

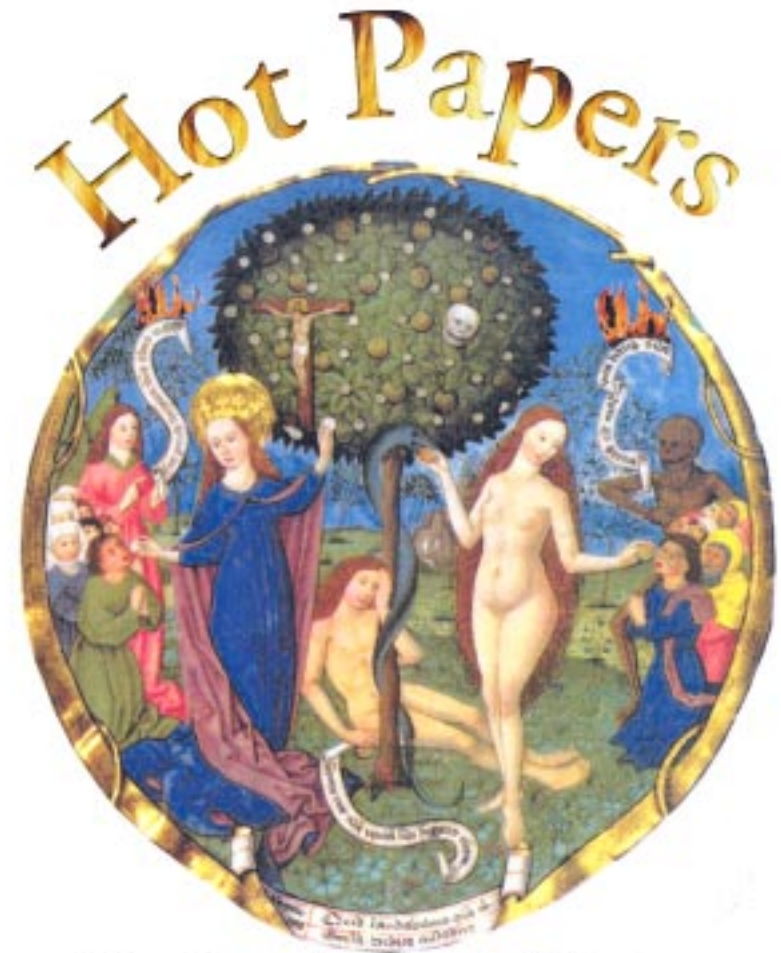
They are out there. On every professor's desk there are examples of student writing that burn with the spark of inspiration. Hot Papers reveal students in the process of shifting paradigms, discovering new systems of thought, creating new meanings and expanding their outlook on the world. We celebrate these activities as the signs of significant progress toward scholarly accomplishment and personal growth. The Hot Papers competition, conference and journal showcase excellent academic work and challenge all students to meet the same high standards. We also hope that Hot Papers will duly acknowledge the many hot professors on campus who consistently spark such high-quality work.

Jeff Howlett
Lisa Sandlin
2003



Hot Papers 2003

The Best Academic Writing at Wayne State College



The Best Academic Writing
at Wayne State College
2003

**Hot Papers 2003:
The Best Academic Writing at Wayne State College**

**Jeff Howlett and Lisa Sandlin
Producers, Hot Papers 2003 Competition, Journal
and Conference**

Copyright © 2003

This year's Hot Papers Journal was funded by a Wayne State College Instructional Improvement grant.

Many thanks to:

The beneficent Dr. Alan Bruflat, Chair, Department of Language and Literature, for sharing his resources in the production of this journal.

The illustrious Eddie Elfers for editing, journal layout and cover design.

The esteemed Hot Papers 2003 judges: Kent Blaser, Susan Ellis, and Katja Hawlitschka.

The industrious Production Assistants: Suzanne Penn, Joyce Trevett, Anne Rutten, Colleen Spielman, Josh Hamilton, Erin Gaspers, and Jennifer Sedivy.

Table of Contents

Triumph and Tragedy: The Case of the <i>USS Indianapolis</i> Matt Murphy — First Place — \$200	1
Democratic Republic of the Congo Roy M. Zach — Second Place — \$100	27
A Theoretical Analysis of the Detrimental Cycle of Economic Development Thomas Lamoreux — Third Place — \$50	47
Honorable Mention	
Censorship in Advertising: The United States versus China Sara Kocer	77
What Makes an American Beauty? Chris Begeman	65
The Discovery of Knowledge in Moral and Ethical Philosophy Stacy Korte	86
Management of Pediocin JD for Determination of Greatest Antimicrobial Ability Jennifer L. Stanton	96

Triumph and Tragedy: The Case of the *USS Indianapolis*
by Matt Murphy
for Professor Don Hickey's Social Sciences Research Seminar

The Ship and the Sinking

*Who is in charge of the clattering train?
The axles creak and the couplings strain,
And the pace is hot, and the points are near,
And Sleep has deadened the driver's ear;
And the signals flash through the night in vain,
For Death is in charge of the clattering train.*
-Unknown

The sinking of the *USS Indianapolis* at the end of World War II is an example of a story that will outlive its participants. From the movie *Jaws* to the bestselling books that have been written about the sinking, the American public has expressed its fascination and sympathy with a strange tale mixing equal parts of tragedy and intrigue. As a simple survival story, this sinking ranks second to none; as a tale of bureaucratic blunder and incompetence, it rivals the infamous "catch-22"; as a tale of a Naval cover-up, it probably has no competitors. It is a human-interest saga wrapped in the cold glove of military law. The account stretches over fifty years and includes as main characters both a respected Naval officer and an 11-year-old boy, both of whom never knew or met one another, but whose lives nevertheless intertwined in a truly remarkable manner.

The story of the *Indianapolis* began in the aftermath of the First World War, when the Washington Conference Treaty of 1921-22 dictated that the U.S. Navy was to construct 18 heavy cruisers in 4 classes. Named for the capital city of Indiana, the *USS Indianapolis* was the beneficiary of the Navy's decision to wait until the other major world powers had themselves initiated construction: it took advantage of the latest technological improvements that were being implemented in cruiser construction from around the globe. The *Indianapolis* and the

USS Portland were in a class of their own, bearing small improvements over the design of the Northampton class which had immediately succeeded them, and both ships included such refinements as a higher upper deck, an aircraft hanger amidships, an improved tripod mainmast, and three main battery turrets.¹

The ship was the pride of the Navy. President Franklin Roosevelt considered it his favorite cruiser and had it appointed his official "ship of state," riding it on a number of expeditions to transatlantic and South American destinations, of which his "Good Neighbor Tour" in 1936 and his visit to the Pan-American Conference in Buenos Aires was probably the most well-known.² Roosevelt relished the opportunity to conduct ceremonial reviews of the naval fleet while standing on the ship's fantail, where he would typically smoke a cigar and watch as the New York skyline drifted slowly along.³

Those who served on the *Indianapolis* liked it for other reasons. For one thing, it was considered a lucky ship. Its history in warfare was impressive: time and again during the Second World War, it would enter major, even decisive, battles and emerge virtually undamaged. It was there during the Battle of Midway, during raids on Bougainville in the Solomon Islands, during the invasion of the Gilbert Islands, during the Battle of the Philippine Sea and the famous "Great Marianas Turkey Shoot," and during the Battle of Iwo Jima. After Iwo Jima, the *Indianapolis* had engaged in nine straight campaigns and had sustained no major damage. Its sailors could be forgiven a little vainglory.⁴

The furies came down hard, however, on Okinawa. A kamikaze plane carrying an armor-piercing bomb with a delayed detonator smashed through the main deck and pierced the dining hall, killing one man and causing eight more to die when the hatches of the ship were closed as the water rushed in.⁵ Captain Charles McVay, now the skipper of the *Indianapolis*, received an official congratulations from naval command for his damage control efforts.⁶ Even when there were problems, the *Indianapolis* appeared luckier than most.

Admiral Raymond Spruance had earlier named the *Indianapolis* as the flagship of his Fifth Fleet, and he was not about to give up on such a fine ship; nevertheless, he transferred to the *USS New Mexico* for a time while the *Indianapolis* headed to San Francisco for repairs at the Mare Island shipyard.⁷ San Francisco offered any number of opportunities for trouble when it came to the young sailors stationed there; *The Bluejackets' Manual*, a guidebook of proper conduct, even saw fit to include the following admonition: "Bad women can ruin your bodily health."⁸ The serious work of repairing the ship, however, ate up large chunks of the sailors' time, and the *Indianapolis* was ordered to set sail on July 16, 1945.⁹

What they were sailing for, however, remained a mystery, even to Captain McVay. His ship was suddenly on urgent call and he had no idea why; the mysterious nature of his assignment deepened when he was told that he would be transporting a top-secret cargo to the island of Tinian. His orders were clear: protect the cargo at all costs. If the ship was about to sink, and only one lifeboat was available, he was to place the cargo in the lifeboat. He was to sail the *Indianapolis* to Tinian as fast as was possible; the sooner this cargo was delivered, the sooner the war would end.¹⁰ McVay was naturally unaware that his ship was carrying the uranium to be used in the atomic bomb soon to be dropped on Hiroshima and was probably better off not knowing that the Navy had chosen his ship rather than an airplane because it was afraid that a mishap could blast San Francisco off the face of the earth.¹¹

And so it happened. The *Indianapolis*, sailing as fast as it could, dropped off some passengers at Honolulu (breaking a record for fastest sailing between San Francisco and Honolulu set by the *USS Omaha* in 1932), before heading out for Tinian.¹² At Tinian, the *Indianapolis* was sent an order from Commander in Chief, Pacific (CINCPAC), a post occupied by Fleet Admiral Chester W. Nimitz with advance headquarters in Guam. McVay was ordered to receive routing instructions at Tinian and then sail to Guam, a directive he promptly obeyed.¹³ Upon arriving in Guam, McVay was told to report to the port director of the

Guam Naval Base, where he would receive further routing instructions intended to take his ship to the island of Leyte. Upon arrival in Leyte, he was expected to send a message to Vice Admiral Jesse B. Oldendorf of Task Force 95 (CTF-95) reporting to him for duty. However, before sailing up to CTF-95 (which was anchored off the Japanese coast), McVay was expected to spend ten days at Leyte Gulf getting his ship in shape for battle. For this task, he was expected to report to Rear Admiral Lynde D. McCormick, the Commander of Task Group 95.7 (CTG 95.7) and a direct subordinate of Vice Admiral Oldendorf.¹⁴ A message announcing this information was sent out, and McCormick's staff began to decode the message—before abruptly stopping. The addressee was carelessly misinterpreted as Task Group 75.8 rather than 95.7, and McCormick's staff assumed the message was not intended for them. No repeat was requested. In other words, McCormick didn't know that the *Indianapolis* was coming.¹⁵

This was the beginning of a litany of errors that would be comic if it had not had such painful consequences. On Guam, McVay went to meet with James B. Carter, Nimitz's assistant chief of staff and the operations officer. After being told that it was imperative to leave for Leyte in a timely manner, and that refresher courses were no longer available on Guam, McVay went off to meet with the Guam port director.¹⁶ The port director was out of his office at the time, so McVay met instead with Lieutenant Joseph Waldron, the convoy and routing officer at Guam.¹⁷ McVay wished to rest his engines after the record-setting run from San Francisco to Honolulu, and was thus allowed to sail for Leyte at 15.7 knots. Waldron was additionally responsible for choosing a route for the *Indianapolis* to sail on. This was an easy task: Naval operations called for standard routes to be utilized whenever such a course of action was possible, and the standard route between Guam and Leyte was the "Peddie Route," basically a straight line.¹⁸ McVay additionally asked for an escort to accompany him on the route, since his ship had no sonar equipment; Waldron called the surface operations officer, Captain Oliver Naquin, and spoke to his assistant, a Lieutenant

Johnson.¹⁹ Johnson told him that no escort would be necessary, since the Peddie Route was widely understood to be in the “backwaters” of the war. Besides, escort ships were sorely needed in other areas of the Pacific campaign, and there were just so many to go around.²⁰ McVay would have to make do without one, even though the absence of an escort meant that his ship would be the first capital ship making the voyage from Guam to Leyte without the assistance of an escort.²¹ McVay would later say: “I definitely got the idea from CinCPac Headquarters and Port Director, Guam, that it was a routine voyage.”²²

It wasn't. Earlier in the war, the Navy had broken the Japanese code and was well aware of the movements of Japanese ships; Captain E.T. Layton, the chief of combat intelligence at Pearl Harbor, had a personal rule that some components of “Ultra Secret” information could be passed down to subordinates as long as it was worded in a general manner.²³ The Navy was well aware of the existence of a group of Japanese submarines known as the “Tamon Group” which was known to lurk in the area into which the *Indianapolis* would be sailing. Commodore Carter was aware of this information, but did not relate it to Captain McVay. Why? It was not his job. Furthermore, he had passed that information on to Captain Oliver Naquin, who he assumed had shared it with the Guam port director, who he assumed would be speaking with McVay.

