concerned with both the mental and physical state of the patient. The more information a physician can obtain, the more information they will have to assist their patient. But if this information cannot be easily obtained, some information is better than none. A physician needs only to inform the patient that they are there to help.

In order to make a physician more comfortable with discussing religion, a starting point could be allowing conversations between physicians concerning religion in the office. Physicians need to realize that conversations regarding religion are not taboo and can be discussed. If physicians can discuss religion with one another it is more likely that they will be able to ask a patient about religion as well.

In conclusion, the conversation of religion and spirituality must be furthered between physicians and patients. As Koenig identifies in his book, “[p]eople are tired of being treated as medical diagnoses: ‘the brain tumor in ICU’ or ‘the liver in room 428.’ They want to be seen and cared for as whole persons –as mental, physical, and spiritual beings” (Koenig 2000, 165). People are more than their medical problems, and attending to and acknowledging the entire person could assist patients in their acceptance, treatment and recovery from illnesses and ailments. There are ways to facilitate a conversation concerning religion between a patient and a physician that would take little time and help a patient. I hope that in coming years we can see these methods integrated into the patient’s conversation of medical history.

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Appendix 1

Questions asked in personal interviews with Dr. Shander, Dr. Sullivan, Dr. Sanchez, Dr. Hamilton, and Dr. Koenig.

Interview Questions

1. With this research project I would like to gain a better understanding of how religion plays a role in the treatment of patients in medicine. I am interested in exploring this topic in terms of both doctors' and patients' beliefs. On a scale of 1-5, with 1 being significantly and 5 being not at all, did religious beliefs influence your decision to go into medicine?
2. If religious beliefs did not influence your decision to go into medicine, why not? If religious beliefs did influence your decision to go into medicine, why?
3. Has there ever been a time when your religious beliefs influenced how you handled a patient's treatment? If yes, what beliefs in particular were involved and why were they significant in that context? Would you classify these beliefs as aligning with any one particular religion?
4. If there has not been a time when your religious beliefs influenced how you handled a patient's treatment, do you think that religious beliefs enter into other doctors' treatment of patients? Can you think of any examples?
5. Has there ever been a time when your patient's religious beliefs influenced how you handled a patient's treatment? If yes, what beliefs in particular were involved and why were they significant in that context? Would you classify these beliefs as aligning with any one particular religion?
6. If your patient's beliefs influenced the way you handled the patient's treatment, did you have to change a treatment plan from what you would have done otherwise?
7. If your patient's beliefs did not influence the way you handled the patient's treatment, did you get the sense that the patient related the treatment to her or his own religious beliefs in any way?

Appendix 2

Method of questioning in the OASIS study. See reference in Works Cited.

I. INTRODUCE ISSUE IN NEUTRAL INQUIRING MANNER.

“When dealing with a serious illness, many people draw on religious or spiritual beliefs to help cope. It would be helpful to me to know how you feel about this.”

II. INQUIRE FURTHER, ADJUSTING INQUIRY TO PATIENT’S INITIAL RESPONSE.

a. **Positive-Active Faith Response:** “What have you found most helpful about your beliefs since your illness?”

b. **Neutral-Receptive Response:** “How might you draw on your faith or spiritual beliefs to help you?”

c. **Spiritually Distressed Response** (e.g., anger or guilt): “Many people feel that way . . . what might help you come to terms with this?”

d. **Defensive/Rejecting Response:** “It sounds like you’re uncomfortable I brought this up. What I’m really interested in is how you are coping... can you tell me about that?”

III. CONTINUE TO EXPLORE FURTHER AS INDICATED.

“I see. Can you tell me more (about . . .)?”

IV. INQUIRE ABOUT WAYS OF FINDING MEANING AND A SENSE OF PEACE.

“Is there some way in which you are able to find a sense of meaning or peace in the midst of this?”

V. INQUIRE ABOUT RESOURCES.

“Whom do you have to talk to about this/these concerns?”

VI. OFFER ASSISTANCE AS APPROPRIATE AND AVAILABLE.

“Perhaps we can arrange for you to talk to someone . . .”; “. . . there’s a support group.”

VII. BRING INQUIRY TO A CLOSE.

“I appreciate you discussing these issues with me. May I ask about it again?”

WHAT LED TO THE BOOM IN PRIVATE PRISONS?

NICOLE KURUSZKO (CLA 2013)

Since the opening of the first private facility in 1983, private prisons remain one of the fastest growing industries in America today. Touted as cost-efficient alternatives to state-run penitentiaries, private prisons continue to be a matter of debate between advocates and critics of the private sector's control of prisons. The movement towards the modern privatization of prisons in the United States first developed during the 1980s. During this period, the massive incarceration rate and deregulation constituted the driving forces behind the unprecedented growth of private prisons. This paper intends to raise the issues that accompany the privatization of penitentiaries and the political trends that might have led to the expansion of this industry.

Deregulation of the 1980s

Deregulation inevitably set the stage for the privatization of prisons under the rise of the Neoliberal Regime in the 1980s. President Reagan declared that the nation's economic challenges were results from government expansion, welfare spending, and tax policies. A larger emphasis was placed on the diminution of the state through deregulation and welfare reform (Eisner 2011, 119). Through regulatory reform, the expansion of the social regulatory state became greatly constrained by presidential agency appointments and budget cuts. Congress had even expanded its legislative control over the bureaucracy by implementing detailed regulatory statutes (Eisner 2011, 127). Thus, the social regulatory state began to lose its political strength.

During the late 1970s and early 1980s, the United States experienced stagflation and rapid unemployment, leading the public's confidence in the government to falter (Selman and Leighton 2010, 50). Reagan advocated for monumental changes in the role of government, even framing government to be the problem rather than the solution to economic challenges. In an effort to raise living standards, the Reagan Administration

emphasized the importance for government to address the imperfection of the private marketplace (Eisner 2011, 130).

Ultimately, the era purported an anti-government approach in providing services. In explaining the shift, economists argued that “Reaganomics” provided another reason to enact deregulation. Reaganomics represented a model for across-the-board tax cuts and widespread cuts in social welfare spending in an effort to revitalize the economy. Administering tax cuts to the wealthy would then produce a “trickle-down” effect through the rest of society. In the end, however, massive spending cuts affected alternative criminal justice practices, such as rehabilitation programs. Still, Reagan attacked social programs by linking public assistance programs and lenient crime policies to the rising crime rates (Selman and Leighton 2010, 51).

Privatization Gains Popularity

To establish a free market solution to the government’s problems, two main elements remain critical to understanding the wave towards deregulation. First and foremost, proponents emphasized the cost-effectiveness of a smaller government. Secondly, the belief system at the time grew increasingly pro-business and embraced the free market. Likewise, conservative economists provided different theoretical models in explaining the economic benefits of privatization. The public-choice theory, for example, assumed that without the profit motive and competition, public services are essentially “captured” by bureaucrats who neglect the interests of the public. According to this market model, existence of government monopolies in the public service ultimately undermines the quality of the service (Selman and Leighton 2010, 52).

In 1982, President Reagan established the Grace Commission, which released a twenty-three thousand page report on the government’s inefficiency (Selman and Leighton 2010, 53). Additionally, Reagan launched the President’s Commission on Privatization to review the appropriate division of responsibility between the federal government and the private sector. Or, in other words, its mission was to identify those programs that could be performed more efficiently by the private sector. Overall, the Reagan Administration identified 11,000 governmental activities that could be privatized including areas in low-income housing, educational choice, the postal service, and prisons (Greene 2002,

2). Clearly, the legitimacy for the privatization of prisons arose from the recommendations conducted by various commissions.

Moreover, many states had established restrictive legislation that barred the private sector from using prison labor. Instead, these states passed legislation that encouraged the private sector to participate in prison industries. In a similar fashion, the government created a federal pilot program that was designed to test the feasibility of the private sector involvement in the prison systems (Sexton, Farrow, and Auerbach 1985, 2). The Justice Assistance Act of 1984 enabled the accessibility to interstate markets necessary for the success of prison industries operated by private business (Sexton et al. 1985, 1). Eventually, the federal pilot program and legislation enabled the idea of private prisons to gain more traction during the 1980s.

In 1983, the National Institute of Justice commissioned the Criminal Justice Associates (CJA) to conduct a national survey to identify elements that were conducive to the private sector's involvement in the prison industry. The survey essentially illustrated that there was a strong interest on the part of corrections administrators, governors, and legislators in private sector employment of prisoners (Sexton et al. 1985, 2). Specifically, the survey found that there was a gradual growth in the number of projects in which the private sector was involved with state-level prison industries (Sexton et al. 1985, 1). This strong interest correlated with the increase in the variety of private sector work programs.

Get Tough on Crime Campaign

During the 1980s, the national political discourse focused primarily on a movement to “get tough” on crime (Greene 2002, 12). Under President Reagan, the campaign emerged as a powerful force in the nation's political agenda, dramatically affecting the incarceration rate. In fact, the “Get Tough on Crime Campaign” established a set of policies that particularly emphasized punishment as the sole response in combating crime (PRA 1992, 52). The “get-tough” policies involved escalating punishments for non-violent offenders (Mauer 2001, 14). In other words, the era ushered in a politically conservative climate in approaching social problems.

Launched during the Reagan Administration, the “War on Drugs” is central to understanding the rise in incarceration within

the penal landscape of the 1980s and 1990s. Within the context of the “Get Tough” movement, the drug war emphasized strong law enforcement and the criminal process to control and regulate drug abuse (Rudovsky 1994, 236). In fact, federal funding for the drug war soared from \$1.5 billion in 1981 to \$6.6 billion by 1989 (Mauer 2001, 11). These federal budget allocations and political investments gave prominence to the drug issues and sentencing laws that emerged throughout the decade.

War on Drugs Sentencing

The enactment of anti-crime policies and sentencing reforms resulting from the “War on Drugs” led to an increase in prison populations. The 1980s established a set of mandatory minimum sentencing statutes that required lengthy prison sentences for a range of drug offenses (Lynch 2012, 6). In 1984, the Sentencing Reform Act mandated the formation of the U.S. Sentencing Commission and established binding sentencing guidelines to narrow judges’ sentencing discretion (Selman and Leighton 2010, 38). With the passage of the Anti-Drug Abuse Act of 1986, Congress specified that crack cocaine be treated significantly more severely than any other drug. It imposed a five-year mandatory prison term for possession of as little as 5 grams of crack cocaine (Lynch 2012, 6). By 1996, nearly every state had adopted some type of mandatory sentencing in one form or another (Mauer 2001, 11). In fact, in direct response to the drug war, 33 states had abolished limited parole, 24 states introduced three-strikes laws, and 40 states had initiated truth in sentencing laws (Selman and Leighton 2010, 38).

The 1980s saw the passage of laws designed to lengthen sentences of non-violent drug offenders. For instance, truth in sentencing laws, which were first enacted in 1984, required offenders to serve a substantial portion of the prison sentence imposed by the court before being eligible for release (Ditton and Wilson 1999, 3). The introduction of the three-strikes laws mandated long sentences for habitual offenders, imposing 25 years to life in prison on persons convicted of three or more serious criminal offenses (Chen 2008, 345). Accomplice liability laws also sentenced those for drug crimes that could not be directly linked to them or for involvement in a crime that was relatively marginal (Jackson 2003, 1). Evidently, the incorporation of anti-crime policies remains the main culprit in a higher

incarceration rate. This turn of events ultimately became one of the reasons for the justification of private prisons.

Overcrowding in Prisons

The escalating prison overcrowding resulting from the “War on Drugs” and rising costs became increasingly problematic for local, state, and federal governments. From 1984 to 1991, the number of inmates nationally rose by 79 percent (Mauer 2001, 12). Still, in 1989, federal prisons were operating at 163 percent of design capacity (Bowman 1992, 1). To accommodate the increase of prisoners from 1985 to 1986 alone, seven new medium-sized (500-bed) prisons were needed each month. However, federal aid to state and local governments had been shrinking since the early 1980s. By 1986, the general revenue sharing program was depleted, leaving many local governments without any federal assistance (McDonald 1998, 8).

As an immediate consequence of insufficient prison facilities, inmates brought lawsuits requesting relief from overcrowding. The U.S. Department of Justice determined that, in order to manage periodic maintenance and special housing for protective custody and disciplinary cases, a prison should maintain reserve capacity (Duitsman 1998, 11). By 1985, prisons in two-thirds of the nation’s states were under court order to correct conditions that violated the Eighth Amendment prohibition against cruel and unusual punishment. To exacerbate matters further, over 18,000 prisoners were released to alleviate overcrowding (Selman and Leighton 2010, 42).

The turn to the private sector in providing prison care was a feasible solution to governments facing debt restrictions. A private firm would simply finance, construct, and operate a new prison, while the payments to the firm by governments for housing the state’s prisoners would be charged against operation budgets; other jurisdictions relied on a variant of this arrangement (McDonald 1998, 8). With the litigation victories for inmates, the release of prisoners, and depleting financial assistance, administrators sought the private sector to help assuage overcrowding issues as well as rising prison costs (Selman and Leighton 2010, 41).

Entering the Private Sector

In response to the overcrowding in prisons from the War on Drugs, private business interests gained the leverage in making private prisons a reality. As seen during the Reagan era, the fiscal crisis in correctional facilities had reached its climax. By the mid 1980s, many states faced serious budgetary problems with the increased costs in running their private prisons, particularly with a higher prison population (Dolovich 2005, 5). As a result, private-sector involvement in prisons moved from the simple contracting of services to contracting for the complete management and operation of entire prisons (Cheung 2004, 1). Contracting gave public officials a way to accommodate prisoners, while avoiding some of the alleged constraints imposed by spending limitations (Linowes 1988, 162). Private prisons typically operated under a contract with a government agency. These contracts specified the responsibilities of the private operator and the prisoner rate at which the operator would be paid (Dunham 1986, 78). In general, the economic promise of private facilities greatly attracted states to privatization.