Of course, the port director was not in when McVay went to see him, but even if he had been, it would not have made a difference: Naquin simply never passed on the information.²⁴ The reasons for this are unclear, but it hardly constitutes the only mistake made: when McCormick received a message that the *Indianapolis* was sailing his way, he was dumbfounded; due to his non-receipt of the earlier message, he could not understand why the *Indianapolis* was coming, and thought she had already received refresher training in either Guam or San Francisco. Unlike McCormick, Vice Admiral Oldendorf never had a chance to be stupefied, for he never received the latter message at all: it was sent to the joint communications center on Okinawa and promptly disappeared. Oldendorf had received the earlier

message and knew why the *Indianapolis* was coming but not when; McCormick knew when the ship was coming but had not the faintest idea why.²⁵

And so it was that the *Indianapolis* set out for Leyte with key Naval officers relatively unaware of what she was doing out there, and with the captain and crew of the ship almost completely in the dark about possible submarine threats. There were stories, of course—there always were. Several days beforehand, a submarine had reportedly been seen approximately 70 miles south of the Peddie Route; on July 25, a ship had reported sighting a possible periscope roughly 90 miles north of Peddie; also on the 25th, sound contact was heard that could have been a submarine, although that was “doubtful.” But such reports were a dime a dozen; almost nobody took them seriously, although the *Indianapolis* officers did have a good laugh regarding the matter over dinner the night they were sunk. If the reports had been serious, the ship would have been rerouted by the Marianas Command, whose district they were still in and which they were expected to leave (for the Philippine Sea Frontier) shortly.²⁶ Captain McVay was speaking truthfully when he later stated: “The knowledge which I possessed indicated to me that there was little possibility of surface, air, or subsurface attack, in fact no possibility.”²⁷

Why are these reports important? Because the Navy would later emphasize them in stressing that McVay was aware of “possible” submarine activity (even though the Navy saw no need to reroute the *Indianapolis* and erred in not telling McVay of the submarines in his way). The Navy's position was that McVay was responsible, not for the forthcoming loss of his ship, but for putting his ship in danger by failing to utilize zigzagging technique, an evasive maneuver of questionable value.²⁸ On the night of July 30, 1945, at around 7:30 p.m., McVay informed Lieutenant Charles McKissick, the officer of the deck, that zigzagging would no longer be necessary.²⁹ The orders on zigzagging were rather straightforward: it should be done in good visibility, either day or night, and in the case of McVay, his standing orders for this voyage had allowed the procedure to be utilized

entirely at his discretion. Moonlight was only intermittent.³⁰ Besides, he had nothing to worry about.

Or so he thought. On a Japanese submarine known as the I-58, Commander Mochitsura Hashimoto had been informed that a possible American ship lay straight ahead. Giving an order to dive, Hashimoto set up his submarine to fire. Coming to within 3,500 yards of the *Indianapolis*, Hashimoto gradually maneuvered his submarine into place until he felt confident that he could sink the ship in front of him using his torpedoes. Twenty-seven minutes after he first sighted the *Indianapolis*, Hashimoto ordered his torpedoes to fire. Six torpedoes left their tubes in three-second intervals, and all six were released within 15 seconds.³¹

Captain McVay was blasted awake by the sound of the first torpedo hitting its target, and he made his way around the bridge of the ship stark naked.³² McVay knew his duties in such a situation: he was to estimate the severity of the damage, do his best to alleviate it, and engage the enemy—if an enemy there was.³³ He quickly ordered Commander John Janney to try to get a message off in Radio Shack 1.³⁴ After checking up on the situation and hurriedly putting on his clothes, McVay listened as Commander Joe Flynn told him that the ship was badly damaged and that the best course of action might be to abandon ship.³⁵ He had been feeling much the same way—his sailor’s sense for the “feel” of a ship was telling him that all was not well. In particular, there seemed to be a notable absence of electrical power—not a good sign, since it indicated that the belly of the ship had probably taken a ferocious hit.³⁶ McVay gave the order, but it proved hard to carry out since the communications systems were down; it would have to be spread by some other means. The confusion was only augmented when Lieutenant John Orr, officer of the deck, gave the *Indianapolis* bugler, Donald F. Mack, the order to abandon ship—by which he meant to blow the bugle call indicating abandon ship. Mack, misunderstanding (or pretending to misunderstand) the order, promptly jumped ship.³⁷ Meanwhile, the ship was listing in fits and starts; it would not be possible to maintain footing much longer. The

general tumult led to a grievous loss of life: Lieutenant Commander Joseph Reid was on the fantail desperately trying to stop sailors from jumping off the ship (since he had not yet heard the order to abandon ship) but was mostly unable to do so. With an increasing starboard list and the darkness of the night, most of the men were unable to see the port propellers rising slowly out of the water, and a number of *Indianapolis* crewmen jumped into them and were cut to pieces.³⁸

Radio communication with outside ships was vitally needed. There were two radio shacks on the *Indianapolis*: Radio I and Radio II. Radio I normally took in all the messages, and Radio II normally sent out all the messages. Radio I was technically capable of sending messages itself, however, and a line was set up allowing messages to be sent over 4235 kilocycles. Radioman 1st Class Joseph Moran began to send out a message informing any ships in the area of the exact location of the *Indianapolis* and pleading for help: “NEED IMMEDIATE ASSISTANCE” was the frantic plea appended to every message. A sailor from Radio II copied his message by hand and then ran back to his radio shack, where Chief Radio Electrician L.T. Woods soon began broadcasting a message of 500 kilocycles. Radio Technician 2nd Class Fred Hart, ensconced in Radio II, would later recall that all the pilot lights on the transmitters were on—indeed, Radio II had power until the ship went under, due to the after engine room being its power source. The only way the message could have failed to get off the ship would have been if the antennas were out of whack or grounded, but according to witnesses, the meters in Radio II showed transmission from Radio I, leaving no serious doubt that the message was sent.³⁹

The whole process—from being hit to being sunk—seems to have taken 12 minutes. Charles McVay, like so many others, was sucked off the side of his ship by a sudden wave.⁴⁰ Giles McCoy, who was with a Marine detachment on the *Indianapolis*, remembers hearing the screams of those who were caught behind the hatches when they were ordered closed.⁴¹ Perhaps he comforted himself with the thought that they would be the

only ones to die—all of the rest would quickly be rescued. It was not to be.

Dorsal Fins and Crying Eyes

Unrespited, unpitied, unreprieved

-John Milton

“Swim away from the ship,” cried Harlan Twible to his fellow shipmates, “as fast as you can! Swim away!” Twible knew of the danger of being sucked underneath the waves, and he had an instinctive leadership quality that came out in rough moments. Surrounded by a group of men, he asked whether they possessed any floatable objects; they came up with two floater nets and three life rafts.⁴² A number of other survivors found themselves in groups as well. Jack Miner and Morgan Moseley were lucky enough to be in a large grouping of roughly 325 (a head count had been ordered). The group managed to locate three rafts, a few tins of Spam, some malted milk tablets and four containers of fresh water. It was not all that much, but it seemed even less adequate as the hours passed by and no rescue came. Particularly troubling to the men in the water was seeing planes pass overhead and realizing that the pilots had not seen them. One of them passed so close that Moseley could read the numbers on the tail.⁴³

Charles McVay, now a captain without a ship, managed to grab a potato crate as it floated by and was gratified to find something better quickly come his way: two rafts. After climbing aboard, he heard people calling for help and yelled back that he had a raft. Three men swam over and joined him, and McVay was additionally cheered when he discovered provisions, paddles, and signaling devices aboard the rafts. He rationed out the food and calmly chatted with his men as they waited for rescue. He even told a white lie about having seen an SOS message go off the ship so that they would feel better about their rescue chances.⁴⁴ It was probably better for McVay that he didn’t know, yet, that not one of the officers between him and No. 32 in his chain of command would be pulled from the water alive.⁴⁵

By the second day in the water, happy talk among the survivors began to cease. Some of the men began to speculate on the possibility that the Navy had simply not noticed the loss of their ship. The sun cast its harsh glare upon them all, leading to a swelling of faces and cracking of lips.⁴⁶ A number of men had become covered in reeking fuel oil when the Indianapolis was sunk—men who swallowed the stuff often vomited for hours⁴⁷—but those who were covered came to think of themselves as lucky: the oil protected them from the sun’s blistering rays. Other survivors, not so fortunate, developed saltwater enemas and severe sunburn.⁴⁸ And all of the survivors, covered in oil or not, found themselves assaulted by sunlight reflecting off the ubiquitous sea. Many came to suffer from “photophobia,” in which the corneas become sunburned and the eyes become hypersensitive to light. Simply shutting the eyes didn’t help: many survivors wrapped sheets of fabric around their eyes or held their arms in front of their faces for hours at a stretch.⁴⁹ The heat of the daylight was contrasted with the cold of the night, but both conditions were dangerous: while the sunlight might warm the first two feet or so of the water level, the water underneath remained cold, and many of the men began to suffer from hypothermia, which leads to dehydration.⁵⁰ Dehydration, meanwhile, causes the throat to swell up until the victim finds it truly difficult to breathe—and even then, every gasp of air makes the lungs rattle in a painful dance. The victim feels compelled to swallow over and over due to the lump in the throat, but each swallow is a painful exercise.⁵¹

Amidst these conditions—this is a terribly ironic twist—the men were literally floating in an ocean of completely undrinkable water, because of the salt content. Most of the men knew better than to drink it, but some simply could not resist the temptation and succumbed to thirsty gulps of poison. Hyponatremia—an excess of salt in the body—quickly developed, and most of these men died extremely painful deaths.⁵² Others came up with crackpot schemes for somehow diluting the salt from the water, perhaps by cupping the water and holding it up to the sun, or straining the ocean water through a hand-

kerchief.⁵³ One survivor discovered on his life raft a converter that was designed to make seawater potable, but his mental condition had deteriorated so badly that he simply could not follow the written instructions, and he threw away the device in disgust.⁵⁴ Survivor Giles McCoy, grateful for the onset of rain, took his rubber life belt and split it open to collect the raindrops, only to find that a powdery preservative inside the belt made the water as undrinkable as the sea.⁵⁵

By about the evening of the second day, men began to go delirious. Not a single plane had passed by all day, and gloomy feelings gave way to fantasies largely augmented by a lack of REM sleep.⁵⁶ The upside to this situation—and there is one—is that many of the men ceased to suffer in the everyday sense of the term: they became convinced, say, that the *Indianapolis* had not really sunk at all, and they indulged themselves in pleasant fantasies of being aboard their ship again. Some of the men made futile efforts to dive beneath the waves and join the party they had become convinced was occurring on the *Indianapolis* just below the surface of the water.⁵⁷ Some men came up with the bright idea of swimming to the island of Yap, which was 500 miles away.⁵⁸ Others considered swimming to Leyte. Still others swam around trying to keep everybody from going off and killing themselves in these crazy schemes, and died of exhaustion as a result.⁵⁹

Worst of all were the sharks. Survivors of the *Indianapolis* have related how they would glance down at the waves and see great schools of them milling about—a condition worsened by the conventional wisdom of the time, which recommended scaring sharks away by flailing about madly. We now know that this was probably the worst advice imaginable. Of the numerous stories about shark attacks, one sticks out rather vividly: Cozell Smith felt a shark pull him under the water by his left hand, trying to rip it out of its socket. Opening his eyes underwater, Smith flailed about with his free arm until he could feel the creature's nose, and then slid his hand around until he came to a soft spot, which he jabbed with all his might. It was probably the shark's eye, and Smith felt his middle finger sink

into the shark's flesh all the way down to the knuckle. The shark let him go.⁶⁰

Lieutenant Wilbur Gwinn almost killed a number of the survivors before finally saving their lives. Gwinn was looking downward while checking a defective antenna on his airplane when he noticed something that appeared like an oil slick. Thinking it was from a Japanese submarine, he opened his bomb bay doors and dove down for a closer look. As he was just about to drop a bomb into the sea, he noticed that people seemed to be floating in the water directly beneath him. Circling around, he conducted a head count and dropped down provisions. He also radioed for help.⁶¹ It had been 84 hours since the sinking of the *Indianapolis*. And the ordeal wasn't over yet.

Adrian Marks thought it had to be a joke. That or a false alarm. The news he had received was that a number of people were floating in the sea. When he arrived at around 2 p.m. in a PB5A seaplane, he quickly discovered that the situation was all too real. He pondered his possible courses of action: he could drop down some provisions and wait until more help arrived, or he could attempt to land his plane in the water and get these people out of the sea. Marks was thoroughly aware of the risks: he would be attempting to land his seaplane in 12-foot swells that had pulverized many a pilot before him; in addition, his model of seaplane contained 3 retractable wheels that made a successful landing even more uncertain. This kind of operation was so dangerous that he was officially forbidden to even attempt it; nevertheless, most of the survivors were obviously in extreme peril. He radioed a message to his base: "WILL ATTEMPT OPEN SEA LANDING." This was a notice, not a request.⁶² After landing successfully, Marks rescued a total of 56 people.⁶³

Over time, the ships began arriving: the *Madison*, the Ralph Talbot, Dufilho, Register, and a hospital ship called Tranquility.⁶⁴ The captain of the *Cecil J. Doyle*, W. Graham Claytor, happened to know somebody who was very close to Captain McVay. That person was Claytor's cousin Louise, the skipper's wife. When Claytor asked survivor Lewis Haynes, who was about to board his vessel, what ship the survivors were from,

the response was blunt: “You’re looking,” said Haynes, “at what’s left of the *Indianapolis*.” Haynes fainted. Claytor felt like joining him.⁶⁵

All of this activity was unknown to Captain McVay and his motley group of survivors; they were spotted relatively late in the expedition by the *USS Ringness*. Captain McVay, it was true, would soon be rescued from the sea. But a new breed of sharks began to circle.

Court-Martial

It is found good, from time to time, to kill one admiral to encourage the others.

-Voltaire

Admiral Nimitz wanted to get this over with quickly. A man of action, he had a Japanese invasion to plan, and so he hastily convened a court of inquiry to look into the sinking of the *USS Indianapolis*. One of the men who would judge the evidence involved was Vice Admiral George Murray. His subordinate, Captain Oliver Naquin, had failed to pass on information to Captain McVay that could have informed him of the danger he sailed into unawares.⁶⁶ In a normal case, such a judge would recuse himself from the proceedings. But this was not a normal case.⁶⁷

The problem for the Navy was simple. The arrivals of merchant vessels and naval auxiliaries were typically subject to a bewildering blizzard of regulations designed to ensure that such ships were located where they were supposed to be. But such rules did not apply for combat ships. It was even spelled out thus: “Arrival reports shall not be made for combatant ships.” The reasoning behind this was not hard to understand: nobody wanted to broadcast to the enemy the location of American ships.⁶⁸ So it was a reasonable inference that the nonarrivals of combatant ships were not to be reported. The buck stopped at one Lieutenant Stuart Gibson, who made exactly that assumption.⁶⁹ Bureaucratic snafus accumulated: a close reading of the evidence leaves doubt about such simple matters as who exactly

Captain McVay was supposed to be reporting to.⁷⁰ Nonarrivals at port were common: a ship that failed to show up could have been detained or diverted for any number of reasons. When the *Indianapolis* failed to appear at port, she was simply taken off the plotting board.⁷¹

Understandably, all of this made the Navy look rather bad. What to do about it? What would be done about it became clear when the Navy chose to announce the loss of the *Indianapolis* on August 14, 1945—the very day that Japan surrendered.⁷² The final report of the court of inquiry contained a hilarious array of illogical statements under the heading of “Opinions”: for example, the court agreed that Naquin had been correct to assume that the threat from submarines was “practically negligible.” If that were true, then Captain McVay would be blameless for having failed to zigzag, a conclusion the court did not draw.⁷³ The court also concluded that the *Indianapolis* had failed to send out a distress warning: a view flatly contradicted by witnesses.⁷⁴

On November 29, 1945, Captain McVay learned that he was to be court-martialed. He had expected this to happen.⁷⁵ It was certainly untrue that most people, even Navy higher-ups, had desired a court-martial: Admirals Nimitz and Spruance simply wanted a letter of reprimand, but were overruled by Admiral Ernest King.⁷⁶ The saying about King was that he was an even-tempered sort: always in a rage. He was an arrogant, difficult man, a bully and a lecher, with a firm belief in punishment that extended even to those who might not be guilty, since King believed such practices kept everybody else on their toes.⁷⁷ On November 10, 1945, King had written a missive expressing his belief that a court-martial should not be held; on the very same day, he wrote a note to Admiral C.P. Snyder supporting the idea of a court-martial.⁷⁸ The father of one sailor who perished on the *Indianapolis* was a good friend of President Harry Truman, and some scholars have speculated on whether he might have had some influence in making sure that McVay was punished.⁷⁹ At any rate, King ordered Admiral Charles P. Snyder, the Navy’s inspector general, to open an investigation into the case—but

then King insisted on conducting the court-martial before the report was completed.⁸⁰ Captain McVay's initial choice for counsel was denied, and the Navy instead appointed Captain John P. Cady to defend him, a man who had failed the bar examination and was not even particularly interested in being a lawyer.⁸¹ His counterpart for the prosecution was Captain Thomas J. Ryan, and the charges brought against McVay were twofold: he was charged with hazarding his ship through failure to zigzag, and for "failure to abandon ship in a timely manner."⁸² The second charge was patently absurd (even the Navy's official statements more or less conceded this), and was only added because McVay could have been immediately convicted, even without a court-martial, were the charges limited to a failure to zigzag.⁸³ This is because McVay flatly admitted that he had not been zigzagging, and the sinking of his ship meant that the official responsibility fell on his shoulders. However, there was a degree of public outcry over this case (*Time* magazine called it a "colossal blunder"⁸⁴) and the Navy had a definite interest in making the court-martial appear procedurally fair, even if only to the public at large. It probably says something about the Navy's official rules at this time that they could hold a skipper immediately responsible for hazarding his ship even if he had no reason whatsoever to believe that his vessel was in danger.

The evidence in the trial definitely appeared, at first glance, to be going against the Navy's position regarding McVay's culpability: survivors of the sinking flatly contradicted the idea that it had been a generally moonlit night, and they also made it clear that expecting McVay to order an effective "abandon ship" was silly, considering that communications were down and that sailors had been running around in chaos. Captain Ryan had grown so desperate that he even used his superior rank in an attempt to force survivor Giles McCoy into signing a statement stating that McVay had failed to abandon ship in a proper manner. When Ryan threatened him, McCoy simply responded that Ryan would be wise to set up a second court-martial because he wasn't affixing his signature to such an untrue document. Ryan backed down.⁸⁵ The Navy grew desperate in other ways as well:

it even called in Mochitsura Hashimoto, the commander of the Japanese submarine that had sunk the *Indianapolis*, and attempted to get him to testify against McVay. Hashimoto didn't play according to script, however: he testified that zigzagging procedure would have made no difference whatsoever in his ability to sink the *Indianapolis*,⁸⁶ a view later seconded by Captain Glynn Donaho, a submariner of the highest order who had won four Navy Crosses, two Silver Stars, and two Bronze Stars during the Second World War.⁸⁷ Hashimoto, over 50 years later, told a Japanese researcher that the translator in the case had repeatedly misinterpreted his words (Hashimoto knew enough English to recognize this), but that his objections had been brushed aside. Hashimoto also told the researcher of his opinion that the charges against McVay had been unjust and contrived.⁸⁸

It was all to no avail: on December 19, 1945, Captain Charles McVay was convicted of hazarding his ship through failure to zigzag by a jury that had been chosen by, and depended on promotions from, none other than Admiral Ernest King.⁸⁹ Admirals King and Nimitz both successfully recommended that the official sentence-loss of 100 promotion points in temporary rank and another 100 points in permanent rank-be remitted.⁹⁰ This was certainly no sweat off King's back: he had attained his primary objective, which was to place public blame for the sinking squarely on the shoulders of someone other than himself. For years afterwards, McVay would receive hate mail from the families of those who had perished, blaming him for the sinking and branding him a "murderer," among other epithets. Friends and family members noted that his personality had changed after the incident; having taken all the insults personally, McVay seemed to grow more distant and forlorn with each passing year. In later years his wife died and so did his favorite nephew, thus augmenting his sorrow. After receiving a particularly nasty letter in 1968, McVay dressed himself in his skipper's uniform, loaded his service revolver, walked outside onto his front porch, and fatally shot himself in the head.⁹¹ Like the burden carried by many an ancient mariner, the albatross of Charles McVay had

proven heavy indeed.

The survivors were horrified and pained by their captain's suicide, but they were mostly resigned to the idea that there was little they could do to clear his name. They had been vainly lobbying Congress and the Navy in attempts to exonerate their captain. As the years wore on, most of them figured that the Navy would win as they died off, gaining a victory through war of attrition. The exoneration of Charles McVay looked to be the most hopeless of lost causes.

Then Hunter Scott came along.

“Righting the course”: A Postscript⁹²

and a child shall lead them...

-Isaiah 11:6

It all started with a question. In 1996, an 11-year old boy in Pensacola, Florida, had been watching the movie *Jaws* with his father when the famous scene involving Captain Quint, a survivor of the *Indianapolis*, came up (the character is said to be partly based on *Indianapolis* survivor Bob Cause). The boy, Hunter Scott, asked his father if the story were true, and his father replied that he thought it was. Scott wondered aloud about the possibility of researching this story for a history fair project. Being a school administrator, Alan Scott found it only natural to tell his son that he could find out more about the story by going to the library and checking out a book. When Scott did so, and failed to find much information on the *Indianapolis*, he placed an ad in a local Navy paper, the *Gosport*, asking survivors to get in touch. Maurice Bell was the first survivor to contact Scott, and he soon sent questionnaires to other survivors asking them for their thoughts on both the sinking of the *Indianapolis* and the court-martial of her skipper. The returned questionnaires were unanimous in their conviction that Captain McVay had been unjustly tried, and some of them appeared to positively seethe with outrage over the conviction, even after the passage of more than 50 years. Scott, continuing to review evidence, concluded that a grievous wrong had been committed

against Captain McVay, and resolved to correct what he perceived as a thorough injustice. After being disqualified from the state history fair on a technicality, Scott contacted a friend of his parents and asked if he could display the project in that individual's office. That person was Representative Joe Scarborough of Pensacola, and the attendant publicity that derived from the story of a child trying to change history spread like wildfire, eventually earning Scott interviews on leading American news programs and getting his story published in newspapers in 18 countries. For the survivors of the *Indianapolis*, Hunter Scott was a gift from the P.R. gods.

Then Representative Scarborough came up with an interesting idea: Why not have Scott accompany a group of survivors to Washington, D.C., and introduce a bill designed to overturn the conviction? The idea seemed like a good one, and the son of Charles McVay persuaded an old friend of his, Mike Monroney, to join the cause. Monroney had once been a sailor on the *Indianapolis* and had departed before the ship went down; still, he had been thoroughly outraged by the treatment of Captain McVay during the court-martial and was more than ready to do something about it. Furthermore, he brought some additional firepower to the cause through his lobbying experience: he was widely viewed as one of the 100 most influential people on the national political scene.