The rapid incarceration rate alongside the ardor of deregulation led to the construction of the first modern private prison. Established in 1983, the Corrections Corporation of America (CCA) claimed that it could build and operate state and federal prisons with the same quality of service provided by the government. In 1984, the CCA received a contract for a facility in Hamilton County, Tennessee. This awarded contract was significant, as it signaled the first case of the public sector contracting management of a prison to a private business (Mason 2012, 2).

In its first year, however, the CCA began promoting privatization, because it had not yet been granted a contract to run the entire Tennessee prison system (Selman and Leighton 2010, 55). For example, the CCA experienced growing opposition as a result of its tarnished reputation related to cost overruns in Florida, riots, and inmate escapes (Mason 2012, 2). Despite the opposition, the CCA eventually placed a bid to take over the entire prison system of Tennessee. Over time, the major selling point for state legislatures was the CCA's claim of hefty cost-savings. Not surprisingly, Tennessee began to experience large financial setbacks in order to accommodate the rising prison population with new facilities (Selman and Leighton 2010, 63).

After testifying before congressional committees, the CCA gained widespread media attention, opening the political discourse on privatizing prisons. Tennessee eventually turned down CCA's offer, but passed the Private Prison Act of 1986, which ensured that at least two state facilities would be privately owned and operated in the future. Consequently, the legislation brought forth increasing attention to the prospects of building future private prisons (Selman and Leighton 2010, 67). Today, the CCA remains one of the largest private prison companies and manages more than 75,000 inmates and detainees in 66 facilities (Mason 2012, 2).

Advocates of Private Prisons

Oftentimes, the proponents of private penitentiaries argue that the economic savings of privatization hold a significant advantage over the public sector's involvement. For instance, advocates for privatization assert that private prison management reduces costs by as much as 20 percent (Cheung 2004, 1). With financial setbacks or overcrowding in state prisons, the private sector offers assistance with the capital financing of prison construction. Of course, private firms pledge to run prisons at a much lower cost and still take over the daily management of entire penal facilities (Dolovich 2005, 5). Furthermore, advocates contend that the labor costs in the operation of public prisons are inefficient. Instead, private prison companies maintain that they could efficiently reduce the costs of labor by controlling wages and benefits, which would ultimately yield net substantial savings for the government (Cheung 2004, 2). In fact, private agencies indicate cost-savings by employing mostly non-union employees (Mason 2012, 7).

During the political and economic context of the 1980s, privatization received increasing approval from taxpayers who demanded that governments provide more services with fewer resources (Pratt and Maahs 2010, 358). In general, this argument emerges from the "public choice" theoretical approach in understanding privatization. Supporters of private facilities assume that the competitive marketplace motivates private entities to develop efficient prison construction practices. Besides the vast economic savings, private prisons affirm an ability to operate more efficiently and even offer a higher quality of services than those that are already publicly administered (Cheung 2004, 3). In supporting the efficiency hypothesis, scholars affirm that the

private sphere is less inhibited by bureaucratic constraints. As a result, private agencies are seen as more flexible than their public counterparts (Pratt and Maahs 2010, 359). Overall, the 1980s signaled an unprecedented interest in the private sector as a solution to fiscal problems.

Since a private prison's success relies on the most cost-efficient methods in administrating services, advocates assert that these factors lead these facilities towards innovation. Nearly 300 prisons in the United States currently need replacement or renovation as they grow too obsolete to function (Moore 2011, 6). In a word, to deliver the same product as the government at a lower cost, private prisons often turn to new management approaches, monitoring techniques, and administrative efficiencies (Moore 2011, 15). In order to keep quality services, private prisons also hold incentives in meeting the American Correctional Association's (ACA) accreditation standards. Simply put, the ACA accreditation is an important indicator of improved conditions for prisons under court orders (Moore 2011, 27). On average, privately operated facilities do not suffer as many lawsuits as government-run facilities do (Moore 2011, 26). According to advocates, less litigation enables the private facilities to keep their cost-efficient reputation and to develop innovation.

Proponents additionally maintain that private prisons generate potential income for a surrounding community while saving the taxpayer money. For instance, the CCA's mission includes providing valuable economic benefits to its local community partners by providing stable employment and by paying taxes (CCA 2008, 1). Likewise, some state legislatures have seen private prisons as an opportunity to spur development, particularly in economically depressed and rural areas. In 1998, for example, lawmakers approved a bill to build a 1,000-bed prison near the small impoverished town of Tutwiler, Mississippi. Ultimately, supporters of the \$25-\$30 million private prison believed it could create 200 to 250 jobs and create an annual payroll of nearly \$3 million. State officials and administrators speculated that the opening of a private prison in an area of massive unemployment would attract much needed industry to the area (Sheffield 1998, 14). Thus, private prisons are also described to be important economic development tools.

Critics of Private Prisons

Despite the support for the private sector, heated debate and controversy continues to stir regarding private prisons. Critics of private prisons continue to argue on both empirical and normative grounds. The largest dissent from critics emerges from the fact that these facilities claim to provide significant cost savings of 15 to 20 percent. However, even with the private entrepreneur's ability to build facilities at a cheaper rate than government, results remain inconclusive as to whether private prisons can operate at the levels pledged. For example, the Bureau of Justice Statistics observed that the cost savings promised by private prisons "have simply not materialized" (Austin and Coventry 2001). For example, the report's conclusions stated that the average saving from privatization was approximately one percent compared to the earlier projected 20 percent savings (Cheung 2004, 2). The findings from the department report strongly suggest that private prisons operate much the same as public facilities.

Although private prisons usually offer only modest cost savings, they do so primarily as a result of reductions in staffing, benefits, and other labor-related costs. Critics argue that the design of staffing patterns actually contribute to further prison-related incidents. In general, cost savings in private prisons are attributed to the use of nonunion labor, resulting in lower wages. Normally, labor costs account for approximately two-thirds of prison operating costs. However, the use of nonunion labor results in significant savings for private prison companies (Clement 2002, 8). Be that as it may, studies reveal that privately-run penitentiaries provide lower salary benefits and advancement by administering \$14,901 less in maximum annual salaries. On average, private prison employees actually receive 58 hours less training than employees in public prisons. As a direct consequence of these issues, there is a higher employee turnover rate in private facilities as opposed to their publicly-operated counterparts (Mason 2012, 10).

Furthermore, critics of private prisons contend that lower-quality staffing can result in significant consequences for prisoners. In many instances, poorly trained guards contribute to the risk of escapes and inmate violence, as well as prisoner abuse. Critics argue that the public sector eventually becomes forced to attend the dangerous repercussions as a result of

systemic failure and poor management of private prisons. For example, many deadly incidents in private prisons have given credence to these arguments, including vicious riots. In Youngstown, Ohio, a CCA facility experienced a debacle in just fourteen months of its opening with a total of two fatal stabbings, nearly fifty brutal assaults, and six escapes (Selman and Leighton 2010, 105). Over one year alone, the CCA Youngstown Prison suffered from twenty stabbings and two murders (Selman and Leighton 2010, 106). Likewise, the Wackenhut Corrections Corporation's facilities experienced nine stabbings and five murders in 1998 (Selman and Leighton 2010, 108). As a result, critics continue to challenge the private prison's ability to operate efficiently and safely.

Recent studies have also indicated that assaults and maltreatment in private prisons have the likelihood to occur at double the rate than found in the public sector (Mason 2012, 10). In 2001, a grand jury in Florida found that a CCA facility staff member failed to demonstrate adequate health training which contributed to the death of an inmate who swallowed too many pills. Another case against CCA's medical services involved the death of an inmate who was denied a \$35 prescription for his hereditary disease (Mason 2012, 11). Accordingly, such violations in health and safety bring forth the issues of accountability that are often found in the private sector.

Still, the movement towards the modern privatization of prisons of the 1980s also brought with it incentives to continue the private prison industry in contemporary times. Alongside the massive incarceration rate and rapidly depleting state budgets, vested interests are also apparent in maintaining the facilities. The major problem is rooted primarily from the fact that private prisons are exactly that—for-profit businesses. In order to generate profit, these businesses must maximize their cost-savings, even at the expense of health or safety regulation. Some private prisons sell stocks on the stock market, which further exacerbates the problem in detaining prisoners longer and lobbying for certain sentencing policies (Selman and Leighton 2010, 79). In 1997, the CCA acknowledged that the rate of constructing new facilities depends on crime rates and sentencing patterns (Cheung 2004, 4). Naturally, the profit motive hypothesis strikes a chord between the interest of a private prison company to generate profit and public policy.

Yet, corruption in private prisons may also take the form of “kickbacks,” such as the case of the “Kids for Cash” scandal in Wilkes-Barre, Pennsylvania. Two of the Pennsylvania Juvenile Court judges received kickbacks from operators of private detention centers for increased commitments of youths. However, in the thousands of cases, many juveniles were sent to detention for minor charges that normally did not require long sentences. In some instances, the punishment severely outweighed the crime, but some judges sentenced many youths to over twenty years in prison (LWV Seattle 2009, 19). The “Kids for Cash” scandal represents just one of the many problems that could potentially emerge from the private sector’s involvement in prisons.

Overall, the era of deregulation during the Reagan Administration legitimized the use of private prisons on an unprecedented level. With the massive incarceration rate due to the drug war and “get tough” movement, public officials and administrators turned to the private sector for help in constructing new prisons and accommodating the influx of prisoners. Of course, the opening of the first private facility was a product of a new discourse that originated from the growing popularity of privatizing services during the 1980s. However, the privatization of prisons still remains a highly contested matter of debate, as both advocates and critics present valid arguments in explaining the private sector’s role in operating prisons.

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NATION AND DEVOTION: ENGLISH AS SOCIAL CONTROL

ELIZA MAUHS-PUGH (CLA 2014)

The first complete, state-sanctioned English translation of the Bible was published during the reign of King Henry VIII, at the beginning of the English reform movement. This movement corresponded with several concurrent continental reform movements; the conjunction of these is now known as the Protestant Reformation. This translation, known as the Great Bible, was compiled under the oversight of Thomas Cromwell, the King's chief minister, and Thomas Cranmer, the Archbishop of Canterbury. The Archbishop of Canterbury was, in those days, the arbiter of the Roman Church's power in England and the intermediary between the Church and the English monarch. Cranmer himself is perhaps most famous for his involvement in King Henry's divorce from his first wife, Catherine of Aragon, which initiated England's split from the Papacy. Though it is problematic to place his works – particularly those produced under King Henry – in the same category as those of radical reformers Martin Luther and John Calvin, Cranmer was instrumental in the establishment of a separate English church and the coincident liturgical and doctrinal reform. Central to this reform was the compilation, publication, and distribution of the Great Bible, for which Cranmer wrote an explanatory preface.

At this point in history the ideas of national identity and pride, which are so ubiquitous today, were only just in the stages of infancy. Although England was relatively united, as compared with the loose network of protectorates and kingdoms now known as Germany, it would be problematic to put it in the same category as most modern countries, which generally see themselves as having some form of uniting national identity. Several historians (Hans Kohn, Liah Greenfeld) have argued that the early English translations of the Bible were produced in an attempt to create and instill just such a national identity, thereby aiding the consolidation of the nation. More pervasively, this has been presumed to be true in scholarship dealing with associated topics in the same time period and used to further other arguments (Kohn 81-82, Greenfeld 51-54).

Historian Gillian Brennan has offered another view, according to which early English Bibles were principally tools of social control; that is, they were used to bring the populace in line with imperial religious thought (“true doctrine”) (Brennan 20). The central question is, according to Brennan: was the Bible translated into English (which was not the only language spoken in the isles) primarily to rouse national sentiment and bring the nation together, forwarding the project begun when King Henry VIII assumed the position of head of the English church, or was English used as a manner of accessing a larger portion of the population so as to instill true doctrine? Both sides might convincingly use selections from Archbishop Cranmer’s introduction to the Great Bible to advance their argument, but to frame the issue in such a way is to gloss over the fact that the instillation of national identity is just as much a form of social control as the instillation of true doctrine. What is needed is not a further exposition of either of the arguments outlined above, but rather a demonstration of how the construction of a national identity and the instruction of true doctrine, giving preference to the latter, were both forms of social control to be achieved through the conduit of the English Bible. English as a form of social control was born from a genuine concern for interior belief, and was primarily used as such, but it was also an eminently political practice that had nationalizing undertones.

The concept of social control as explicated by Michel Foucault goes beyond the self-evident meaning. Foucault’s social control is best encapsulated in his analogy of the panopticon: a many-faceted prism which contains at its center an eye (Foucault 200). Given the nature of the prism, the eye can see anywhere at any given moment without any way for those outside of the prism to tell where the eye falls. According to Foucault, these people will operate under the assumption that the eye is watching them at all times. If the eye is taken to be analogous to a governing power and the people to the members of the society overseen by this power, according to this model the people will adopt the normative rules of the society as their own and regulate themselves accordingly (Foucault 205). Social control is not so much the forceful imposition of a certain set of rules, beliefs, or norms. by a governing agency as an attempt to convince the people, without doing so explicitly, that the values of this agency are in fact *their* values, usually through some educative structure (207-208). In the case of sixteenth-century England, Brennan argues, by

shifting both the Bible and church services into the vernacular, the English crown hoped to more easily facilitate the instillation in English subjects of correct or true belief and worship.