Hunter Scott additionally gained the assistance of some important legislative allies, including Senator Daniel Inouye of Hawaii, Representative Dick Armev of Texas, Senator Bob Smith of New Hampshire, and Representative Newt Gingrich of Georgia (one newspaper wrote that Gingrich had been “smitten” by Scott: he would later invite Hunter to “shadow” him for a week). Representative Julia Carson of Indianapolis, Indiana, offered her assistance and encouragement, and once whisked Scott past a questioning sergeant-at-arms at the door of the House by telling him that Hunter was her son, even though Carson is a black woman and Scott is a Caucasian. Senator Inouye, buoyed by the news of a House bill regarding Captain McVay, attempted to introduce a companion bill in the Senate but was told that such

a proceeding would violate Senate rules. With the termination of the 105th Congress, Hunter Scott headed home for Pensacola and conferred with his allies regarding a new idea: introducing the bill as a joint resolution. This bill would be strongly sustained by original research that Hunter Scott had conducted, including obtaining definitive proof that an SOS message had indeed gotten off the *Indianapolis* and been received (for various reasons, nothing was done to answer the distress call), and new information he had unearthed documenting that the Navy had known of Japanese submarines along the Peddie Route, and had thus knowingly sent Captain McVay into a dangerous situation without equipping him for a threat or even informing him of possible harm. Scott even found testimony from one Russell Hetz, additionally telling him that an officer had come aboard the landing craft Hetz served on and ripped out a section of the logbook that contained possible evidence of negligence, due to its record of an SOS reception.

On September 14, 1999, the Senate Armed Services Committee conducted a hearing in which Hunter Scott and the survivors could face off against representatives of the Navy. Although the Navy representatives had been through a “murder board” before the hearing, having all sorts of negative questions thrown at them, Hunter Scott and the survivors achieved a dramatic victory. Not only did the Navy look particularly weak in contending that Captain McVay had been court-martialed not for losing his ship but for putting it in jeopardy—“We wouldn’t know,” replied a straight-faced Navy spokesman when asked if McVay would have been tried had he sailed safely into Leyte—but the Navy also appeared intransigent and stubborn in arguing so vehemently against exonerating a captain over an incident that had occurred such a long time ago. Senator John Warner of Virginia started out staunchly on the Navy’s side and ended up agreeing with the *Indianapolis* survivors: he admitted that the testimony presented on that day had “righted his course.” The joint resolution—attached, in a stroke of genius, to the official Navy appropriations bill—passed in October of 2000. It was signed by President Clinton.

On July 11, 2002, Secretary Gordon England of the Navy, bowing to public pressure, sent a letter to Senator Bob Smith informing him that, although Secretary England could not legally overturn a court-martial or delete the conviction against McVay, he could insert a copy of the recently passed joint resolution into Captain McVay’s file. This would address the perception that Captain McVay had been responsible for the sinking of the *Indianapolis* by explicitly stating otherwise, and furthermore branding his court-martial and conviction as “morally unsustainable.”

More than 50 years after the sinking, the saga of the *Indianapolis* was over.

¹ Information on the early history of the USS *Indianapolis* can be found at the following website: <http://www.ussindianapolis.org/pfinnstory.htm>

² Ibid.

³ Doug Stanton. *In Harm’s Way: The Sinking of the USS Indianapolis and the Extraordinary Story of its Survivors*. (New York: St. Martin’s Paperbacks, 2002) 24-25.

⁴ Pete Nelson. *Left for Dead: A Young Man’s Search for Justice for the USS Indianapolis*. (New York: Delacorte Press, 2002) 24-25.

⁵ Nelson, 26-27; Stanton, 52-53.

⁶ Stanton, 53.

⁷ Nelson, 27.

⁸ Stanton, 19.

⁹ Ibid., Nelson, 31.

¹⁰ Richard F. Newcomb. *Abandon Ship!: The Saga of the U.S.S. Indianapolis, the Navy's Greatest Sea Disaster*. (New York: HarperCollins, 2000) 18-19.

¹¹ Raymond B. Lech. *The Tragic Fate of the U.S.S. Indianapolis: The U.S. Navy's Worst Disaster at Sea*. (New York: Cooper Square Press, 2001), 3; Nelson, 31.

¹² Nelson, 38-39.

¹³ Ibid., 39-40.

¹⁴ Lech, 7-8.

¹⁵ Ibid., 8-9.

¹⁶ Dan Kurzman. *Fatal Voyage: The Sinking of the U.S.S. Indianapolis*. (New York: Atheneum Publishing, 2001) 48-50; Newcomb, 37-38; Nelson, 40.

¹⁷ Lech, 17.

¹⁸ Nelson, 40-41.

¹⁹ Ibid.

²⁰ Lech, 19-20.

²¹ 41-42.

²² Lech, Tragic Fate, 21.

²³ Ibid., 23-24.

²⁴ Ibid.

²⁵ Ibid., 25-27.

²⁶ Kurzman, 58-59.

²⁷ Ibid., 59; Lech, 33.

²⁸ Lech, 33.

²⁹ Nelson, 45; Lech, 32-33; Kurzman, 62; Newcomb, 49.

³⁰ Newcomb, 49.

³¹ Lech, 35-39.

³² Newcomb, 65.

³³ Stanton, 99.

³⁴ Ibid., 100; Newcomb, 66.

³⁵ Newcomb, 66; Kurzman, 89-90.

³⁶ Ibid., 66-67.

³⁷ Kurzman, 90; Lech, 45.

³⁸ Lech, 47.

³⁹ Ibid., 60-64.

⁴⁰ Ibid., 65.

⁴¹ Nelson, 63.

⁴² Ibid., 62.

⁴³ Ibid., 67-70.

⁴⁴ Kurzman, 127-134.

⁴⁵ Newcomb, *Abandon Ship!*, 117.

⁴⁶ Ibid., 125.

⁴⁷ Ibid., 111.

⁴⁸ Nelson, 75.

⁴⁹ Ibid.

⁵⁰ Ibid., 76.

⁵¹ Ibid., 77.

⁵² Ibid., 78.

⁵³ Kurzman, 143; Newcomb, 125.

⁵⁴ Kurzman, 191.

⁵⁵ Ibid., 196.

- ⁵⁶ Nelson, 79.
- ⁵⁷ Newcomb, 126-128.
- ⁵⁸ Kurzman, 159, 171.
- ⁵⁹ Newcomb, 129.
- ⁶⁰ Nelson, 70-71.
- ⁶¹ Kurzman, 170-173.
- ⁶² Ibid., 181-182; Nelson, 91-93.
- ⁶³ Nelson, 93.
- ⁶⁴ Stanton, 233.
- ⁶⁵ Kurzman, 200-201
- ⁶⁶ Lech, 165.
- ⁶⁷ Nelson, 111.
- ⁶⁸ Newcomb, 101-103
- ⁶⁹ Lech, 170.
- ⁷⁰ Ibid., 103-104
- ⁷¹ Ibid.
- ⁷² Lech, 167.
- ⁷³ Ibid., 171-173.
- ⁷⁴ Ibid., 172. See Lech 76-79 for 4 separate instances of possible message reception that conflict with what the Navy was offering as an interpretation of events.
- ⁷⁵ Stanton, 247-248.
- ⁷⁶ Ibid., 249.
- ⁷⁷ Nelson, 122.
- ⁷⁸ Lech, 179.
- ⁷⁹ Nelson, 121-122.

- ⁸⁰ Ibid., 123-124.
- ⁸¹ Kurzman, 254-255.
- ⁸² Stanton, 249-250.
- ⁸³ Ibid., 250; Nelson, 133-134.
- ⁸⁴ Stanton, 251.
- ⁸⁵ Nelson, 128.
- ⁸⁶ Stanton, 253.
- ⁸⁷ Newcomb, 239-244.
- ⁸⁸ Nelson, 161.
- ⁸⁹ Hunter Scott, a teenage boy who likely possesses more written data and historical artifacts concerning the USS Indianapolis than anybody else in the world, mentioned this fascinating tidbit during a phone interview I conducted with him on December 8, 2002; it appears in his article “Timeline to Justice” from Naval History, July-August 1998. This article was once available on the Internet, but has since been removed.
- ⁹⁰ Stanton, 254.
- ⁹¹ Ibid., 259-261.
- ⁹² The material in this section is based upon both Hunter Scott’s 10-page introduction to the book *Left for Dead* by Pete Nelson, and the rest of the book itself. It also draws heavily from the author’s phone interview with Mr. Scott on 12-8-02. Hunter Scott was interviewed about his research a number of times, and much of this valuable information can be found at the following sites on the Internet. I include also a statement made by Indianapolis survivor Paul J. Murphy regarding the court-martial of Captain McVay that has proven to be very helpful. I would recommend this piece to absolutely anybody wishing to find out more about both the Indianapolis and the court-martial of Charles McVay.
- Paul J. Murphy’s statement:

Bibliography

Books:

Kurzman, Dan. *Fatal Voyage: The Sinking of the U.S.S. Indianapolis*. (New York: Atheneum Publishing, 2001).

Raymond B. Lech. *The Tragic Fate of the U.S.S. Indianapolis: The U.S. Navy's Worst Disaster at Sea*. (New York: Cooper Square Press, 2001).

Nelson, Pete. *Left for Dead: A Young Man's Search for Justice for the USS Indianapolis*. (New York: Delacorte Press, 2002)

Newcomb, Richard F. *Abandon Ship!: The Saga of the U.S.S. Indianapolis, the Navy's Greatest Sea Disaster*. (New York: HarperCollins, 2000).

Stanton, Doug. *In Harm's Way: The Sinking of the USS Indianapolis and the Extraordinary Story of its Survivors*. (New York: St. Martin's Paperbacks, 2002).

Internet Sources:

Early information on USS Indianapolis:

<http://www.ussindianapolis.org/pfinnstory.htm>

Paul J. Murphy's statement:

[http://www.library.com/s/edumark/getdoc.cgi?id=245523780x127y56099w0&OIDS=0Q001D001&Form=RL&pubname=Congressional Testimony&puburl=http~C~~S~~S~www.fdch.com&querydocid=29342224@urn:bigchalk:US;Lib&dtype=0~0&dinst=0](http://www.library.com/s/edumark/getdoc.cgi?id=245523780x127y56099w0&OIDS=0Q001D001&Form=RL&pubname=Congressional+Testimony&puburl=http~C~~S~~S~www.fdch.com&querydocid=29342224@urn:bigchalk:US;Lib&dtype=0~0&dinst=0)

20/20 with Hunter Scott:

<http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=>

[0Q001D001&Form=RL&pubname=ABC 20~S~20&puburl=http~C~~S~~S~www.fdch.com&querydocid=28904006@urn:bigchalk:US;Lib&dtype=0~0&dinst=0](http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D001&Form=RL&pubname=ABC+20~S~20&puburl=http~C~~S~~S~www.fdch.com&querydocid=28904006@urn:bigchalk:US;Lib&dtype=0~0&dinst=0)

ABC World News Sunday:

[http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D003&Form=RL&pubname=ABC World News Sunday&puburl=http~C~~S~~S~www.fdch.com&querydocid=28707596@urn:bigchalk:US;Lib&dtype=0~0&dinst=0](http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D003&Form=RL&pubname=ABC+World+News+Sunday&puburl=http~C~~S~~S~www.fdch.com&querydocid=28707596@urn:bigchalk:US;Lib&dtype=0~0&dinst=0)

ABC Good Morning America:

[http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D000&Form=RL&pubname=ABC Good Morning America&puburl=http~C~~S~~S~www.fdch.com&querydocid=28712880@urn:bigchalk:US;Lib&dtype=0~0&dinst=0](http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D000&Form=RL&pubname=ABC+Good+Morning+America&puburl=http~C~~S~~S~www.fdch.com&querydocid=28712880@urn:bigchalk:US;Lib&dtype=0~0&dinst=0)

ABC Good Morning America (update on Hunter Scott):

[http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D002&Form=RL&pubname=ABC Good Morning America&puburl=http~C~~S~~S~www.fdch.com&querydocid=28847070@urn:bigchalk:US;Lib&dtype=0~0&dinst=0](http://www.library.com/s/edumark/getdoc.cgi?id=245524759x127y59135w0&OIDS=0Q001D002&Form=RL&pubname=ABC+Good+Morning+America&puburl=http~C~~S~~S~www.fdch.com&querydocid=28847070@urn:bigchalk:US;Lib&dtype=0~0&dinst=0)

Interviews: Author (telephone) interview with Mr. Hunter Scott, 12-8-02.

Democratic Republic of the Congo

Roy M. Zach

For Professor Randy Bertolas's Political Geography class

Deep within the heart of Africa—from the shimmering beaches on the Atlantic, to the deep and dense jungles, across the high plateaus and savannahs, into the Great Lakes region, and up to the peaks of majestic mountains—there lies its third largest country. Many nations of people coexist within its boundaries—sometimes in peace, but very often in bloody and bitter civil war. Its abundant resources and riches have so long been the prey of predatorial colonizing conquerors that it remains to be seen whether this wounded, tattered State can overcome the obstacles to its overall well-being. The victim of the slave trade, conquests, civil wars, and disastrous epidemics, it has a crippling legacy. Can it cast off the burdens of its recent terrifying past? Can it construct, refine, and perpetuate its precious sovereignty in a competitive, instable, and frequently heartless world? Assuming it can, one believes that the Democratic Republic of the Congo has the potential to become a respected and leading country of the global world.

{Format Note: This overview of the Democratic Republic of the Congo will be examined in four sections. Paper A describes the Physical State consisting of location, boundaries, topography, climate, and vegetation. Paper B investigates the People inclusive of tribal groups, languages, religions, government, social conflict, and other demographics. Paper C categorizes the abundant Resources of this bountiful entity, along with its current infrastructure, economy, and available products. Paper D focuses first on the complex interconnections of the Physical State, People, and Resources; secondly, it reflects on the social instabilities of the past and present; and finally, it discusses the potential future of the Democratic Republic of the Congo. }

Paper A: The Physical State:

Ranking as Africa's 3rd largest country in terms of land

area, the Democratic Republic of the Congo is also the Earth's 12th largest country. Comprising 905,365 square miles, it is almost exactly 1/4 the size of the United States of America. In terms of latitude and longitude, it ranges from approximately 5 degrees North to 13 degrees South and 12 degrees East to 31 degrees East at its most distant points. The Democratic Republic of the Congo lies mostly within the Congo River drainage basin. On its western side, it shoulders the Atlantic Ocean for 25 miles; its eastern side mingles with the mountains, and its border crosses through the centers of lakes Albert, Edward, Kivu, Tanganyika, and Mweru.¹

The Democratic Republic of the Congo is an example of a prorupt shaped state, with two important projections from its otherwise compact shaped territory. The west proruption gives the country vital access to the Atlantic Ocean, giving it extensively better opportunities than land-locked states. The vibrant national capital of Kinshasa lies on the south bank of the Congo River within this proruption. And across the river on the north bank lays Brazzaville, the national capital of the Republic of Congo. The southeast proruption is critical to the country's economy, for here exists the rich mineral wealth that is so dear to its revenue production. Unfortunately, the immense Congo Basin separates the west and southeast proruptions—creating some difficulty for administration, communication, transportation, and trade.³

The Congo River, with a length of 2900 miles, is the second longest in Africa and the fifth longest on Earth. In terms of water discharge, it claims second place in the world, lagging only behind the Amazon River of South America. It rises initially as the Chambeshi River 5760 feet in elevation in the highlands of northeast Zambia. Major tributaries increasing its flow are the Ubangi, Aruwimi, Lomami, and Kasai, among others. The drainage area of the river system covers an extraordinary 1,335,000 square miles. The Congo Basin receives approximately 60 inches of rainfall annually, 1/4 of which drains down to the Atlantic, and creates an average discharge of 1,450,000 cubic feet per second at the Congo River's mouth. The basin includes

virtually all of the territory of the Democratic Republic of the Congo, most of the Republic of the Congo and the Central African Republic, and parts of Zambia, Angola, Cameroon, and Tanzania. The river claims the largest extent of Africa's navigable waterways, but 32 cataracts on its lower course (between the Malebo Pool and the port city of Matadi) make it impenetrable to ships from the Atlantic Ocean. Also, many cataracts exist on its tributaries outside of the cuvette, or "shallow bowl," of the central basin. The cuvette is a depression of Quaternary alluvial deposits on thick sediments of continental origin, which are typified by sands and sandstones. ^{4,5}

The Congo River divides into three major segments: upper, middle, and lower. Confluences, lakes, and waterfalls/rapids characterize the upper Congo. Lakes Kivu, Tanganyika, and Mweru are connected and drained by the Congo's tributaries. The middle Congo is a 1000-mile stretch of steady flowing, navigable waterway flowing from just upstream of Kisangani to the Malebo Pool near Kinshasa. As the flow broadens, islands can be found within the river. Flooding occurs naturally along both banks, near the areas where inundated rain swamps are already common. The lower Congo begins at the 15- by 17-mile-wide Malebo Pool, races down the perilous cataracts, and eases into its estuary near Matadi. This estuary extends 83 miles to the branching mouth that mingles with the Atlantic. Despite the Congo River's large discharge volume, sediment dropping creates a shallow depth at its mouth, which requires occasional dredging to deepen the channels for shipping to and from Matadi.⁴

The stunning lakes on the eastern boundaries of the Democratic Republic of the Congo are cradled in the extensive East African Rift System—part of a series of massive fissures in the Earth's crust running from the Zambezi River valley, across eastern and northeastern Africa, through the Red Sea, and dissipating in the Jordan River valley of southwest Asia. Lake Edward (at 3000 feet above sea level) and Lake Albert (at 2000 feet) drain to the Nile River. The Virunga Mountains separate the drainage basins of the Nile and Congo rivers. Nyamulagira and Nyiragongo are two somewhat recently active volcanoes

that could potentially alter the nearby terrain. The rugged Ruzizi River drains scenic Lake Kivu and drops 2200 feet into Lake Tanganyika. Second only to Lake Baikal of Siberia in water depth, Tanganyika's depth is 4710 feet—2400 feet below sea level at its bottom. Overflow from this massive body of water eventually meanders through thick, hindering vegetation into tributaries of the Congo River. ⁴

There are three highly distinctive land regions in the Democratic Republic of the Congo: tropical rain forests, savannahs, and highlands. The majority of the north is blanketed with a vast variety of trees and other lush plants; these are so dense and vigilant that sunlight rarely reaches the forest floor. The north-central plateau, which the middle section of the Congo River traverses, averages about 1000 feet in elevation and is covered with this equatorial forest and several swamps. The rainforest's climate is hot and humid year-round; daytime temperatures average roughly 90 degrees Fahrenheit, with average annual rainfall of 80 inches from frequently drenching thunderstorms. The savannahs cover much of the south, and also a small strip north of the rainforests. Growing upon them are a variety of grasses, small groups of trees, and some forests in the valleys. Highland plateaus in the south average about 3000 feet in elevation. Daytime temperatures average a moderate 75 degrees Fahrenheit, and an annual average of about 37 inches of rain persists, although there is little or no rain for a few months of the dry season. The highlands rise prominently along the eastern and southeastern borders of the country. Lake Mweru is found in the southeast portion of the country in the majestic Mitumba Mountains. Plant life varies appropriately with elevation. Daytime temperatures are a mild 70 degrees Fahrenheit, with a moist 48 inches of annual rainfall. In the Ruwenzori mountain range in the northeast, the country's highest point is found at Margherita Peak, which is 16,763 feet above sea level. ^{5,6}

North of the equator, the wet season runs from April to October, and the dry season from December to February. South of the equator, the wet season is from November to March, and the dry season from April to October. ⁹

Land use in the Democratic Republic of the Congo is generally as follows: 77% is forest and woodland, 7% is permanent pastures, 3% is arable land, virtually none exists as permanent cropland, and 13% is miscellaneous or not definable to these other categories. Occasionally, drought falls across the lands in the southern portions of the country, and the eastern edge has some volcanic activity.⁹

The soils of the Democratic Republic of the Congo are classified predominantly as: red-brown lateritic, red tropical lateritic, swamp and alluvium. Also, mature lateritic and weakly leached soils are in a few areas. The soils are generally yellow, brown, or red colored. Iron oxides from chemical weathering give the red shade. “Laterite” soils are tropical soils with large concentrations of iron and aluminum sesquioxides, which are insoluble compounds. The climate of the region encourages the mass leaching of soluble compounds to lower layers, thus leaving the insoluble compounds to form a hard pan at or just below the ground surface. Most tropical soils in this region are in varying stages of laterization.⁴

Besides being richly diverse in vegetation, the country has a multitude of fascinating and unique animal species. In the rainforests and otherwise wooded areas can be found baboons, chimpanzees, gorillas, and many monkeys. Antelopes, rhinoceroses, and zebras graze the open areas, while leopards and lions stalk them. Crocodiles and hippopotamuses live in and around the water-saturated areas. Okapi, an animal related to the giraffe, can be found in the forests. It can be found only in the Congo and has become a national symbol.⁴

The nation shares a border with nine other countries, and one can be assured that disputes may break out. Angola, Zambia, the United Republic of Tanzania, Burundi, Rwanda, Uganda, Sudan, the Central African Republic, and the Republic of the Congo are the Democratic Republic of the Congo’s neighbors. The Congo River is largely the border between the Democratic Republic of the Congo and the Republic of the Congo; unfortunately, very little of the border is set or measured in any way. But considering even more dramatic issues, we will soon

explore these borders in more depth, and question what implications they have for the people of this fascinating region of the Earth. Also, we will soon examine the history and development of this country, and begin to comprehend what that has meant for the present, and the future.

Paper B: The People

A brief historical overview is necessary for comprehending the demographic composition of this diverse region of Africa. Numerous tribes have always inhabited this exotic region, and with great population densities in many regions, tension and rivalry have always been factors to consider. When this potpourri of different ethnicities, languages, indigenous beliefs, cultures, and traditions was added to eventual European territory grabs and boundary making, it is evident why so much conflict persists yet today—and will, for some time.

The original indigenous inhabitants were likely Pygmies, who settled in small groups in equatorial forests of the north and northeast. Near the end of the 1st millennium B.C., a few Bantu-speaking people immigrated from the northwest (now Nigeria and Cameroon) and settled in the savannas of the south. With their iron technology and agricultural expertise, the Bantu-speakers settled other parts of the Congo and Africa. They developed new, related languages; and from 700 A.D. they mined the copper deposits of southern Katanga, and traded widely with other peoples. By 1000 A.D., they settled most of the Congo, thereby reducing the Pygmies’ areas of occupation. The Bantu gradually emerged into states, some complex and impressive. Generally, a monarch held great power but was checked by a council of high civil servants and elders. Notable kingdoms included: Kongo (14th century—in northern Angola & far western Congo), Luba (16th century—around the Kisale & Upemba lakes in central Katanga), Lunda (15th century—of Mwata Yamo, in southwestern Congo), Kuba (17th century—of the Shongo people, around Kasai & Sankuru Rivers in southern Congo), Lunda (18th century—of Mwata Kazembe, near the Luapula River in southeastern Congo).⁶

In 1482, a Portuguese navigator named Diogo Cao reached the Congo River mouth and sailed a little upstream. Thereafter, the Portuguese established some ties with the Kongo kingdom, but extensive internal penetration was minimal until the late 18th century, when African and mulatto traders sponsored by the Portuguese traveled inland to the kingdom of Mwata Kazembe.⁶ However, it is well-noted that representatives of the Kongo kingdom visited Portugal and the Vatican City in the late 1400s. Being extraordinarily impressed, the Kongo kingdom adopted Roman Catholicism as its religion. Also, in the 1500s, Portugal began taking slaves—many bought from leaders of the Kongo kingdom—and other European powers began following suit. Unfortunately, hundreds of thousands of people were taken to become slaves—mostly in the recently established colonies in North and South America.⁵