The Great Bible was first published in 1539, one year after the passage of the *Injunctions of 1538* which, among other mandates, had required that every church purchase and have available an English language Bible. In 1531 papal taxes had been eliminated and in the following year all petitions to Rome had been forbidden. The year 1534 had seen King Henry VIII declared the supreme head of the English Church. Five years before the Great Bible was made available both secular and religious authority had thus been conjoined in the person of the King. Hans Kohn puts considerable emphasis on the political side of the English Reformation in "The Genesis and Character of English Nationalism," arguing that the English viewed themselves as an elect people, akin to the divine selection of the Hebrew People (81-83). It is undeniable that the Great Bible was published during political shifts of tectonic magnitude toward a strongly centralized state, and it is perfectly sensible to presume that it shared in this political transformation.

However, it would be a mistake to forget the English Reformation's devotional character. While it is venturing too far to shift the importance of the English translation entirely to the instillation of true doctrine, Brennan sheds much needed light on the often-neglected devotional side of this reform. However, to tease apart the English Reformation into separate political and devotional strains would be a misstep. It is not necessary to choose between *either* a political *or* a religious historical lens, or between an argument for national identity or social control. The political shifts of the era were not only cotemporaneous with the religious shifts, the two were deeply entwined.

Many of the reforming policies were marked by an obsession with what Eamon Duffy consistently refers to as the "abuse" of the thing. In 1535 (five years before the Great Bible) Cromwell began a series of visitations to smaller monasteries to check for the presence of relics or false miracles, which were summarily to be disposed of (Duffy 384). The following year the whole-sale suppression of the monastic orders began, marked by the physical destruction of monasteries and the expropriation of lands, hand in hand with a continuing attack on the presence of images and relics of saints. Cromwell and others in the monarchy

saw the “cult of the saints,” the primarily medieval phenomenon of venerating the saints, so very popular in England, as potentially dangerous to true Christian belief. These policies were not distant political machinations but rather concrete, immediate manifestations of a concern for devotion and practice. The *Injunctions of 1538* entrenched the attack on the saints, forbidding candles to be burnt before any image, outlawing pilgrimages entirely, and exhorting the people not to put trust in “any other works devised by men’s phantasies beside Scripture” (Duffy 407). However, the discourse of the time was marked not so much by the consummately “anti-idolatry” sentiments of Huldrych Zwingli, leader of the Swiss Reformation, or Calvin, but rather by the desire to halt the *abuse* of the images. After meeting with polemicist and reforming preacher Hugh Latimer, who had been taken under Cromwell’s wing, a Dominican monk recounted that “I have percevyd that hys mynd ys muche more agenst the abusing off tinges than agenst the thynges hytte selfe” (Duffy 380). This period, Duffy argues, is characterized by an almost compulsive obsession with intentionality and inward sincerity.

This is particularly evident in the treatment of the cult of the saints. The *Ten Articles*, published in 1536, expressly bid that “all bishops and preachers shall instruct and teach our people committed by us to their spiritual charge, how they ought and may use [the images],” adding that the images “be representers of virtue and good example” and “that therefore it is meet that they should stand in the churches” (*Ten Articles*, qtd in Fuller 155). So too is it “very laudable to pray to saints in heaven everlastingly living” (156). This explicit affirmation of the validity of the praying to saints and the keeping of images is tempered by the warning that they are to be honored “but not with that confidence and honour which are only due unto God” (155). Regarding the creeping, kneeling, offering, etc. to the images, “the people ought to be diligently taught, that they in nowise do it, *nor think it meet* to be done to the same images; but only to be done to God and in his honour” (155, italics added). The intention is to ensure sincere belief and true doctrine as manifested in practice, that no one might be kneeling and praying to an image of, perhaps, St. Anthony and believing that any resultant miracle be the work of St. Anthony himself and not God.

Many of the policies of the era were in such a way concerned not only with the elucidation and dissemination of this

true doctrine but with the full indoctrination of the people so that all devotional practice should be generated from inward belief that was fully in accord with said true doctrine –a method of control fully reminiscent of Foucault's. These policies were not instated to control solely the *actions* of the populace (that is, the outward manifestations of belief), but rather to shift the inner framework of belief itself so that people would align themselves with true practice in accord with their own convictions, and thus would police their own actions and, possibly, those of others around them. The *Six Articles*, issued in 1539, which maintained a full-bodied interpretation of transubstantiation and the need for the celibacy of the clergy, and professed the efficacy of confession and private masses, called for the heavy penalty of death for anyone who “do publish, preach, teach, say, affirm, declare, dispute, argue or *hold any opinion,*” to the contrary (Janz 334-5, italics added).

Such careful treatment both of the elaboration of the doctrine and of its instillation and protection was necessitated by the sheer convoluted nature of the reform. The Henrician reform walked the delicate line between new and old, often weaving back and forth between the two. Before the rupture with the Papacy, King Henry had been declared a *fide defensor* – defender of the faith – for his amateur theological writings. Even after the rupture he continued to strongly reinforce traditional practice. In addition to esteeming the invocation of saints, the *Ten Articles* rehearsed the sacraments of baptism, penance, and the Eucharist, and lauded intercession for the dead, all of which were sacraments which were under attack by various reform theologians and were strongly defended by the Roman Church. King Henry continued the practice of some traditional customs himself, such as the creeping to the cross on Good Friday (Duffy 423).

The Henrician reform was, of course, still a reform, so it broke with many traditional practices or beliefs, but the way in which it did so was subtle, harkening back to Duffy's argument regarding the abuse of the thing. As the *Ten Articles* stated, one was permitted to pray to the saints as intercessors, but *only* as such. There was a very fine line drawn between the invocation of the saints to intercede with God on one's behalf (true doctrine) and invoking the saints in and of themselves (what the Reformers might have called superstitious practice). In order that people clearly understood the difference, it would be necessary to be as

clear as possible in the communication. It seems evident that when aiming for wide-reaching clarity one is much less likely to choose a language few understand (Latin) over the vernacular tongue (English). English in this way can be seen as the conduit for the education of the people.

Brennan also presents some difficulties for the conception of English as a national language. In 1539 English was the predominant vernacular tongue of the British Isles, joined by the Celtic languages of Welsh, Breton, and Cornish. Vernacular, however, puts rather too vague a point on it. It was the *vulgar* tongue, in every sense of the word. It was the spoken tongue; those who were educated and inclined to read would most likely have done so in Latin, Greek, or one of the continental languages. Thomas Harding, one of the most vehement opponents of an English translation of the Bible, lamented English for being “vulgare and barbarous” (Jewel, *A Replie unto M. Hardinges Answere*, qtd in Jones, *The Triumph of the English Language*, 57). John Standish, another opponent, likened the translation of Scriptures to giving pearls to swine (Jones 53). Any publication in English was a publication directed specifically at those echelons of the society who had not the resources to learn any other less barbarous tongue. However, even such a translation would not reach the entire desired audience. During the Prayer Book Rebellion of 1549 the rebelling peasants presented a series of demands to be given to the King, one of which charged him with returning the Bible and the worship service to Latin:

We will not receive the new service because it is but like a Christmas game, but we will have our own service of matins, mass and evensong, and the procession in Latin not in English as it was before. And so we Cornishmen (whereof certain of us understand no English) utterly refuse this new English. (Item 8, *Prayer Book Rebellion Demands*, qtd in Brennan 30)

English was *one* of the vernacular languages and would not have evoked any sentiments of pride or country in those to whom it did not pertain.

However, one could also argue that English might have been used precisely for this reason. Consolidation of national identity implies an attempt to unite, and it is rather difficult to unite a people under four languages, each identified with particular

regions or localities. The other three languages of the realm – Welsh, Cornish, and Breton – were each strongly identified with three of the most dissident regions in the realm. Wales had been serially invaded from England by the Normans, beginning in the eleventh century under William the Conqueror, and culminating in the submission of the Welsh royalty to the English monarchy under the rule of King Henry III. Those who lived in Cornwall, in the southwest of the isle, and the speakers of Breton, the remnants of one of the oldest tribes in the British Isles, shared a similar history of war and invasion, as well as a similar bitter view of the English monarchy. A nationalizing project that honored the claims of each region would quickly run into difficulty; each language having received more or less equal status, local and regional identity could easily usurp the centralized, national identity. By selecting English as the language in which the most important texts, including the Bible, would be published, one might argue that the Crown was establishing a uniquely English identity, superior to regional loyalties, for an English people under an English King. Phillip Spencer and Howard Wollman make a hard case for the link between the triumph of the nation and the triumph of such a vulgar language:

I will argue that ethnicities naturally turn into nations or integral elements within nations at the point when their specific vernacular moves from an oral to written usage to the extent that it is being regularly employed for the production of a literature, and particularly for the translation of the Bible. (37-38)

The publication of the English-language Bible would then directly implicate the creation of the English national identity.

This implies that the King and his most influential supporters would likely have close ties to English, either as a language or as a sort of nebulous identity. But Brennan argues that, with English having been seen as inherently vulgar by the elite, they would have used it primarily as a form of control of the lower classes (20). One can infer that it is unlikely that, having such a poor view of English and being so very unlikely to associate themselves with it, they would have attempted to create any sort of national identity based upon it. Moreover, as Brennan cites from *The Primer set forth by his Kinges majestie and his clergy . . . and none other to be used throughout his dominions*, when the English translation finally came out after many long

disputes, it came for “our people and subjects which have no understanding of the Latin tongue and yet have knowledge of reading’ and youth ‘until they be competent in understanding to perceive it in Latin” (30). There is no nationalist talk here. English appears as a half-way point: helpful for those who knew no Latin but, in the end, inferior. Not having been assumed by the elite, it would not have been their choice for an axis around which to stitch a nation. Such a statement lends much more support to Brennan’s claim that English would be used as a form of social control.

The Judgment of Archbishop Cranmer concerning the peoples right to, and discreet use of the H. Scriptures (referred to as McClintock 207), a 1689 pamphlet printing of Archbishop Cranmer’s introduction to the Great Bible kept in the Drew Methodist archives, comes with its own introduction (a preface to the preface, as it were), written in 1688, which, though produced within a strikingly different religio-political environment, sheds some light on the success of English as a tool of social control. At the time of the re-publication, the Bible primarily used in England was no longer the Great Bible but rather its later descendant, the King James translation. The country had passed through just over a century of overtly Protestant rule; what in the 1540s was reform had, by the 1680s, become the norm. It was within this reversed religio-political ethos that King James II, eager to rekindle support for his chosen form of worship, had initiated the construction of a Jesuit chapel on Lime Street, London, under the pretense of providing the representative of the Elector Palatine with an ambassadorial chapel in which to attend Catholic mass (Miller 246). The chapel met heavy opposition, including that of the publisher of *The Judgment*, who uses the preface to rail against the Jesuits for coming to preach against “Our Bible” (printed in Gothic script): “it was the Jesuites Province to cast all the Dirt they could upon our Bible, and to run down our Translation” (McClintock 207 folios 5, 6, and 7). Eight months later, on 30 September 1688, Father Petre (a Jesuit preacher mentioned in the text, folio 5) was dragged from the pulpit. The pulpit and altar were both destroyed the following Sunday, and Father Petre fled the area (Locke 134).

If the compilation and dissemination of the Great Bible is to be accepted as a successful form of social control, aimed primarily at the instillation of true doctrine within the public, there must be

some evidence that members of the populace did indeed not only adopt the English translation but assumed it fully. In this second preface such evidence is to be found. It is highly telling that the author repeatedly refers to the current English Bible not as “the King James translation” but rather as “Our Bible,” often highlighted in Gothic Script. This strident defense was given not only to the English Bible, but to the faith as a whole. The author ends by remarking that

all that Fury and Vehemence in the *Lime-street Chappel*, was much more intended against the Holy Bible it self, than against our Translation of it. Their Church has taught 'em a new Faith, and therefore since the *Old Bible* has it not in it, they are for throwing it aside. (McClintock 207 folio 7)

The indoctrination of the people in the true (reformed) faith was so successful, at least in this particular case, that the author implicitly identifies it as the old faith, the true faith that directly proceeds from the Bible. And if there is need for a demonstration of this as a shared sentiment, look no further than the destruction of the Lime Street Chapel and the numerous protests which preceded it. It is difficult to extrapolate from this text the exact intentions of the reformers some one hundred and forty years earlier, but it is a small logical leap to connect their actions with this full adoption both of the English Bible and a reformed doctrine. For an investigation of the intents of the reformers, one must turn to the text of Cranmer’s work itself.

Cranmer’s introduction to the Great Bible is slightly problematic given that it was written under the reign of King Henry VIII, who was far from an open reformer. In it, Cranmer shies away from anything so radical as an affirmation of justification by faith, a central tenet of the works of most continental reformers, including Luther and Calvin, but in some of his later works, including his *Sermon of the Salvation of Mankind* (1547), he elaborates just such a doctrine (Janz 350-357). The Sermon was published during the reign of Edward IV, Henry’s son, under whom the Reformation gained momentum and took on a much more intense air. It is unclear whether Cranmer’s thought simply changed over the years or the Edwardian era writings are expressions of true beliefs held but repressed under Henry. It remains ambiguous how much of the introduction was directly

influenced by political concerns. Moreover, such deliberation holds little interest with regard to the debate currently in question.

Cranmer's introduction begins with the declaration that it is directed to "two sundrie sorts of people," the first of which refuse to read or hear read the scripture "in the vulgare tongue; much worse they that let also or discourage the other from the reading or hearing thereof," and the second of which are too zealous in their reading and "by their inordinate reading, indiscrete speaking, contentious disputing, or otherwise by their licentious liuing, slander and hinder the Worde of God most of all other" (McClintock 207 1). Here Cranmer clearly presents his intent to lay out a middle path, according to which the Bible is to be read in the vulgar tongue, but disputation is to be avoided. Such a project is a delicate task, having to delineate a fragile space between the two extremes in which correct reading and practice are to be found.

There is a certain moralistic strain evident in the introduction. Cranmer appears to have been concerned not only with the instillation of true doctrine, but with assuring that it manifested itself outwardly in true, moral, Christian living. One should note the admonition of those who "by their licentious liuing, slander and hinder the Word of God." Although it certainly takes a very different form, this moralistic tone is reminiscent of Calvin's extreme efforts, both in his writing and in the structuring of the governance of Geneva, to improve the lives of his fellow believers. For Cranmer, the concern with licentious living is wrapped up in a deep concern about possible disputation, and he admonishes the people to forbear and not dispute that they might dedicate themselves to worthier things:

And wherein is our communication? Not in the commendation of vertuous and good deedes, of hospitalitie, of loue betweene Christian brother and brother, of loue betweene man and wife, of virginitie and chastitie, and of almes towarde the poore: not in Psalmes and godly songs, not in lamenting for our sinnes, not in repressing the affections of the body, not in prayers to God. We talke of Scripture, but in the meane time we subdue not our flesh by fasting, watching and weeping, we make not this life a meditation of death, we do not striue to be lords over our appetites and affections, wee goe not about to pull downe our proude and high mindes, to abate

our fumes and rancorous stomackes, to restraine our lust and bodily delectations, our vndiscrete sorowes, our lasciuious mirth, our inordinate looking, our insatiable hearing of vanities, our speaking without measure, our inconuenient thoughts; and briefly, to reforme our life and maners: but all our holinesse consisteth in talking. (McClintock 207 14)

When people come to disputation they forget themselves and their Christian duty to live a good life. This passage is most clearly addressed to the second sort of people (“licentious liuing”) in an attempt to rein them in and return their attention to their lives. The meticulous list of self-controlling acts (restraining of lust, pulling down of pride, moderating appetite) that disputation could usurp demonstrates a persistent concern on Cranmer’s part for the moral well-being of the populace. Such self-controlling acts would only be possible if the populace had so imbibed the true belief that they would curb their actions accordingly, à la Foucault. Taken from a more secular standpoint, it could also demonstrate a preoccupation with public unrest and disruption, not only in the form of polemical argument, but in the form of wild appetites permitted by neglected self-control.

This worry for disputation was characteristic of the English reform in general. The reaction to the English translation, as to the sweeping reform, was heavily mixed but markedly polemical. Barnes and Latimer continued their radical reformist preaching, while those such as Mr. Lovell of Sturminster Newton in Dorset railed against “these abominable heretics that readeth the New Testament in English . . . as a scabbed sheep infesteth the whole flock, so these abominable heretics infect the whole company with their new learning” (Elton 24). Barnes and Latimer, along with other radical reformers, lived under the protection of Thomas Cromwell, and the conservative polemicists were so many and so enraged that even the enforcement of various decrees against divisive preaching seemed to have little effect. Nonetheless, such bans continued to be enacted. In Easter week of 1534 a ban was issued, by agreement between Cranmer and several conservative bishops, on polemical preaching. Preachers were called to denounce the papacy and uphold royal supremacy but were admonished to keep away from such topics as purgatory, praying to saints, pilgrimages, and justification by faith (Duffy 381). In January 1536 a letter was circulated by the King, again

addressing the problem of radical reformist preaching (Duffy 389). There was a marked concern not only for the “superstitious” abuse of the traditional practices, but also the zealous abuse of the new form of Christianity produced by “inordinate reading” and “undiscrete speaking” (1).

Cranmer specifically advises those who read the Great Bible to take great care in their reading not to go further than “euery mans owne capacity will serve him, and againe no further then the weaknesse or intelligence of the other audience may beare” (McClintock 207 12). This last is particularly directed toward members of the clergy: be careful of what is spoken and how it is said. The clergy may have read the Bible in Latin and studied the great works of the Church doctors and gained illumination as to various issues of interpretation, but Cranmer warns them to be aware of the audience and their capacity to reason. The “signes and miracles” and the “Histories of the doings of Christ and his Apostles” are all so plain that anyone might understand them (7), yet at the same time there “is nothing so good in this worlde, but it may be abused (Rom 8)” (10). Cranmer recommends that, if a believer reads and does not understand, he read it again and again, and if he *still* does not understand, he should seek the counsel of someone more learned and God, seeing his diligence, will “open vnto thee that which was locked from thee” (7). But one should not stray too far beyond one’s capacity in attempting to understand: “I forbid not to reade, but I forbid to reason. Neither forbid I to reason so farre as is good and godly: but I allow not that is done out of season, and out of measure and good order” (13). Again, one can see here a marked preoccupation for polemic and, moreover, a very clear controlling intention.

All of this makes evident that Cranmer was very nervous about putting the Bible into English, and so directly into the hands and, more importantly, the mouths of the lower-class laity. The true and correct indoctrination of the people seemed to demand on the one hand the translation of the Bible (and the general shift toward the usage of English in mass, prayer books, etc.), and on the other the vigilance of the very same to make sure that the temptation to take interpretation into their own hands did not prove too great.

However evident the anxiety for correct instruction as regards reading the Bible (true belief), there is also present a

much more subtle and subdued nationalistic strain. Cranmer clearly states that his “Kings highnesse [is] Supreme head next vnder Christ of this church of England” (9), adding that he (the King),

hath approued with his royall assent the setting forth hereof [of the Great Bible], which onley to all true and obedient Subjects ought to be a sufficient reason for the allowance of the same, without further delay, reclamation or resistance, although there were no Preface, or other reason herein expressed. (McClintock 207 10)

Though not perhaps what one would typically recognize as nationalist rhetoric, Cranmer leans heavily on the weight of the central temporal – and now spiritual – authority, accentuating the duty of the subjects to obey their sovereign without question. There are, nonetheless, no mentions of the nation or the English people as more than subjects.

Cranmer does, however, evoke English identity in another very subtle way when he justifies the translation by placing it within a long tradition of vulgar translations:

For it is not much aboute one hundreth yeere agoe, since Scripture hath not bene accustomed to be read in the vulgare tongue within this Realm, & many hundreth yeers before that, it was translated & read in the Saxons tongue, which at that time was our mother tongue, whereof there remain yet diuers copies founde lately in olde Abbeys, of such antique manner of writing & speaking, that fewe men now be able to read and vnderstande them. And when this language waxed old and out of common vsage, because folke shoulde not lacke the fruite of reading, it was againe translated into the newer language, whereof yet also many copies remaine, and be daily founde. (McClintock 207 2-3)

A tradition of *Saxon* vulgar translations, that is. Though one might – and should – be skeptical of Cranmer’s claim that copies of these translations were being “daily founde,” it remains very informative that Cranmer saw fit to include such a claim. He was not using the argument employed by others that, as Latin, Greek, and Hebrew had once been the vulgar tongues in their own nations, it made no sense to withhold from translating the Bible into another vulgar tongue. He was instead elaborating the history of Saxons – ancestors of the English people – translating

the Bible into Old English. Moreover, given that both the modern English language and the inhabitants of England were descended from the mixing of the Saxons and the invading Normans, to cite the Saxon translations is to shy away from the Latinate French continental heritage and to establish a strong line between contemporary Britons and the older inhabitants of the isles. Though again he makes no direct reference to the English language, he grounds the justification of the translation in the ancient Saxon tradition, creating an identity between the new and old inhabitants of the isles.

The 1689 preface to Cranmer's work also provides an interesting look at the possible success of the instillation of national sentiment. Notice again how consistently the author refers to "Our Bible" – this phrase is several times printed in gothic script to contrast with the script employed in the rest of the pamphlet – and rails against the attempts of the Jesuits to "cast all the Dirt they could upon *our Bible*" (folio 5, italics added). He adds that he intends to show that the English translation should not be objected to, least of all by the Jesuits, "who have undertaken to do it so liberally in *our own Nation*" (folio 5, italics added). This identification between the author and a singular nation, with a singular English translation continues throughout the length of the prologue. The plural first person is maintained almost exclusively and is set up against the "them" of the Jesuits, the "papists," and the Roman Catholic Church. The author very clearly sees himself as a member of a certain nation, entirely separate from and antagonistic to the Papacy, to which belongs a certain translation. Whether the result of Cranmer's work with King Henry, the strongly Protestant regime under Queen Elizabeth I, or some combination of the two and many other factors, by 1689 there had been not only constructed, but also solidified and firmly embedded in at least several members of the nation (remember the protests and the attack upon the Lime Street Chapel) a sense of national cohesion and identity under the English language.

Nevertheless, Cranmer's introduction provides much more fodder for Brennan's argument. Folio after folio is dedicated to sketching out the very fine balance in which true doctrine consists, navigating between those "that be too slow, and need the spur" and those that "seem too quick, and need more of the bridle" (McClintock 207 1). Cranmer was concerned, just as Martin Luther had been in his 1522 preface to the New Testament (Janz

113-117), with making sure that the Bible was read correctly and that the correct conclusions were drawn from it. This concern and its judicious implementation is the very definition of social control.

However, it does not do to dismiss the opposing argument entirely. It has already been asserted that the English Reformation was inherently *both* political and devotional. Many theological treatises had political ramifications and vice versa: Luther's address *To the Christian Nobility of the German Nation*, which is essentially an attack on the Papacy and certain practices of the church, appeals to temporal powers (the Christian nobility) in a debate that, while founded in theology, is shot through with political implications (Janz 98-105). Though perhaps not explicitly articulated by the reformers, or even fully conceived in their minds, it is entirely possible that the English translation of the Bible was one small part of the great, inexorable shift toward a strong centralized nation with a strong national identity. There is certainly evidence, however subtle, in Cranmer's introduction to support such a claim. Moreover, one might ask Brennan, "If the Reformers were so desperate to make the Bible accessible to the laity, why did they not provide translations in all four colloquial tongues?"

Even using such an explanatory text as Cranmer's preface to the Great Bible, it remains a delicate and problematic matter to separate the presence of nationalizing sentiment from attempts at indoctrination. It is clear, however, given the abundance of Cranmer's admonishments to read carefully and justly and not to stretch one's capacity too far, that at the very least Cranmer was actively conscious of and actively participating in instating English as a manner of control of sincere belief. Though it is less evident that he was so active in the promotion of an English national identity grounded in the English language, the very fact that he promoted social control through English *as an appointee of the King* lends a certain credibility to this argument. In such a position as Cranmer occupied, with the authority with which he was endowed, any action of his to control and shape the society was, at least in some way, a manner of shaping the identity of the nation. Though Brennan's work is an invaluable addition to the historiography of English Reform – and it remains manifest that more attention should be paid to the role English played as an instrument of devotional control – her notion of English as a tool of social control does not negate the validity of viewing English as

establishing national identity. Cranmer's introduction is more useful as evidence for the former than for the latter, but it does not draw a clear line between the two. English was the language of social control, *both* with regard to the devotional sphere and with regard to the construction of a national identity.

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MTLS IN *VIBRIO CHOLERAE* REGULATES MANNITOL TRANSPORTER PROTEIN PRODUCTION THROUGH THE *MTLA* 5' UTR

RONAK MISTRY (CLA 2013)

Year after year, the cholera disease continues to affect people living in undeveloped regions around the world. The World Health Organization reports that approximately 3 to 5 million people worldwide are affected by cholera annually (Ali et al., 2012). If left untreated, the disease can be fatal. Affected individuals can die from dehydration and shock as a result of excessive water loss through diarrhea and vomiting. In fact, each year, an estimated 100,000 to 120,000 people die because of cholera infection (Ali et al., 2012). The causative agent for the cholera disease is *Vibrio cholerae*, a gram-negative, rod-shaped bacterium typically found in freshwater environments such as streams and estuaries (Spagnuolo, DiRita, & Kirschner, 2011). The bacterium can often be found associated with small organisms such as zooplankton, where it can use the chitin in the exoskeleton of zooplankton as an energy source (Reidl & Klose, 2002). However, upon ingestion of *V. cholerae*-contaminated food or water, the cells colonize in the human small intestine. Once optimal cell density is achieved, the bacteria begin to secrete cholera toxin (CT) (Dick, Guillerm, Moussy, & Chaignat, 2012; Reidl & Klose, 2002). This protein is the cause of the symptoms of the cholera disease. In areas where there is poor sanitation, the human waste containing the *V. cholerae* can end up in the aquatic reservoirs allowing for the continuation of the *V. cholerae* lifecycle (Figure 1) (Nelson et al, 2009). The ability for these bacteria to

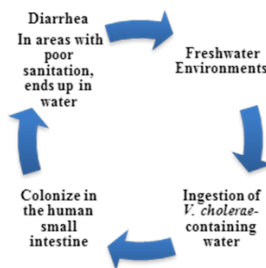


FIGURE 1: *Vibrio cholerae* lifecycle. *V. cholerae* is able to thrive in aquatic environments and the human small intestine.

adapt to changes in their environment has been of great interest to scientists and health professionals, as better characterization of gene expression in bacteria can aid in the production of more efficacious therapeutic agents.