In the mid-19th century, the eastern Congo was penetrated by Arab, Swahili, and Nyamwezi traders whose interests were the exchange of merchandise, along with slave and ivory raiding. In 1856, Msiri, a Nyamwezi, established strong control near (and at the expense of) Mwata Kazembe's kingdom, but he was killed in 1891 by Belgians. From around 1860-1890, Muhammad bin Hamad (Tippu Tib), a Swahili Arab trader (also part Nyamwezi), ruled a good portion of eastern Congo northwest of Lake Tanganyika. But overall, the Congo region had established no large-scale political unity before the European territory grab, and it has been obviously apparent ever since.⁶

Reigning from 1865-1909, King Leopold of Belgium believed that his country needed colonies to ensure prosperity. Thinking Belgian citizens would not support colonization attempts, he privately set about his work. In 1878, Leopold engaged Henry M. Stanley, who had explored the Congo River region from 1874-1877, to establish royal authority in the Congo Basin. From 1879-1884, Stanley founded numerous stations along the middle Congo River and signed treaties with various African rulers, supposedly giving Leopold sovereignty in their areas. European powers recognized King Leopold's claims to the Congo at the Conference of Berlin (1884-85). In 1885, at a

ceremony in Banana, he proclaimed himself head of the Congo Free State. The proclaimed boundaries generally resembled the current Democratic Republic of the Congo's territory, although it took the king until the mid-1890's to gain firm control over all regions. Leopold took out loans from the Belgian parliament to develop the Congo.⁶

In 1908, due to reports of the cruel mistreatment of Africans by King Leopold's developing concessionaire companies, the Belgian parliament exercised its right to annex the territory—naming it the Belgian Congo. The worst excesses of mistreatment eventually diminished over time. European investment led to the gradual development of railroads, transportation facilities, plantations, and mining operations. Europeans did the managing; Africans did the manual labor.⁶

Christian missionaries (especially Roman Catholics) were vigorous recruiters of any potential new converts, and they were largely responsible for raising the educational level of the Congolese and for improving medical services. Few Congolese became educated beyond primary school until the mid-1950s, whereupon two universities were established. Of note is Simon Kimbangu, who was educated by Protestant missionaries, only to establish himself as a prophet and healer. In 1921, the Belgian colonial government jailed him, as it feared his movement could undermine its authority. The movement was outlawed, but it continued secretly and became increasingly anti-European.⁶

This early history will enable us to better understand the current demographics of the Democratic Republic of the Congo. Many intriguing legacies have been left by the ancient and more recent past. (We will examine the Independence Movement of the 1950's, the gaining of independence, and other recent issues much more thoroughly in the Ability to Function section of this overall paper.) Now, we will break down the numbers and statistics.

The Democratic Republic of the Congo has an incredibly diverse population of 55,225,478 people--giving it an average population density of about 61 people per square mile. There

are over 200 different African ethnic groups represented here, of which the majority are Bantu. The four major tribes include the Kongo, Luba, Mongo (all Bantu), and the Mangbetu-Azande (Hamitic); these account for almost 45% of the total population. About 200 different languages are also spoken, but the main ones are French (the official language), Lingala (a lingua franca trade language), Kingwana, Kikongo, and Tshiluba. The literacy rate (being defined as anyone age 15 and over who can read and write French, Lingala, Kingwana, or Tshiluba) is 77.3% for the total population--86.6% for males and 67.7% for females. Major religions (and percentages of total population) are: Roman Catholic (50%), Protestant (20%), Kimbanguist (10%), Muslim (10%), and other syncretic sects and indigenous beliefs (10%).⁹

The population growth rate is currently at 2.79%, the birth rate is 45.55 per 1000, the death rate is 14.93 per 1000, and the net migration rate is -2.75 per 1000. The infant mortality rate is an atrocious 98.05 deaths per 1000 live births. Life expectancy is 49.13 years average for the total population—47.19 for males, and 51.13 for females. The total fertility rate is 6.77 children born per woman. The HIV/AIDS adult prevalence rate is 5.07%, predicting about 1.1 million people living with this startling disease. The 1999 estimates are that 95,000 people succumb to this plague annually in the Congo. Despite this, the population is still projected to grow in the future.⁹

Besides AIDS, common ravaging diseases in the region include: malaria, leprosy, gastroenteritis, tuberculosis, schistosomiasis, and sleeping sickness; aggravating these is the prevalence of widespread and severe malnutrition that wreaks tremendous havoc with the population. Considering the lack or inadequacy of hospitals and clinics, as well as shortages of medical personnel, the problems abound.⁵

The Democratic Republic of the Congo offers six years of primary school and six years of secondary school. There are three universities, located in Kinshasa, Kisangani, and Lubumbashi. Only about half of children ages 6-11 attend primary school, and a small percentage of these advance to sec-

ondary school.⁵

Traditional culture is evident in pottery, weaving of raffia, ceremonial dress and costumes, songs, and dancing styles. The Congolese boast a newly popular music, with traditional rhythms being artfully combined with various instruments from other cultures and countries. The appeal of this flavorful music is becoming increasingly enjoyed across much of Africa. Traditional items such as masks, figurines, and stone- and nail-studded statues are widely prominent.⁵

The Democratic Republic of the Congo is a dictatorship, although it is potentially going to evolve into a representative form of government. Kinshasa is the federal capital, as its own special district. There are 10 provinces. They are: Bandundu, Bas-Congo, Equateur, Kasai-Occidental, Kasai-Oriental, Katanga, Maniema, Nord-Kivu, Orientale, and Sud-Kivu. Independence was gained June 30, 1960, from Belgium. A 300-member Transitional Constituent Assembly was established in August 2000 to be a legislative branch by former dictator Laurent Kabila. The Supreme Court heads the judicial branch, and the legal system is modeled somewhat after the Belgian civil law system and tribal law. Suffrage begins at 18 years of age and is universal and compulsory, although it's difficult to believe that this has had much effect on the politics of the country. The original Constitution was set in place June 24, 1967, and has undergone amendment and revision since. However, recent inter-Congolese dialogue focuses on a new and better Constitution as one of its goals.⁹

The internal problems of a state can give it enough problems—whether tribal confrontation, epidemics, lack of cohesion, and so forth—but problems overflowing from its neighboring countries can really wreak havoc in its affairs. After examining the resources, economy, and products of the Democratic Republic of the Congo, we will then further analyze the region, regional conflict spillovers, and the ability of the state to function after all else is considered.

Paper C: The Resources

The large expanse of territory within the Democratic Republic of the Congo's borders allows for some considerable variation in topography and land features; and, of course, this creates a panorama of different lifestyles—as evidenced by the unique and diverse inhabitants. The natural vegetation of the region provides various foods, the rivers contain fish, wild animals roam the jungles and savannas, there is a small amount of arable land, and there is an especially abundant supply of minerals—particularly in the Katanga region. Therefore, the country has a lot going for it in the way of natural products and potential development. However, the enormous diversity between competing tribes, the long-standing weak internal ties among the peoples and within the government, and the catastrophic spillovers of violence from tribal warfare in neighboring countries has severely stunted the Democratic Republic of the Congo's economic and political stability. This State has the potential to be self-sufficient, but not as long as chaos persists.

Roughly 3% of the land is suitable for agriculture. Cash crops include cocoa, coffee, cotton, palm oil, rubber, sugar, and tea. The typical food crops are bananas, cassava, corn, fruits, legumes, manioc, peanuts, plantains, and root crops. Only about 110 square kilometers of land is irrigated within this country's immense territory—likely because most of this region receives adequate (or excessive) rainfall. Approximately 7% of the land is suitable for pasturing domesticated animals. Forest and woodland, which provides beneficial timber products, accounts for the bulk of the Congo's territory—77% of the total. The remaining 13% has either miscellaneous uses or no use at all.^{12,9}

The Democratic Republic of the Congo is blessed generously with various mineral resources. Among the most common are coal, cobalt, columbium (niobium), tantalum (locally known as “coltan”), copper, diamonds, germanium, gold, manganese, petroleum, tin, uranium, and zinc.¹³

Little exists for domestic privately owned businesses in the Congo when it comes to mineral extraction and refining. Rather, the government exercises majority—and often total—ownership over these companies. La Generale des Carrieres et

des Mines (Gecamines), Societe Miniere de Bakwanga (MIBA), SOMINIKI, Office des Mines d'Or de Kilo-Moto (Okimo), l'Enterprise Generale Malta Forrest SPRL, Societe Miniere de Kabolela et de Kipese (SMKK), Societe Aurifere du Kivu et du Maniema S.A.R.L. (Sakima), Enterprise Miniere de Kisenge-Manganese, and Societe Miniere du Congo S.A.R.L. (Somico) are among the local and/or government owned mining and extraction industries.¹³

But due to the rapid deterioration of mining, transport, and refining equipment, the government and the tightly controlled local companies have increased joint ventures with large international corporations. The copper and cobalt extractors and processors have teamed-up with such partners as OM Group, Inc. (OMG) of the United States, First Quantum Minerals Ltd. of Canada, Mopani Copper Mines PLC of Zambia, Anvil Mining NL of Australia, Tenke Mining Corp. (TMC) of Canada, BHP World Exploration Inc. of Australia, Phelps Dodge Corp. of the United States, Melkoir Resources Inc. of Canada, International Panorama Resources Corp. (IPR) of Canada, and American Mineral Fields Inc. (AMF) of the United States. Partnerships for gold include Banro Resource Corp. of Canada, AngloGold Ltd. of South Africa, Barrick Gold Corp. of Canada, and Ashanti Goldfields Co. Ltd. of Ghana. Partnerships for manganese are with Cluff Mining PLC of the United Kingdom and BCK Manganese Co. of Belgium. Zinc mining partnerships include Zinc Corp. of South Africa (Zincor). Diamond partnerships are with International Diamond Industries of Israel. Congo Gulf Oil Co. is owned by Chevron Corp. of the United States—50%, Teikoku Oil Co. Ltd. of Japan—32.3%, and Unocal Corp. of the United States—17.7%.¹³

During the year 2000, the world market price for tantalum temporarily rose from \$30 per pound to \$300 per pound, which renewed interest in mining columbium-tantalum ore in the North Kivu province. Mostly, tantalum is refined into a capacitor-grade metal powder for use in the electronics industry. Highly developed countries have an unquenchable desire for these capacitors for use in cellular phones, pagers, personal comput-

ers, and automotive electronics.¹³

This vast quantity of partnerships with the international corporations indicates that the Democratic Republic of the Congo, despite its rich mineral resources, needs desperate assistance in development and progress. Vast and intense society-wide changes need to be implemented if this country is to regain any semblance of independence. Also, despite its riches, this country trades very little compared to a large part of the world—especially in “value-added” products. The current civil strife is draining away the benefits from what trade they do maintain. The Democratic Republic of the Congo is like a wounded body, slowly but steadily losing its precious nutrient-rich blood.