Within the past decade, small RNA (sRNA)-mediated regulation has been widely studied in a range of bacterial species. sRNAs are small functional RNA molecules that are transcribed, but often not translated (Miller and Tanner, 2008). sRNAs are known to function in three ways: (i) as part of RNA-protein complexes; (ii) mimicking the structure of other nucleic acids; or (iii) base-pairing with other RNAs and thus altering their expression (Storz, Opdyke, & Zhang, 2004). Interactions between sRNAs and other nucleic acids and proteins in the cell are under considerable research (Storz, Opdyke, & Zhang, 2004). For example, it has been determined that in *Escherichia coli*, DsrA sRNA is expressed when temperature drops occur and is involved in positively regulating the production of the RpoS transcription factor, which enables the bacteria to survive in cold living conditions (McCullen et al., 2010). Specifically, when *E. coli* are subjected to 20 - 25 °C growing conditions, an upregulation in DsrA is observed (McCullen et al., 2010). DsrA binds to the 5' untranslated region (UTR) of *rpoS* mRNA, which results in a conformational change in the secondary structure of *rpoS* mRNA and exposes the ribosome binding site thereby promoting RpoS protein production (McCullen et al., 2010). This is an example of an sRNA that is able to promote gene expression.

To date, the majority of sRNAs discovered have been in *E. coli* (Song, et al., 2008). However, more recent studies have highlighted the instrumental role of sRNAs in *V. cholerae* in an array of cell regulation pathways as well. For instance, sRNAs have been discovered which are involved in mediating bacterial communication, a process known as quorum sensing (Rutherford & Bassler, 2012). Thus, therapeutics that could be designed to

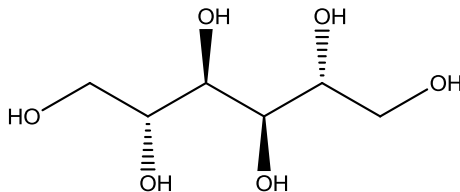


FIGURE 2: Structure of mannitol sugar. Mannitol is a naturally occurring six-carbon sugar alcohol that can be used by *V. cholerae* as an energy source.

impair such functions may be effective in targeting the cholera infection. But given the diverse mechanisms by which sRNAs have been shown to carry out their regulation in other species, it is important to continue to elucidate and characterize how sRNAs function in *V. cholerae* before targeted drug discoveries can occur.

In this paper, we investigated the mechanism by which the MtlS sRNA negatively regulates expression of the mannitol operon in *V. cholerae*. Mannitol is a naturally occurring six-carbon sugar alcohol that can be used by *V. cholerae* as an energy source (**Figure 2**) (Kumar et al., 2011). The genes enabling *V. cholerae* to take mannitol into the cell and metabolize it are encoded within the mannitol operon. An operon is a contiguous set of genes whose products have related functions in the cell. As shown in **Figure 3**, the mannitol operon is comprised of three major genes: *mtlA*, *mtlD*, and *mtlR*. *mtlA* encodes the mannitol specific transporter protein, a transmembrane protein involved in physically transporting mannitol from the environment into the cell (Kumar et al., 2011). *mtlD* is mannitol-1-phosphate dehydrogenase, the enzyme responsible for preliminary metabolism of mannitol (Kumar et al., 2011). *mtlR* is believed to be a regulator of the operon (Kumar et al., 2011); however, research is currently ongoing to further support this hypothesis. Transcribed antisense to *mtlA* is *mtlS*, the gene encoding the MtlS sRNA (Mustachio et al., 2012). The *mtlA* mRNA shares seventy nucleotides of complementarity with *mtlS*, suggesting that the sRNA may be able to bind the mRNA, thereby regulating mannitol transporter expression (Liu et al., 2009; Mustachio et al., 2012).

Prior research by our group indicates that in the presence of mannitol in the environment, *mtlA* is transcribed into *mtlA* mRNA, which is translated to MtlA protein (**Figure 4**) (Mustachio et al., 2012). In the absence of mannitol, however, *mtlA* is

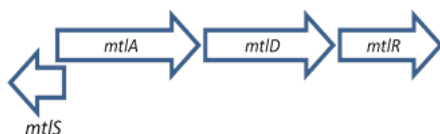


FIGURE 3: Mannitol operon in *Vibrio cholerae*. The mannitol operon is comprised of three genes. *mtlA* is a mannitol specific transporter protein. *mtlD* is a mannitol-1-phosphate dehydrogenase. *mtlR* is believed to be a regulator of the operon. Transcribed antisense to *mtlA* is *mtlS*, the gene encoding MtlS sRNA, which we hypothesize is involved in the regulation of MtlA protein expression.

transcribed to *mtlA* mRNA, but not translated into protein (Mustachio et al., 2012). Conversely, *mtlS* is highly expressed in the presence of sugars other than mannitol. This inverse relationship further highlights the potential regulatory nature of MtlS. Specifically, MtlS may be involved in repressing the production of MtlA protein in the absence of mannitol in the environment. We hypothesize that MtlS base pairs with *mtlA* mRNA in the 5' UTR, occluding the ribosomal binding site, thus inhibiting MtlA protein production.

To address this hypothesis, we used a technique adapted from the Vogel laboratory that uses the reporter gene *gfp*, encoding green fluorescent protein (Urban & Vogel, 2007). An *mtlA* 5' UTR::*gfp* fusion plasmid (pmtlAgfp) was constructed and transformed into *E. coli*. The *mtlA-gfp* fusion was expressed from a constitutively active promoter, but green fluorescent protein (GFP) should only be expressed if the ribosome binding site in the *mtlA* 5' UTR is available for translation initiation. MtlS, which is not native to *E. coli*, was introduced to cells harboring pmtlAgfp through a second plasmid that expresses the sRNA through an inducible promoter. The use of GFP as a reporter protein allows for protein production to be assayed two ways. Western blotting analysis through the use of anti-GFP antibodies can allow for detection and quantification of GFP protein. Additionally, GFP production allows for the utilization of quantitative fluorescence assays. By conducting our studies in *E. coli*, we are also trying to understand if the *mtlA* mRNA-MtlS interaction is *sufficient* for the

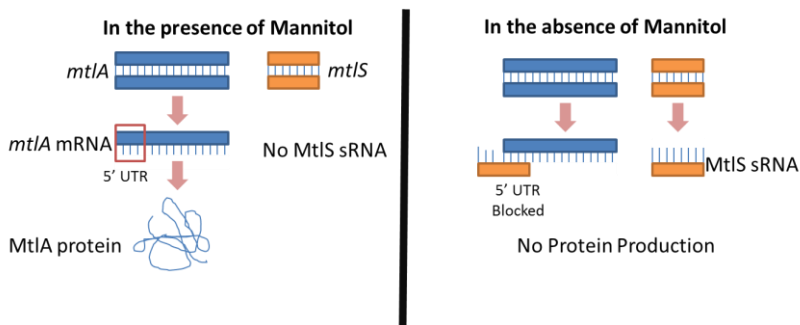


FIGURE 4: An inverse relationship exists between MtlS sRNA and MtlA protein production. Schematic representation of cellular events. In the presence of mannitol, *mtlA* mRNA is transcribed and MtlA protein is produced. No MtlS sRNA is transcribed. In the absence of mannitol, *mtlA* mRNA is transcribed but no MtlA protein is produced. However, MtlS sRNA is transcribed.

proposed regulatory mechanism to be carried out. If our hypothesis is correct, little or no GFP should be synthesized when MtlS is present (**Figure 5**). This observation would also support a model in which MtlS binds to the 5' UTR region of *mtlA* mRNA and represses protein production, suggesting that this interaction is sufficient for protein expression.

Results

***pMtlS* induction results in reduction of GFP protein.**

Our previous results provide sufficient data to suggest that an inverse relationship exists between MtlS sRNA and MtlA protein production (Mustachio et al., 2012). In order to determine whether or not the *mtlA* 5' UTR interaction with the MtlS sRNA is sufficient for inhibition of protein synthesis, a plasmid containing the *V. cholerae mtlS* gene under an arabinose-inducible promoter (pMtlS), as well as a plasmid containing the constitutively expressed *mtlA* 5' UTR::*gfp* fusion (pmtlAgfp), were both

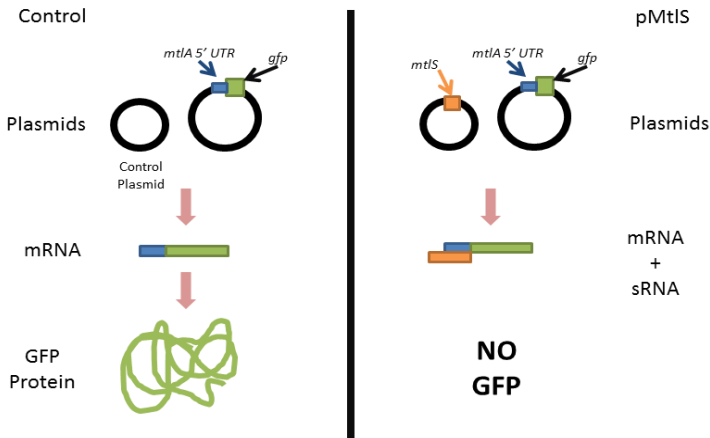


FIGURE 5: Experimental design and expected outcome. We hypothesize that the MtlS sRNA binds to the *mtlA* 5' UTR, thus occluding the ribosomal binding site and inhibiting protein production. To investigate this interaction, *E. coli* transformed with a plasmid containing a *mtlA* 5' UTR::*gfp* (pmtlAgfp) fusion under a constitutively expressed promoter. For the control set up, cells containing pmtlAgfp were co-transformed with an empty vector. In the experimental, pmtlAgfp-containing cells were co-transformed with a plasmid containing the *V. cholerae mtlS* gene (pMtlS) under an inducible promoter. Based on our current hypothesis stating that the MtlS sRNA base pairs with the 5' UTR region of *mtlA* mRNA, occluding a ribosomal binding site, we expect that in the experimental setup, little or no GFP production should result, because *gfp* is under the promoter element of the upstream *mtlA* gene.

transformed into *E. coli*. The use of an inducible promoter allowed us to control when *mtlS* was expressed instead of it, too, being constitutively expressed. The *E. coli* strain harboring *pmtlAgfp* and *pMtlS*, as well as controls, were grown to OD₆₀₀ ~0.4 in the presence or absence of inducer. Total cell lysate was analyzed using Western blotting analysis to quantitatively assess GFP protein production.

As we show in **Figure 6**, we observed a 50% decrease in GFP protein upon induction of *MtlS* expression compared to cells grown in the absence of inducer as shown in lanes denoted “*pMtlS* ± I.” To reiterate, our hypothesis states that *MtlS* sRNA interacts with the *mtlA* 5' UTR, thus occluding a ribosomal binding site, resulting in inhibition of *MtlA* protein production. Although a complete inhibition of GFP protein production did not occur, the data suggest that the presence of the sRNA does appear to result

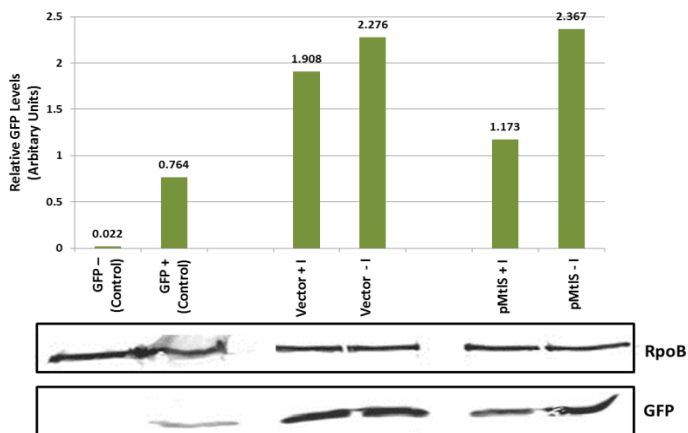


FIGURE 6: *MtlS* sRNA induction reduces *MtlA* protein levels. Strains of *E. coli* containing no GFP-encoding vector (lane 1), a GFP-encoding vector (lane 2), constitutively expressed *mtlA* 5' UTR:*gfp* and an empty-vector control (lane 4 and 5), and constitutively expressed *mtlA* 5' UTR:*gfp* and an arabinose- inducible plasmid containing *MtlS* (lane 7 and 8) were grown in LB media to mid-exponential phase. Those lanes indicating the addition of inducer (lanes 4 and 7) contained arabinose in the media. Once the mid-exponential phase was reached, cells were collected and total cell lysate was subjected to Western blotting analysis. Samples were probed with anti-RpoB (loading control) and anti-GFP antibodies. Data provided in bar graphs correspond to the labels indicated below. The relative GFP levels reported have been normalized to RpoB. Cells grown to OD₆₀₀ ~0.4 prior to analysis.

Note: Lanes 3 and 6 are intentionally blank.

in decreased GFP expression. In the strain containing the empty vector (denoted “Vector” in **Figure 6**), we expected to see unchanged levels of GFP expressions both in the presence and absence of inducer. We observed a slight decrease in GFP expression upon addition of inducer. We are uncertain why this was occurring because the vector control does not encode MtlS. The negative control does not contain a plasmid conferring GFP expression (GFP-), and accordingly, we did not observe fluorescence. The positive control (GFP+) contains the same plasmid backbone as the pmtlAgfp plasmid, except the 5’ UTR is the natural 5’ UTR of *gfp* not *mtlA*. The increase in GFP expression in the strains containing pmtlAgfp compared to the positive control suggests that the 5’ UTR of *mtlA* has an impact on GFP expression levels.