Industry in the Congo generally seeks first to meet the needs of its own people, and next to upgrade some of its mined minerals and cultivated agricultural products. Consumer products are one of the main bases; these take the form of textiles, plastics, footwear, cigarettes, and metal products. Food processing and beverages are also prominent. Cement and timber processing are rising with the demand. The trade in processed and unprocessed minerals is obviously important, and one would expect the manufacturing and refining of these valuables to increase once again—when the conflicts settle down, anyway.¹²

Exports in 2001 were around \$1 billion. Products exported in large quantities are diamonds, cobalt, copper, coffee, and petroleum. The typical export partners include Belgium, France, Germany, Italy, Japan, South Africa, Finland, the United Kingdom, and the United States. Imports in 2001 were around \$1 billion. The major goods coming in are consumer goods (such as food and textiles), capital equipment (such as mining machinery and transport vehicles), and refined petroleum products. Typical import partners include Belgium, China, France, Germany, Italy, South Africa, Nigeria, Kenya, the United Kingdom, and the United States. (Note: import and export values of \$1 billion are somewhat sketchy and varied depending on the source and year date; perhaps these vary from differing accounting practices, or simply due to the difficulty of obtaining accurate and consistent information from this turbulent region.)^{12,9}

Electricity generation runs at 5.268 billion kWh, with about 98% of that coming from hydropower and 2% from fossil fuels. Consumption runs at 4.55 billion kWh, indicating a slight net export of electricity to neighboring countries. With the immense volume of water carried within the Congo River Basin, the potential hydroelectric generating capacity is phenomenal, and this country should have no problem continuing to meet its own demand for energy.⁹

The communications capacity is not very well-developed. The telephone system utilizes approximately 21,000 main telephone lines, 15,000 mobile cellular phones, a wire and microwave radio relay service, and a domestic satellite system with 14 earth stations. International telephone calls are assisted by one Intelsat satellite above the Atlantic Ocean. There are around 18 million radios in use, served by three AM, eleven FM, and two short-wave broadcasting stations. About 6.5 million televisions are utilized, served by 4 broadcast stations. There are now 2 Internet service providers, and 1500 people take advantage of this relatively new phenomenon in the Congo.⁹

The transportation system is generally rudimentary, and civil strife is not helping the situation at all. Railway tracks span 5138 kilometers. Highways traverse 157,000 kilometers (which includes 30 km of expressway). However, these totals may be rendered inaccurate by damage from civil and regional wars, and disrepair is already prevalent from previous normal usage. There are 390 kilometers of petroleum pipelines. Airports with paved runways number 24; there are 208 with unpaved runways. Major ports and harbors are found at Banana, Boma, Bukavu, Bumba, Goma, Kalemie, Kindu, Kinshasa, Kisangani, Matadi, and Mbandaka. The Democratic Republic of the Congo does not yet have a merchant marine fleet. The Congo River is perhaps the most dependable means of transportation within the interior; theoretically, the wars cannot severely alter or damage that type of “natural” infrastructure. Waterways provide a generous 15,000 kilometers of useful navigation. The biggest drawback, and it is a relatively severe one, is that jagged cataracts cut most of the Congo River from its mouth at the Atlantic Ocean.

Man-made infrastructure is vital to overcoming this serious obstacle. Yet, with the chaos, it is hard to say how long existing infrastructure may last, and how long it will be until new technology is utilized.⁹

The Gross Domestic Product broken down by sector is: agriculture—54%, industry—9%, services—37%. Labor force by occupation is engaged as follows: agriculture—65%, industry—16%, services—19%. The estimated labor force is around 14.51 million workers. The country's GDP is \$4.4 billion, with a per capita GDP of \$82. The 2001 annual GDP growth rate was -4.1%, an ominous sign. The external debt is an astonishing \$13 billion.^{12,9}

Clearly, all of this information indicates that the Democratic Republic of the Congo is rather undeveloped compared to many other countries of the world. This blatantly reflects its past subjection to European colonialism, its long struggles with civil and regional warfare, and its current status of—essentially—”capitalist colonialism” by current highly developed rich countries. It needs to establish control and discipline in its own internal affairs to prosper—to “stop the bleeding,” in more ways than one.

Paper D: The Ability To Function

As already noted prominently in the previous examinations of the Democratic Republic of the Congo's Physical State, People, and Resources, it is entirely plausible that this country possesses the prerequisites to becoming a world force; however, the internal strife and the surrounding difficulties across and between the borders are nullifying any attempts toward progress. Agitation for independence began in the mid-1950s with such worthy nationalists as Joseph Kasavubu and Patrice Lumumba. Losing control and authority in the colony, the Belgians relented; independence was granted on June 30, 1960. But independence must be followed by structure, and in the absence of such vital and necessary structure, chaos will reign.

Elections were held in June, with Lumumba becoming prime minister and Kasavubu becoming head of state. But, as

happens so often in the infancy of new nations, ethnic and personal rivalries reared their ugly heads; and this was merely intensified and multiplied by the sinister interests of the Belgians. By July 4, the Congolese army mutinied; and by July 11, Moise Tshombe (a provincial president) declared the region of Katanga independent. On July 14, the United Nations Security Council voted to send a force to the Congo in hopes of establishing order. Power struggles raged everywhere. The United Nations troops did not withdraw until June of 1964.⁶

The government briefly stabilized, but political clashes remained prominent. The leader of the Congolese army, Joseph Mobutu, simply seized power for himself in November 1965. Compared to the earlier chaos, Mobutu generally stabilized the country and improved foreign relations. He sought to restore the “African” dignity of the region, and several “European” place names were exchanged for African ones. The 1970s and 1980s saw steadily growing political opposition, and student conflicts with soldiers became somewhat common. In 1989, the Congo defaulted on a loan from Belgium and thereby cut development programs for the Congo, which led to an unfortunate decline in the economy. In 1990, Mobutu ended single-party rule (although he retained much power for himself), and created a transitional government.⁶

Everything went to hell in the 1990s. The economy crashed, political rivalry and factions erupted from the young coalition government, the national infrastructure was collapsing, and government bribery and theft increased. Adding fuel to the fire, hundreds of thousands of refugees began crowding in from Rwanda; the Hutu-Tutsi civil war spilled violently across the border. In 1996-1997, while Mobutu lay dying of cancer in Europe, rebels pushed from east to west. Rebel leader Laurent Kabila seized power in May of 1997. He became repressive, and the masses began to rise up against him. Rwanda, Uganda, Zimbabwe, Angola, Zambia, and Namibia all joined the fray with troops or aid to their favored factions. (It is hard to say if any of these even knew what side to take; the situation was that complex and ever-changing.) By February 2000, the United Na-

tions would not even send in stabilizing forces as the situation was so dangerous, vicious, and out of control. In January 2001, Laurent Kabila was assassinated—quite possibly by his own son, Major General Joseph Kabila, who is the current head of the government.⁶

With this brief overview on recent history, it becomes obvious that any state can fail to function properly, given such conditions. Tribalism likely was rampant throughout history in Africa, but adding European colonialism and imperialism to the mix (and their total disregard for the natives) simply multiplied the problems exponentially. The entire region around the Democratic Republic of the Congo appears to be both a natural and man-made shatter belt.

A typical death rate for developing countries is 2% per year, but in the areas of intense fighting in the eastern Congo that figure often reaches 10% per year. Even in the peaceful areas, child malnutrition rates are high. Diseases, lack of pure water, and the low amounts of immunization add to this problem. Child mortality (for children under 5 years old) is a depressing 207 deaths per 1000. The maternal mortality rate is estimated at 1837 deaths per 100,000—likely one of the highest rates in the world. AIDS/HIV continues to spread relatively unchecked. The government has little in the way of infrastructure and organization to deal with these tremendous problems. Non-governmental organizations (NGOs) and faith-based organizations within the Congo and from around the world are trying vigorously to compensate for the country's weak health care system. They provide the vast majority of social services across the country.¹⁴

The United Nations' Office for the Coordination of Humanitarian Affairs (OCHA) Central and East Africa division grimly describes the current situation, "The DRC conflict is a human tragedy whose main victims are civilians. With more than 2.5 millions deaths, 2,300,000 IDPs and 20 million vulnerable, civilians have and continue to pay the highest price resulting from the adverse effects of the conflict and its critical and enormous implications on health, mortality, and poverty."¹⁵

Atrociously, rival factions have consistently used sexual violence as one of their weapons of warfare. The systematic rape, abductions for sexual service, and forced domestic labor of women and girls are common practices among the warring soldiers. This may be claimed as "punishment" for allegedly supporting the "enemies." Sometimes this enslavement lasts longer than a year. Sadly, experts estimate that HIV rates among military forces in the region may be as high as or higher than 50%. Tragically, this produces rejection of women and girls by their husbands, fathers, families, and communities because they were raped, or are thought to be infected with HIV/AIDS. These unfortunate actions are extensively documented.¹⁵

Besides the previously mentioned countries involved in the Congo's conflict, the countries of Sudan and Burundi are also creating regional tension. The inability of the Democratic Republic of the Congo to defend its own borders does not serve the intentions of stability well. However, there are some glimmers of hope. President Joseph Kabila has undertaken steps towards economic and political reform; he is reversing the ineffective and non-compromising positions of his late father. USAID provided \$100 million in assistance in 2001. The International Monetary Fund (IMF) and the World Bank are poised to reinvest in the Congo (and perhaps forgive some previous debts). Foreign soldiers are trickling out, and United Nations security forces are moving in to begin stabilization and to ensure compliance with the fresh Lusaka Peace Accord.¹²

These are promising signs for the future; however, it will take much time for the effects to ripple from Kinshasa outward to the rest of the weary nation. It will be a sluggish process—perhaps it will even revert to chaos again—but perhaps it will not. Perhaps the glory days are coming.

Bibliography:

¹ *Atlas of the World*, 9th Ed., "Gazetteer of Nations," p.7, "World Maps," pp.114-115, 118-119; Oxford University Press, Inc.: New York, NY, 2001.

² The Library of Congress: Country Studies, (http://lcweb2.loc.gov/frd/cs/zaire/zr00_07a.pdf), “Zaire”, 9/26/02; homepage: <http://lcweb2.loc.gov>.

³ *Political Geography*, 2nd Ed., by Martin Ira Glasner, pp.50, 78; John Wiley & Sons, Inc.: New York, NY, 1996.

⁴ *The New Encyclopedia Britannica*, vol.13, 15th Edition, pp.48-49, 94-96, 98; Encyclopedia Britannica, Inc.: Chicago, IL, 2002.

⁵ *The World Book Encyclopedia*, vol.4, pp.940b-940d, 940f; World Book, Inc.: Chicago, IL, 2000.

⁶ Encyclopedia.com, (http://www.encyclopedia.com/html/section/Congo-Kin_LandandPeople.asp) & (http://www.encyclopedia.com/html/section/Congo-Kin_History.asp), “Congo, Democratic Republic of the”, 9/16/02; homepage: <http://www.encyclopedia.com>.

⁷ *Collier’s Encyclopedia*, vol.1, pp.198/199; P. F. Collier: New York, NY, 1997.

⁸ Demokratische Republik Kongo, (http://www.kongo-kinshasa.de/geografie/geo_02.htm), 9/26/02; homepage: http://www.kongo-kinshasa.de/index1.htm?geografie/geo_02.htm.

⁹ CIA-The World Factbook, (<http://www.odci.gov/cia/publications/factbook/geos/cg.html>), “Congo, Democratic Republic of the”, 9/12/02 & 10/15/02; homepage: <http://www.odci.gov/cia/publications/factbook>.

¹⁰ United States Census Bureau, “Population Pyramids for Congo (Kinshasa)”, 10/15/02; homepage: <http://www.census.gov/ipc/www/idbpyr.html>.

¹¹ United Nations, (<http://www.un.org/Depts/Cartographic/map/profile/drcongo.pdf>), “Democratic Republic of the Congo”, 10/16/02; homepage: <http://www.un.org>.

¹² U.S. Department of State, (<http://www.state.gov/r/pa/ei/bgn/2823.htm>), “Background Note: Democratic Republic of Congo”, 10/31/02; homepage: <http://www.state.gov>.

¹³ United States Geological Service, “The Mineral Industry of Congo (Kinshasa)”, by George J. Coakley, p.10.1, (<http://minerals.er.usgs.gov/minerals/pubs/country/2000/9244000.pdf>), 10/31/02; & “Congo Kinshasa-Map”, (<http://minerals.usgs.gov/minerals/pubs/maps/92449.gif>), 10/31/02; homepage: <http://www.usgs.gov>.

¹⁴ USAID, (http://www.usaid.gov/regions/afr/country_info/congo.html), “Country Information: DR Congo”, 10/31/02; homepage: <http://www.usaid.gov>.

¹⁵ United Nations (Office for the Coordination of Humanitarian Affairs), “Affected Populations in the Great Lakes Region (As of 31st July 2002)”; P.O. Box 30218, Nairobi, Kenya: 2002.

¹⁶ ReliefWeb, (<http://www.reliefweb.int/w/map.nsf/wByCLatest/48A5004B82685256C1B006882CD?Opendocument>), “DRC Affected Populations by Province Internally Displaced (July 2002)”, 11/19/02; & (<http://www.reliefweb.int/w/map.nsf/wByCLatest/63F3F408126ACF5085256C1B006617BD?Opendocument>), “Great Lakes Region Affected Populations Refugees and Internally Displaced (July 2002)”, 11/19/02; homepage: <http://www.reliefweb>.