This experiment was conducted several more times and similar trends were observed, as indicated in **Figure 7**, which presents the data as the ratio of the amount of GFP in the presence of inducer to the amount of GFP in the absence of inducer. The data suggest that, in the presence of inducer in the strains harboring pMtlS, there is consistently an approximately 45% reduction in GFP levels.

As we noted above, using GFP allows us to also use

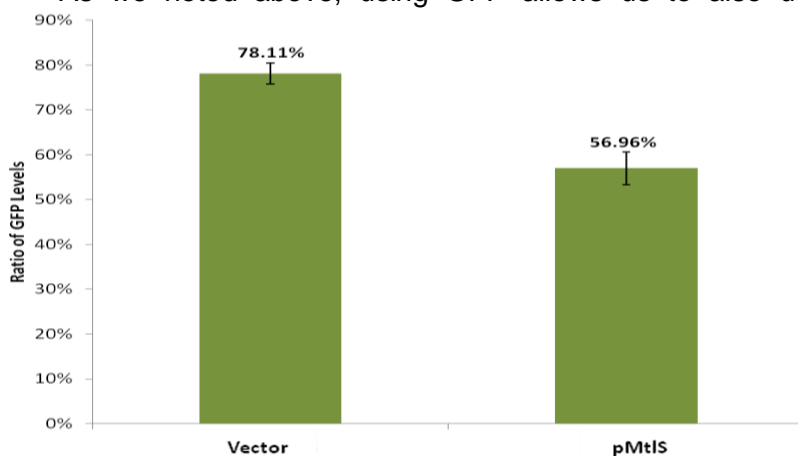


FIGURE 7: Ratio of GFP protein (GFP in presence of inducer: absence of Inducer) when cells grown to OD₆₀₀ ~0.4. This data is a compilation of several densitometry analyses of Western blot membranes. The results suggest that there is a 43% decrease in GFP expression in the presence of sRNA. The vector, once again, has a decrease in GFP levels upon induction of inducer, as seen in **Figure 2**.

fluorescence assays to measure the amount of GFP that is produced in the cells. *E. coli* strain harboring pmtlAgfp and pMtlS as well as controls were grown to OD₆₀₀ ~0.4 in the presence or absence of inducer. Fluorescence cell assay was conducted with live cell cultures. As shown in **Figure 8**, a reduction in GFP only occurs in the presence of inducer in pMtlS strains, a trend similar to that observed in our Western blotting assays. Additionally, a minor reduction in GFP fluorescence was observed in the presence of inducer in the cells containing the vector.

We were curious to see whether or not allowing the cells to grow to a higher OD₆₀₀ would impact GFP fluorescence. As an additional control, we added glucose to our culture, a known inhibitor of the P_{BAD} promoter responsible for the expression of MtlS from the pMtlS plasmid. When growing the cells to OD₆₀₀ of ~1, we observed a three-fold decrease in GFP levels upon MtlS induction (**Figure 9**). The error bars for the three vector controls suggest that there is no significant difference in GFP expression. Upon adding glucose, we observe a significant decrease in GFP expression in the “Vector+Glu” and in the “pMtlS+Glu” samples.

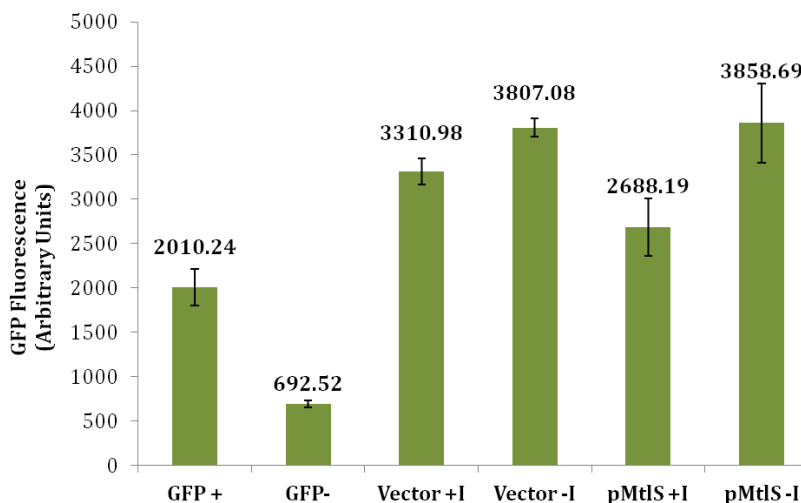


FIGURE 8: GFP fluorescence data suggests similar trends to those observed in Western blots when cells grown to OD₆₀₀ ~0.4. A reduction in GFP protein fluorescence is observed upon induction of pMtlS. A reduction in GFP protein was also observed upon addition of inducer in the vector control. Fluorescence was also present in the negative control; however, we attribute this to the natural fluorescence of the cells as well as residual LB media, which we observed exhibited high background fluorescence.

This result was unexpected. Based on prior observation that addition of arabinose to the vector control results in decreased GFP expression, it appears that GFP expression decreases upon addition of another carbon source into the culture. This is a point of further investigation in future studies.

There was also a significant decrease in GFP fluorescence in cells harboring pMtIS and treated with inducer (“pMtIS+I”) as compared to cells in which no inducer was added (“pMtIS-I”). The reason for the increase in the knockdown of GFP in cells grown to $OD_{600} \sim 1$ as compared to cells grown to $OD_{600} \sim 0.4$ is not obvious. One possibility is that the increase in time provides an increase in the concentrations of MtIS accumulating in the cell. A second reason may be that increased time provides ample opportunity for MtIS-*mtlA::gfp* mRNA interaction.

Discussion

In our current project, we provide data suggesting that MtIS sRNA regulates MtlA protein production through the *mtlA* mRNA 5' UTR, which may be occluding a ribosomal binding site, thereby inhibiting protein production. Specifically, we wanted to determine if the interaction between MtIS and *mtlA* 5' UTR is sufficient for repressing protein production. Thus our experiments were conducted using plasmid transformed into *E. coli* in order to eliminate other *Vibrio*-specific components in the MtlA protein production process. One plasmid constructed was *mtlA* 5' UTR::*gfp* fusion plasmid (pmtlAgfp), which was under the control of a constitutively expressed promoter. The second plasmid contained *mtlS* under an inducible promoter (pMtIS). We report that upon induction of the sRNA there is a decrease in GFP protein production, suggested by both Western blotting analysis and GFP fluorescence assays, thus supporting our hypothesis.

The most dramatic difference in reduction in GFP protein expression was apparent when cells were grown to $OD_{600} \sim 1.0$ (**Figure 9**), where we observed a three-fold decrease in GFP fluorescence as compared to the same strain in the absence of sRNA induction. Earlier experiments indicated that a reduction did take place, but when cells were grown to $OD_{600} \sim 0.4$, we observed approximately 30-40% reduction in GFP. We attribute this difference to the stability of the GFP protein, which is reported to have a half-life of approximately 40 minutes (Andersen et al., 1998). By extending the time over which the cells are grown, we

believe that more GFP protein is able to degrade in the cell, while the sRNA inhibits new GFP protein translation. Additionally, preliminary results not shown in this paper suggest that when pMtIS is induced *after* cells have been grown to $OD_{600} \sim 0.4$, and for 60 minutes thereafter, GFP protein levels appear almost unchanged. This further supports the hypothesis that our GFP protein is very stable; thus, by extending the time for cell growth and allowing the sRNA to be expressed throughout this time, we believe that the GFP protein already produced may be degrading, while further GFP production may be inhibited.

Additionally, in **Figure 9**, we present data in which we added glucose to both the empty vector control and the experimental strains, which resulted in a decrease in GFP expression in both cases. Glucose is a known repressor of the P_{BAD} promoter, which drives MtIS expression in the pMtIS plasmid (Guzman et al., 1995). It appears that the addition of a second

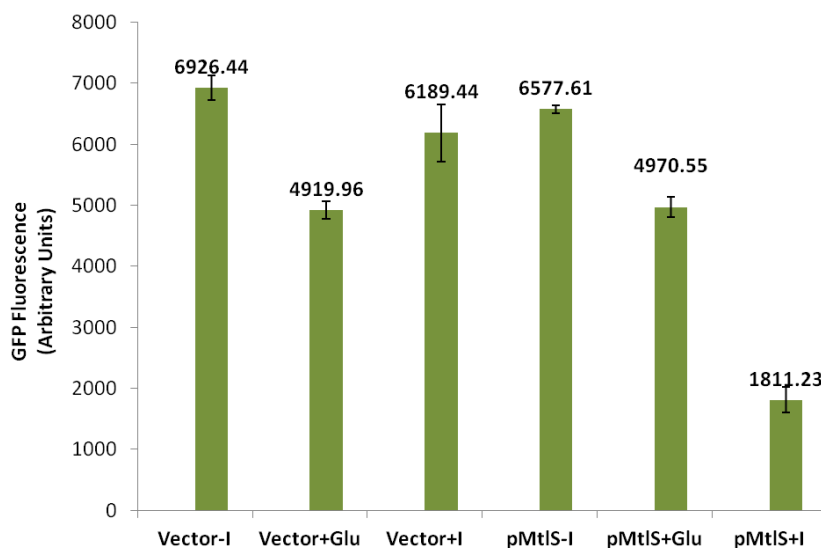


FIGURE 9: GFP fluorescence is reduced three-fold in presence of sRNA when cells grown to $OD_{600} \sim 1$. Compared to pMtIS in absence of inducer, pMtIS in presence of inducer has a three-fold decrease in fluorescence. Additionally, the lanes in which we added glucose, a repressor of the pMtIS plasmid, indicate that the addition of any carbon source results in an alteration of GFP expression. This finding may explain the decrease in GFP levels observed in aforementioned data, in which GFP levels decreased in the strains to which arabinose was added, but contained only the vector control.

carbon source in the liquid culture affects GFP expression. This trend is also observed in **Figures 6, 7, and 8**. Further follow-up experiments need to be conducted in order to ascertain the true reason for this observation.

Understanding the regulation of the mannitol operon will further add to the ever-expanding knowledge about sRNA regulation and increase our understanding of how sRNAs function in *V. cholerae*. Understanding the many different ways in which sRNA regulation can take place in the cell can provide opportunities for the development of therapeutics, such as small molecules, to thwart these processes, thus resulting in altered gene expression in bacteria and possibly death of the bacterial cells. A thorough understanding of sRNA regulation can also be used to understand regulatory pathways in eukaryotes. In multicellular organisms, microRNAs have been cited as important regulators of cellular function. Thus, knowledge ascertained from sRNA regulation may be able to be applied to microRNA studies as well (Fernández-Hernando et al., 2013).

In the future, we propose several changes to our experimental method. First, we plan on exploring the use of a plasmid in which the *mtlA* 5' UTR::*gfp* fusion is also under the control of an inducible promoter, thus allowing us to control when the GFP is expressed. Secondly, we want to compare GFP expression in the natural environment in which MtlS is produced, instead of by artificial means such as a plasmid through a strain in which pmtlAgfp is transformed into *V. cholerae*. Nonetheless, the results presented here strongly suggest that the interaction between MtlS sRNA and the *mtlA* 5' UTR does appear to result in decreased protein expression, indicating that MtlS regulates the expression of MtlA protein through an interaction with the 5' UTR of *mtlA* mRNA.

Materials and Methods

Bacterial Strains and Plasmids. All strains used in this study are listed in **Table 1**. All *E. coli* strains were DH5 α or TOP10 derivatives containing the respective plasmid as indicated in **Table 1**. Plasmids pJML01 and pJML01_MtlS were transformed into *E. coli* JL87 (TOP10 pXG-*mtlA*5') to produce strains JL106 and JL107, respectively. All strains were grown on LB/agar plates or aerated LB broth supplemented with the appropriate antibiotics. Antibiotics were in the following concentrations: 100 μ g/mL

ampicillin; 10 µg/mL chloramphenicol. When necessary, gene expression was induced by the addition of 0.02% (w/v) arabinose or 0.02% (w/v) glucose.

Western Blotting. Total cell lysates (~10⁷ cells) were mixed with 5x sample buffer (250 mM TRIS-Cl [pH 6.8], 10% sodium dodecyl sulfate [SDS], 50% glycerol, 10% β-mercaptoethanol, 0.5% orange G), heated 10 minutes at 95 °C, and separated on a 10% SDS-PAGE gel. The protein was then transferred to nitrocellulose membrane (Licor) at 4 °C using a wet-transfer apparatus (Bio-Rad) and transfer buffer (0.025M TRIS base, 0.192 M glycine, and 20% methanol). Protein was probed through the use of primary and secondary antibodies. Primary antibody for RpoB (mouse α-RpoB) was used at a dilution of 1:2000; primary antibody for GFP (rabbit α-GFP) was used at a dilution of 1:1000. Secondary IR680-goat α-mouse (RpoB) and IR800-goat α-rabbit (GFP) antibodies were applied at 1:10,000 dilution. IR fluorescence was assayed using an Odyssey Imager (Licor). Densitometry was calculated using Odyssey Application software (Licor). All results were graphed using Microsoft Excel.

GFP Assay. Indicted strains were grown in 2 mL LB broth overnight, back-diluted to a starting OD₆₀₀ ~0.07, and then grown at 37 °C, 250 rpm to the indicated OD₆₀₀ (Biomate 3, Thermo Scientific). The entire culture was pelleted (5000g, 8 min at 4 °C) and resuspended in 2 mL 1X PBS. 200 µL of each sample was transferred to a NUNC 96-well plate and cell fluorescence was

Strain Name	Strain Description	Use in Study
JL13	<i>E. coli</i> DH5a pJML01 (ApR)	Contains empty vector control. Original pBAD24 with addition of +1 site right after <i>Nhe</i> 1 site.
JL14	<i>E. coli</i> DH5a pJML01_MtIS (ApR)	Contains MtIS-encoding plasmid. MtIS gene (<i>Vibrio cholerae</i>) was cloned into pJML01 (JL13).
JL65	<i>E. coli</i> Top10F' pXG-0 (CmR)	Obtained from Jorg Vogel lab [10]. Used as a control: contains no GFP.
JL66	<i>E. coli</i> Top10F' pXG-1 (CmR)	Obtained from Jorg Vogel lab [10]. Used as a control: contains full-length GFP.
JL87	<i>E. coli</i> Top10 pXG-mtIA5' (CmR)	Cloned 5' UTR of <i>mtIA</i> into pXG10. Contains <i>gfp</i> fused with <i>mtIA</i> .
JL106	<i>E. coli</i> Top10 pXG-mtIA5' pJML01 (ApRCmR)	Plasmid from JL13 transformed into JL87. Used as control.
JL107	<i>E. coli</i> Top10 pXG-mtIA5' pJML01_MtIS(ApRCmR)	Plasmid from JL14 transformed into JL87. Used as experimental.

assayed (Excitation: 480 nm; Emission: 560 nm) using a plate reader (Biotek) and software from Gen5. All results were graphed using Microsoft Excel.

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BAUDRILLARD'S HYPERREALITY: AMERICA'S SENSATIONALIZED SPORTS THROUGH A POSTMODERN LENS

JAMES SIRIGOTIS (CLA 2013)

Abstract

This essay explores the postmodern theory of *hyperreality* in order to better understand professional sports as an expression of hyperreality engendered through the contemporary information era's proliferation of images, signs, and simulations that constitute American professional sports. Jean Baudrillard, one of the main postmodern theorists, developed a grand theory of hyperreality that is grounded in a consumer community, whose understanding or perception of mediated events or images becomes severed from the reality of the actual phenomena. While various electronic media increasingly infiltrate our postindustrial society, Baudrillard argues, their presentation is now what people understand as reality. My analysis applies Baudrillard's theory to several dimensions of the professional sports industry to demonstrate this divergence from the profound reality into an idealized hyperreality. I begin by briefly outlining Baudrillard's theoretical orientation, axioms, concepts, and hypotheses that compose his theory of hyperreality. Following this summary of the theory, I elucidate its relevance to understanding professional sports as a multi-billion dollar industry that consumes immeasurable amounts of people's time and resources. Fundamental to the production of the hyperreal, simulations are growing as the primary form of information communication, specifically regarding professional sports. The three dimensions of sports that I demonstrate are becoming increasingly simulated are the following: the broadcasting of sports by the media, the athletes themselves, and the actual environments in which the sports are played. Through media and other new technologies, professional sports have slipped into a realm of manipulation and fascination, where simulations and hyperreal signs effortlessly float from screen to screen, mind to mind, arousing and circulating mediascapes and metanarratives as shared cultural consciousness. These narratives manufacture and reproduce hidden hegemonic ideologies, maintaining the status quo and a sedated mass society, living vicariously through hyperreal simulations.

Introduction

Baudrillard's theory has a postmodern orientation, which makes several assumptions about advanced capitalist societies, constructing the foundation of his work on hyperreality. In his primary work on consumption, *The Consumer Society* (1998), Baudrillard contends that production or capital controls and manipulates consumption. Secondly, Baudrillard shows that consumption itself is a form of language used to communicate with other consumers. Baudrillard argues that we all understand this language because we have learned the "code" (Ritzer 2010) through a life of social interaction. Consumption is a type of language in which each item we consume functions as a sign of our perceived character, personality, and individuality. Coupled with Baudrillard's concept of *marginal difference*, in which people choose objects of consumption as testaments to their relative difference from other people, consumption begins to fall into a postmodern light. Films are a good example: a consumer who purchases action films communicates something different than one who buys "chick flicks." The person who prefers the action films discloses a desire for thrill, excitement, and violence, while the person who chooses the chick flicks values romance, humor, and happy endings. Baudrillard calls this process *personalization* as identities are derived from marginal difference. Understanding consumption through Baudrillard's postmodern perspective offers the first step in his theory of hyperreality (Baudrillard 1998).

Another renowned postmodern theorist, Michel Foucault, performed extensive work on the fragmentation of our postmodern society (1972, 1980). In his pursuit he found that, with the exceptional growth of society and technology, our experiences have become fragmented. We tend to receive pockets of information in fragments of society, as opposed to the order, coherence, and simplicity that characterized modernity. This assumption led to Foucault's concept of the decentered subject as "an individual [who] does not actually 'live' a holistic, planned existence but, rather, 'lives' several discourses or roles imposed on him/her from without" (Zompetti and Moffitt 2008: 276). Now a staple of postmodern thought, Foucault's insight into the discrete workings of the larger social forces affords us a more comprehensive frame in which to appreciate Baudrillard's theory of hyperreality.

The second fundamental component of hyperreality is understanding simulacra and simulations; as Baudrillard asserts, the difference between a sign and a simulation is that while the sign demonstrates equalities between the real and the representation, simulations render this connection meaningless (Pogell 2011: 461). A simulacrum represents a simulation of a simulation that has been completely divorced from reality, referring more to the abstract code of valueless meaning than anything grounded in an intelligible reality. In this state, signs and simulations drift in a sea of free play, as they have nothing tangible from which to derive meaning.

Hyperreality and Professional Sports: Norm of Originality

Hyperreality theory has offered a comprehensive discourse on the interplay of signs, images, and simulacra as we enter the postmodern era of fractured information. Scholars have used Baudrillard's ideas to explore a range of social institutions, processes, and phenomena. As capital progresses toward the commodification of every dimension of our existence, hyperreality theory can unveil the abstract forces that accompany and facilitate this transition. Baudrillard's theory has been applied to nature, politics, television shows, websites, and most prominently theme parks (Cypher and Higgs 1997, Zompetti and Moffitt 2008, Luke 1991, LaTouche 2011, Pogell 201, Kelly and Hoerl 2012). Nevertheless, an exploration of professional sports through the hyperreal lens has yet to be established. Therefore, I plan to illuminate several of the hyperreal, entertainment-driven dimensions of a professional sports industry that has achieved religious status. The production of sports by the media is increasingly dominated by simulations of events and individuals, while the spaces and materials transition to artificiality. Through this new theoretical application to professional sports I arrive at several points of empirical departure for future research.

Critique of the Political Economy That Engenders Hyperreality

Baudrillard derives his theory from a Marxian critique of the fetishism of commodities as the commodification of value. Situated in our current capitalist contradictions, Baudrillard reasons that in the context of the "planned programming of production" (Luke 1991: 1), capitalism no longer relies on the production of goods and services, but rather, our postindustrial

economy functions through a constant generation and manipulation of semiotic codes and images. This transformation renders the Marxian concepts of exchange value and use value outdated and irrelevant; replacing them is Baudrillard's concept of sign exchange value (*valeur d'échange signe*) (Luke 1991: 2). Baudrillard would argue that, in today's social environment, the use value of the object is either a guarantee or simply an excuse for the consumption; therefore, communication remains the primary influence and function of consumption in our postmodern, postindustrial society.

One of the conspiring forces in the production of hyperrealities lies within the effects of transnational corporate planning on the historical relationships between capital and labor, production and consumption, and supply and demand (Luke 1991). These historical contradictions have been manipulated by capital to develop and preserve their new relationship with consumption. While in the past consumption operated on its own, it is now a necessity for capital to produce consumers to consume their limitless production. Baudrillard refers to this as the production of demand; furthermore, it operates within individuals and on society as a whole. Individual people are rendered part of the production of demand through their abstract-individual desires that serve as prepackaged productive forces, which are then mediated and regulated in the corporate marketplace (Luke 1991). The second facet of the production of demand, Baudrillard attests, can be found in the form, material, and substances of society itself as they are produced to perpetuate consumption (similar to Bernard London's "planned obsolescence") (London 1932: 1). Therefore, "every dimension of social existence today essentially is a complex simulation of reality, designed specifically to sustain the fragile cycles of political, economic, and cultural reproduction" (Luke 1991: 4).

Baudrillard argues that this environment prevents any type of civil society from emerging, and negates any resistance to authority, or capital by the masses. The mass society has undergone a transformation in which it is being recreated and represented in countless hyperconformed, hyperreal images. As only the people who interact with the media or marketplace are reproduced in these images, the only mass society that exists in the hyperreality (shared cultural conscious) is hyperconformed. While in the past, the masses would interpret signs and images in

accordance with their own values or code, the mass society of Baudrillard's postindustrial consumer societies simply sensationalize and circulate these symbols into a spectacle in the pursuit of the red herring of meaning. Baudrillard believes that the artificiality and misrepresentation of the multitude of symbols, signs, simulations, and now simulacra have stripped reality of all meaning, leaving us in an endless quest for self-authentication. In our pursuit, we find ourselves as episodic conductors engulfed in more simulacra, only reiterating the code of simulacra and further detaching us from any profound reality or meaning. This ultimately gives way to Baudrillard's hyperreality, where our society has become so dependent on simulations and models that we have become completely unhinged from the real world that precedes these simulacra. Reality has been replaced by symbols of "a reality."

Baudrillard's Hyperreality

Baudrillard believes the phenomenon of hyperreality has been a progression over time, in which the sign's function in society has evolved to now *produce* these realities that are then imitated, becoming reality itself – a hyperreality. Baudrillard advanced four steps in the development of the sign: fetishism, counterfeit, mystification, and simulation. While he wrote extensively on this process and the intricacies of the terms for our purposes, I will use Sarah Pogell's brief yet subtly nuanced summary,

[I]n early Western history the sign reflected a "profound reality"; later, it evolved to conceal and "denature" reality; then, came a period when it adumbrated "the *absence* of a profound reality"; and, in contemporary society it has been severed from reality all together to become a simulacrum, a simulation, of a simulation, of a simulation. (2011: 461)

This reconstitution of the sign is rooted in today's countless new forms of electronic media, as it seems impossible to escape the pervasiveness of images in our society. Kearney articulates this phenomenon as "our Western culture is becoming increasingly a Civilization of the Image...the psychic world is as colonized as the physical world by the whole image industry" (1988: 1). Here, signs have unhinged from things signified resulting in an exponential evaporation of meaning, where the reality and the image amalgamate, where a model has replaced the indigenous, and

“where our understanding of the world is preconditioned by the electronically reproducible media of television, cinema, video, and radio...” (Kearney 1988: 251-252).

Regardless of whether the simulation is composed for television, internet, or radio, the process of simulating “a real” is the rudimentary message, because all of the simulations present a hyperreal reality. Zompetti and Moffitt elucidate it as, “the message design is the content, and the meaning” (2008: 286). As this message gets accepted, sensationalized, redirected, and repeated, a “model of the real” with no origin becomes the shared cultural consciousness of reality. When this occurs and the real is no longer a given, but rather, artificially produced, it becomes realer-than-real, a refurbished, enhanced version in a wish-fulfilled remembrance of itself.

One of the most cunning dynamics of the functions of hyperreality is that it alienates us from the world while simultaneously convincing us that it is what is actually taking place. Baudrillard argues that this process has resulted in the liquidation of all referentials by the image, which now cleverly conceals its function within the hyperreal. With each creation of a “perfect simulation” they will certainly become intertwined and entangled with “the real”; for Baudrillard, this means “it is now impossible to isolate the process of the real, or to prove the real” (1992: 179). John Storey examined the events culminating with O.J. Simpson’s arrest and their media representations, ultimately concluding that in today’s postmodern world, it is no longer easy to differentiate between the “real” event and its presentation in the media (1998: 180). Storey found that, for people who went to Simpson’s house to see him apprehended, it was not simply enough to be there –one had to be there on television. Namely, to feel included as part of our postmodern social reality, one has to engage in the process of simulation: the production of artificial authenticity and legitimacy of the self. In this vast realm of simulacra, the sign acts as a “valueless free radical capable of bonding anywhere in any exchange” (Luke 1991: 4). Baudrillard explains that in these worlds of re-presented communication (fashion, media, publicity, information and communication networks) of simulacra and code, “the global process of capital is founded” (1983: 99).

Hyperreality: America's Professional Sports

In the sphere of professional sports, the broadcasting networks, franchises, and the leagues themselves are players in a capitalist system. Situated in our information age, this industry fits Baudrillard's model of no longer producing goods, but rather, generating semiotic codes and images (e.g., celebrities, teams, the sports themselves, plays, statistics, and so on). When this is understood through the lens of Baudrillard's concepts of *marginal difference* and *sign exchange value*, we witness the production of demand in the modern-day fan. As each team, player, and even sport professes its own metanarratives and defining characteristics, in accordance with "the code," a fan's decision of whom to support and cheer for derives from the message that his or her selection communicates (sign exchange value), and how that message relates and contrasts with other fans (marginal difference). As we will see, the essence of Baudrillard's theory runs through the arenas of professional sports, most pervasively through the mass media industry that surrounds and reproduces it, but also through simulations that have crept into the athletes and the athletic environments in which they perform.

The Production of Professional Sports: Creating the Hyperreal Code

It is almost intrinsic in an industry or system such as media, where profits are gained through ratings and viewers, that they *hype* the presented reality, that is, "promote or publicize (a product or idea) intensively, often exaggerating its importance or benefits: 'an industry quick to hype its products'" (Dictionary.com 2013). The entire image industry, mentioned by Kearney, effectually complements Baudrillard's theory, for the primary strategy behind selling images of reality is to make them more appealing than anyone's personal experiences. The result is simulations manufacturing "experience" as well; however, since the simulations are found wanting, consumers are obliged to engage in an endless pursuit of attaining the hyperrealities presented to them. Ultimately, it comprises the ideal business model for a profit-driven entity as it ushers the consumer into a world of costly, yet never ending nor satisfying simulacra and simulations.

The Media/Sports Production Complex: A Reciprocal Relationship

The relationship between professional sports and the media has always been a symbiotic one, as Joseph Maguire coined the term “media/sport production complex” (1993). This paradigm escalates the detachment of the sign and simulations from reality exponentially, fostering an upward spiral ascending further and further from communicating any concrete meaning, but rather, distracting and redirecting into a sphere of unintelligible symbolic exchange floating into hyperreality. As one watches a sports broadcast, an assault of hyperreal images and simulations rushes the screen. The commentators themselves embody George Ritzer’s interpretation of Baudrillard’s hyperreal, since with artificial tans, whitened teeth, enhanced wardrobes, and celebrity narratives these hyperreal announcers are certainly “realer than real, more beautiful than beautiful, and truer than true” (2010). The announcers themselves, personifying simulacra, then generate the overdramatized symbols and images further into the hyperreal through language and sensationalized onomatopoeias.

Hyped Cherry Picking: The New Technology and Use of Statistics

With the explosion in innovation, the methodology of collecting and analyzing statistics has erupted. In the pursuit of material that will boost their ratings, broadcasters saturate their productions with multilayered and out of context statistics. These obscure and often arbitrary statistics become embellished and sensationalized as an artifice for legitimacy. Statistics have evolved to express a specific type of cherry picking in a quest to sensationalize already simulated metanarratives. Furthermore, with the new forms of electronic media, statistics are not the sole medium for propagating such illusions.

ESPN’s SportsCenter: The Master Code

A plethora of segments comprises sports broadcasting; however, none are as widely known (or distributed) as SportsCenter’s “Top Ten,” also known as “Top Plays.” This segment is composed daily with each new episode of SportsCenter, and features highly dramatized graphics and commentary. Each day there is a new set of ten “outstanding” plays that deserve to be played and replayed throughout the day. One tendency of the “Top Ten” segment is that often, a majority of

the lineup is composed of plays from the same sport, as sports are seasonal; this results in a succession of plays that all resemble each other. Additionally, as it is reproduced daily, relatively average plays often become exaggerated into great achievements. The segment itself serves to attach heroics to relatively ordinary plays, or even accidents, presenting fans, teams, and announcers with constant meaning and authority to perpetuate the hyperreality of professional sports. Furthermore, it also derives from a desire to endlessly relive positive moments in the fear that they will never happen again.

This repetition and re-presentation *is* the generation of the semiotic code and images that span the sphere of professional sports. On a typical weekday, SportsCenter, generally a 60-minute show, airs for fourteen and a half hours on one channel alone (one of ESPN's seven channels). This constant production, in collaboration with the countless new technologies for receiving these simulations, makes the world of sports a vast, neverending hyperreality, completely unhinged from the reality of athletics. Additionally, the extensive access made possible through electronic media presents the consumer with a new paradigm, as it is now possible (and advisable through advertising) to remain in the simulated realm of professional sports twenty-four hours a day. What implications does this carry for society, as growing numbers of its citizens are being transformed into a passive mass society conditioned to live vicariously through a screen? Unfortunately, even the athletes, in an effort to perpetuate this hyperreality, have become simulations themselves.

Simulated Athletes: Celebrity and Steroids

Today's postmodern simulated athletes manifest both abstractly and physically, ultimately functioning as symbols and simulacra in the hyperreal realm of professional sports. Therefore, they only control one aspect of their movement into the hyperreal. The abstract dimension of these simulated athletes operates outside of their control as television producers manipulate what is shown and how it is conveyed. This leaves the physical facet of their body as the location of athletes' departure from the natural world to that of the hyperreal. Nevertheless, it is the combination of the two that constructs the athletes we all know.

Celebrity Narratives: The Hyperreal Understandings of Athletes

The celebrity narratives that germinate through the media's symbolic "conflated aggregations" (Fox and Miller 2005: 488) and "plastic disposable reifications" (Fox and Miller 2005: 487) epitomize the traits of Baudrillard's theory, as they circulate in other medias, the marketplace, and consumers' minds. Charles Fox and Hugh Miller's concept of *conflated aggregations* describes a sign that conveys part of the whole as if it were the entire thing (e.g., Tim Tebow's religious convictions). These are intrinsic to media and particularly sensationalized media, as they often choose one hyperreal dimension of a phenomenon and reproduce that image constantly. Fox and Miller's *plastic disposable reifications* refer to the collision and confusion of hyperreal signs and simulacra. They argue these signs are malleable as their meanings are easily changed and manipulated in their production, while remaining irregular in the sense that they "come and go but always [have] one or more floating through it" (Fox and Miller 2005: 487). Mike Tyson serves as an example as he has transmuted from great athlete, to convicted rapist, to movie star. Whether it be celebrity relationships (e.g., Tim Tebow with Taylor Swift or Gisele Bündchen and Tom Brady), scandals (e.g., Terrell Owens or Michael Vick), or specials where the television producers lay out an entire life narrative for athletes, these qualify as simulacra that have lost their grounding in the real through the desire to be realer than real, or hyperreal.

Simulated Muscles: Pressures of Performance Enhancing Drugs

In an attempt to be better than real, performance-enhancing drugs (PEDs) offer a fountain of youth for athletes who seek to stay in the realm of the hyperreal in order to maintain the benefits of class, status, and power. What are the implications of a hyperreal sports industry that values athletes who surpass the ordinary limitations of the human body? As PEDs evolve we find them increasingly entangled in the bodies and histories of professional athletes. The pursuit of excellence in professional sports leads today's athletes to the realm of the hyperreal, as the demand for athletes who are capable of reaching heroic levels of accomplishment has engendered the vast development, circulation, and cover up of the PED market. PEDs denature the physical body to function in a specific hyperreal way that produces

and reiterates the code of professional sports, creating simulated athletes adept at meeting these hyperhuman standards (e.g., Barry Bonds, Mark McGuire, and Lance Armstrong). For individuals who are marked symbols of the ideal super-athlete, the prospect of losing the physical characteristics that defined their self-identity provides an additional pressure on aging athletes to compromise their integrity with PEDs. Ultimately, their physical blood and bodies have been injected with the hyperreal, their muscles –now simulated muscles –are no more real than the synthetic turf they play on.

Simulated Spaces: The Hyperreal Environments of Professional Sports

Even the environments of sports lend themselves to Baudrillard's theory, with the postmodern inundation of artificiality that has seeped into every corner of sports structures, equipment, and tragically, the rules of play. With the growing size of professional sports industries and audiences, and under pressure to expand stadiums and the materials that fill them, owner's have turned to artificial substances and processes to keep up. We witness this transition from a naturally-provided space to an artificially-constructed space not just in professional sports, but wherever the audience meets mass society.

Hyperdomes: The Hyperreal Space of Superdomes

Superdomes epitomize countless dynamics of hyperreality from their retractable roofs, to their megatrons, to their plastic grass; it is a challenge to find authentic athletic references at professional sporting events. Traditionally, sports were played in natural settings, and engaged with the reality of nature. Football was played on a natural grass field, subject to the elements of *natural* sunlight, wind, rain, and snow. However, with the creation of superdomes, the entire space of the athletes and spectators becomes a hyperreal production void of the realities of such natural environments. In the hyperspace of the superdomes there is no wind, no rain, no snow, and controlled sunlight absent of the elements that constituted the original, natural environments that gave rise to the sport. Synthetic turf exemplifies this transition of the environment as the naturally growing grass is replaced with manufactured turf. These artificial substitutions in the athletic environments function as part of the production of demand and London's "planned obsolescence." As these dimensions transition

from natural production to industrial production, a technology develops resulting in upgrades and replacements that render additional purchases inevitable. With each new model, upgrade, and technology, the environments of professional sports become further detached from the profound reality of the natural world into a hyperreal simulation.

The last glaring hyperreality in the superdomes of American sports presents the game on a digitally enhanced megatron capable of countless simulations that surpass the historical reality of watching a sporting event. From slow motion and replays, to zooming and the countless other manipulations done to the recordings, these techniques all present the game in a hyperreal state, larger than life. The stadiums have grown to the point where many spectators prefer to watch the megatron at the game as opposed to the actual event. This marks the collision of a plethora of simulacra, simulations, and hyperreal signs as the athletes, environment, and productions all maintain hyperrealities.

Replacing Tradition: The Hyperreality of Sports Equipment

Even for the athletes, each year a new piece of their equipment is synthetic; hockey sticks are no longer made of wood, but graphite composite, while high-tech hybrid golf clubs can drive the ball strides beyond any traditional club. These developments in equipment reify several dimensions of hyperreality through the production of code and marginal difference as well as the material production of demand and planned obsolescence that follows. Endorsements overwhelm productions and performances in today's sports world. A viewer watching a golf tournament is presented as many images of new cars on the golf course as he or she is of the landscape of the course. Tiger Woods exemplifies the power of endorsements as he holds a five-year \$100 million contract with Nike. Through the athlete's association with a specific brand (sign) they attach their narrative to that sign, while the excessive wealth simultaneously contributes to the hyperreal celebrity narratives of the athletes. Once this bond is established through countless images and simulations (e.g., watching Woods wear all his Nike apparel), consumers choose Nike equipment and apparel to demonstrate marginal difference and communicate a connection with Woods. Nike not only attaches their brand to Woods, but also to the meanings that his metanarrative holds, such as fantastic success on the golf course and in life.

Rule Changes: The Hyperreal Structure of Professional Sports

The ultimate simulation for the sake of sensationalizing the game for consumers lies in alterations to the rules of play to make the game more hyperreal for fans. This happened in the NHL in 2005-2006, resulting in sudden-death shootouts at the end of every tie game, minimizing goalie equipment to allow for more scoring, and several other fundamental compromises to the integrity of the game. By eliminating the tie and providing for more goals, the game assumes a hyperreal form, becoming realer than real. This sensationalized version of the sport provides fans with structurally inflated code and meaning to circulate. That is, if the rules of the game are changed to make it easier to score, then the statistics of those playing within the newly compromised play are hyped in a structural manner to conceal the production of the hyperreality.

The displacement of the tie by sudden-death shootouts also provides additional code and meaning to consumers as it serves celebrity narratives and undermines teamwork, while also guaranteeing closure. Through this elimination of the grey area, compromise, and sportsmanship of the tie, the NHL loses contact with one of the remaining dimensions of sports that maintained relevance to a profound reality. Lastly, the eradication of the tie in the NHL strengthens *difference*, as ties acknowledge that the two teams were equal in the eyes of the game. As the teams' and fans' self-conceptions are situated within the context of their competitors, ties restrict the function of *difference* by drawing parallels and equivalences between the two groups. The rule changes of 2005-2006 mark a progression of the simulacra further into hyperreality and further from the relevant characteristics hockey once held to everyday life, including hard work, compromise, and teamwork. My last example of the hyperreality of sports offers insight for the future of the professional sports industry, as it propels all of these hyperreal alterations far beyond the NHL in 2005-2006. All-Star games are overdramatized, glamorized, and bombastic spectacles where the traditions of sport are ignored for the sake of simulating the hyperreality of celebrity narratives, arbitrary and unintelligible code, and the fundamental restructuring of the game.

Conclusion and Discussion on the Hyperreal

Ever increasingly and subtly, symbols and signs of “a reality” are replacing reality itself. Whether it is nature that is being replaced, society as a whole, or something as trivial as professional sports, the hyperreality is there, and it is creeping in slyly to all the nooks and crannies of our postmodern society. Just as Baudrillard’s assessment of the sign underwent a transformation from the profound to the simulated, as does each segment of society, existence itself is becoming a commodity. Concerning professional sports, with each new season, rules are changed, environments are simulated, and new athletes serve as “plastic disposable reifications” (Fox and Miller 2005: 487). Meanwhile, the media plays their conducting role; as Baudrillard elucidates, “we must think of the media as if they were in outer orbit, a sort of genetic code which controls the mutation of the real into the hyperreal” (Luke 1991: 5). Baudrillard’s theory offers tremendous insight into the inner workings of our society to unveil power disparities among people, social structures, discourses, and metanarratives. Hyperreality theory, while relatively abstract and not encompassing every aspect of society, still holds truths that ought to be broadly applied and understood as steps to challenge the inferred process of how society creates its worldviews.

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Acknowledgments

The Editors of *The Drew Review* would like to thank especially the Board of Trustees, President Vivian Bull, and Jonathan Levin, Dean of the College, for their ongoing and generous support of the *Review*.

While only one-third of all nominated papers are published, the *Review* reflects the efforts of the entire Drew University community. Without the participation of the nearly thirty students who submitted their essays and the sixty faculty members who participated as nominators or outside readers, *The Drew Review* would not be able to maintain its high standards for publication. All nominated essays were recognized by their nominating professors as particularly outstanding examples of undergraduate research and writing; a nomination to the *Review* honors that achievement. We are grateful to those who made the *Review* possible by serving in all of these capacities.