A Theoretical Analysis of the Detrimental Cycle of Economic Development

by Thomas Lamoreux

for Professor Monica Snowden's Social Theory class

In a capitalist society the phrase "economic development" has a positive connotation. The quest for a constant increase of capital is the basis for the advancement of technology and scientific research, as it is known today. Yet for every positive effect involved with economic development, there is also a group of negative consequences that are not given much prevalence in mainstream society. The negative side effects of economic development in a capitalist society are the key factors in the dehumanization and deskilling of the workforce, which has led to the global expansion of the labor market. Throughout this paper organizational factors associated with economic development will be explored using Max Weber's theoretical analysis of the effects of bureaucracy leading to his vision of late capitalism, involving the "iron cage" of rationality. Second, George Ritzer's contemporary theory of McDonaldization extends Weber's theory to address bureaucracy in contemporary capitalism. The most notable factor leading to the dehumanization of the workforce being considered is the invention and the implementation of the assembly line and the ideology behind this invention: the progressive force of industrialism and mass production. The case study of Flint, Michigan will be shown as a prime example of the debilitating side effects of economic development in the 20th century. Finally an analysis of the numerous negative effects that economic development has on nations, states, and cities, in their endless search for prosperity and advancement in a capitalist society is reviewed.

For the purpose of this paper a few concepts need to be defined. First, what is meant by "dehumanization or deskilling of the work force"? Dehumanization is "[t]he act of depriving of human qualities such as individuality, compassion, or civility and/or to render mechanical and routine" (Moorehead 1995:184). In this paper "dehumanizing" will form a parallel to this defini-

tion, but will be shown in respects of the pursuit of economic development through the advancement of capital. Moreover, this paper will look at different advancements and/or innovations that have increased production while decreasing the skill and humanness of the workforce. For the purpose of this paper dehumanization and deskilling will be used interchangeably, because deskilling and dehumanization, although distinctly different in their nature, go hand in hand with the process of certain complications of the working class in America.

Theoretical Overview

The theoretical analysis that will encompass this paper will be Max Weber's look at the bureaucracy and subsequently the iron cage of rationality. Second, a contemporary analysis of Weber's theory is discussed using Ritzer's theory of *The McDonaldization of Society* (2000). The main points that need to be discussed before the real effect of dehumanization can be seen are Weber's view on bureaucratic control of the workforce without religious and/or ethical meaning and Ritzer's dimensions of McDonaldization, which ties Weber's views on the bureaucracy into contemporary society. The base of the theoretical analysis will be grounded in Weber's predictions of the search for economic development in late capitalism.

Weber spoke at great lengths about the effects of bureaucratic control and the introduction of rationalism in capitalism. In the book *The Protestant Ethic and the Spirit of Capitalism* (1958) Weber spoke of a religious calling that stimulated the Protestant Ethic. The calling Weber spoke of was the driving force that inspired the Puritans' pursuit of wealth. Weber prophesized that as capitalism progressed, the meaning of a person's labor would no longer be religious; it would simply create wealth for wealth's sake. Consequently, once the spiritual calling for hard work vanished, bureaucratic control would replace it. Weber states, "In the field of its highest development, in the United States, the pursuit of wealth, stripped of its religious and ethical meaning, tends to become associated with purely mundane passions" (Weber 1958:183). The most trou-

bling part of Weber's assumption of bureaucratic control was that once capitalism progressed to this state, no one would be able to avoid his fabled "iron cage." Weber saw society as being made up of overly rationalized structures in which people become trapped. Bureaucratic organizations would take over all social organization, which created Weber's unavoidable iron cage of rationality. Weber saw this development as disconcerting, but spoke as if this phenomenon was an unavoidable part of the natural progression of capitalism.

Ritzer took this notion a step further in his book *The McDonaldization of Society* (2000). McDonaldization is "the process by which the principles of the fast food restaurant are coming to dominate more and more sectors of American society as well as of the rest of the world" (Ritzer 2000:1). In this book Ritzer takes a look at what effect the rationality of bureaucratic organization in contemporary capitalism has had on society in America and the rest of the world.

Ritzer's look at the effects of rationalization on contemporary society is encompassed in his four dimensions that make up his theory of McDonaldization. Ritzer, like Weber, however, illustrates how rationality produces irrationalities such as dehumanization. The first of the four dimensions is increased emphasis of efficiency. Ritzer defines efficiency as the optimum means to an end. This dimension dehumanizes the work force by allowing for only one correct procedure, with little to no variation. The second of Ritzer's dimensions is calculability or the striving to increase production. Calculability dehumanizes by increasing emphasis on quantity over quality, whether in the product or the service. The ability to guarantee uniformity of product or service throughout all locales or predictability is the third dimension. This dimension is problematic because it takes away workers' creativity and replaces it with rationality. The final and most important to the dehumanization of the workforce is control through non-human technology. Due to an increased emphasis on control, this dimension creates a workplace where workers are dehumanized to the point of performing machine-like actions. The dehumanizing effects of this dimension will be

discussed in more detail later in the paper. Ritzer's four dimensions of McDonaldization will be shown to all be separate in their causes yet all run together in their effects (Ritzer 2000).

Case Study: Flint, Michigan

Flint, Michigan, stands as the poster city for the disastrous effects of economic restructuring. The documentary *Roger and Me*, by political activist Michael Moore, showed the disparity of the city crushed by economic restructuring and globalization. The documentary showed twenty thousand people standing in line at one location to collect federal surplus cheese, large sections of a city filled with condemned and abandoned homes and boarded up stores, a city that looks more like a war zone instead of an American city. The most troubling effects were the subsequent increase in unemployment, suicide, spousal abuse, and alcoholism rates. Also during this time of despair the city of Flint surpassed Miami and Detroit as the city with the highest rate of violent crime (Blenz-Clucas 1995). This is the grim scene of Flint, Michigan, formerly a center in the automobile industry until General Motors closed their Flint plant leaving, many blue-collar workers unemployed. Just six years earlier Flint was a very prosperous town that was integral in helping General Motors record its best year with an estimated 19 billion dollars in profit (Broman et al. 1991; Blenz-Clucas 1995; Lord & Price 1995).

The city of Flint built its economic prosperity around the General Motors plant. When General Motors pulled out of Flint, more than 30,000 of the city's 150,000 residents were left unemployed (Lord & Price 1992). With the increased revenue of General Motors, the company automated their current assembly lines and built new plants in Mexico and Asia. This case is a prime example of the importance of economic development and the damaging effects of the global market place. The need for General Motors to have more control in its factories led to the deskilling of the laborers, who now had to possess only basic skills. The only question for a corporate entity then is the price of labor. General Motors found that labor is less expensive in

Mexico and other developing countries, where unions are often non-existent. Subsequently, Flint was left ravaged because the workers could no longer compete globally. This was one severe case of many that showed the negative effects that deindustrialization has had not only on the cities, but also on the American wage laborers (Lord & Price 1992; Broman et al. 1991).

Flint, Michigan's dependence on the automobile industry left the city ravaged and also searching for new forms of revenue. The citizens of Flint could no longer look to the mobile capital in the automobile or any other manufacturing industry because the GM plant had gone, but the well structured union and a long history of labor/management problems persisted (Lord & Price 1992).

In the wake of destruction, Flint's search for meaningful economic development led the city to capturing the tourism dollar. Tourism seemed to be the answer to Flint's economic shortcomings. The two factors that led Flint to invest exorbitant amounts of money into tourism seemed to be valid. First of all, Flint was located in the county of Genesee, which already had two successful tourist projects. Further, the interstate highway that runs north to south through Michigan ran directly through the county. City leaders saw this highway as an artery that would lead tourists seeking recreational activities to Flint. Two hundred million dollars were invested in high scale hotels, amusement parks, and upscale marketplaces in an attempt to create Flint as a hub of tourist activity. All of these projects failed because they did not attract enough people in a constant stream to make the new jobs created necessary.

The second and most important factor is the number and type of jobs that would be created by the tourism buck. (The jobs that were created will be discussed later in this paper) Tourism was supposedly going to create 1300 new jobs for Flint citizens; after the failure of the service sector, however, fewer than 400 jobs were retained. It became apparent to city leaders that the search for tourism was not as lucrative as they initially believed. The next step for economic development was a pro-

gram to retain and entice companies. (Lord & Price 1992)

Flint leaders felt that the best course of action was to retain what was left of the General Motors workforce and hopefully entice related industries to relocate to Flint because of the city's new tax abatement program. Tax abatement, "...involves excluding taxes on new or rehabilitation investments in industrial facilities with the expectation that the industry would create new jobs and retain existing jobs during the term of abatement" (Lord & Price 1992:160). The tax abatement program worked to attract capital but for the wrong reasons. Fisher Body (GM) relocated to Flint because of the tax abatement program. In 1987 the company received their last year of the expenditure promised by the city. Promptly the Fisher Body Company closed the plant and laid off all of the remaining employees. Business took advantage of Flint because of the vulnerable state economic restructuring left the city in. The tax abatement program was expected to create or retain 72,108 jobs, as of 1990 the number jobs retained was lower than 40,000 and constantly declining. (Lord & Price 1992)

In 1998 the negative effects of deindustrialization and globalization hit the town of Flint again. Since 1982 general motors had reduced its employment in the Flint plants from 80,000 to 27,000. In 1998 another 11,000 jobs were eliminated from the GM plants in Flint, Michigan. (wsws.org 1998) The city of Flint, Michigan has never recovered from the closing of the prominent GM plant. Now Flint is caught in the middle of the devastation and violence that has overtaken the city, all the while trying desperately to retain what industry still exists (Boggs 2000; wsws.org 1998).

The difficulty Flint had mirrors the problems of many other cities. The decline of the manufacturing sector has made the service sector more powerful, and consequently, the main source of economic development in America. Flint, Michigan, is an example of a city that has cycled through the detrimental cycle of economic development. It sits now on the cusp of the future in its continuing quest to find new forms of economic development. The situation in Flint presents a few questions

that solicit clarification. How did this restructuring come about? What state has deindustrialization left America in?

Mass Production/Industrialism

The beginning of the downward spiral of the dehumanization and deskilling of the workforce began with the era of industrialism. More precisely, in the early 1900s the first major difficulty to the workforce in the United States came into effect: the assembly line. This innovation was attributed to Henry Ford. He took his inspiration from the meat packing industry's disassembly line and reversed it, calling it the assembly line. "It [the assembly line] consisted of a conveyor system with workers standing along, arranged in the order in which their tasks were to be performed. Workers completed their task on the automobile with an execution of 'a single, simple operation' "(Barber et al. 1998:793). The assembly line was designed to remove the skill of the worker and put more control in the hands of industry (Barber et al. 1998; Volti, 2001). This development has enhanced the four dimensions of rationality that according to Ritzer characterize the McDonalized world, not only the manufacturing sector. The assembly line and ideology behind it have been invaluable in creating an efficient, calculable, predictable work place, while taking control away from the workers and putting it in a machine (Ritzer 2000).

This complication was not simply the implementation of the assembly line or any other technology used, but rather the belief that workers' productivity could be measured (Marcuse 1964). The implementation of a specific technology did not bring about the rise of industrialization. The rise came about from a change in ideology referred to as scientific management or simply the measurement of work. It's when a machine became the means of measuring a man's or woman's output and paying them for the output. Machines controlling a worker's output imply the danger of Max Weber's iron cage of rationality. Weber prophesied of the stark consequences of bureaucratic control present in social organizations in late capitalism. The concept of measuring a person's output is incorporated as one

of the first steps that implemented the rationalized system of the bureaucracy into manufacturing. Although many other societies have had similar organizational structures in the past, the western world's structure of bureaucracy is far more efficient. The term to explain this new way of thinking is rationalization (Marcuse 1964; Ritzer 2000).

Ritzer stated that having a rational workplace is creating a "setting in which people cannot always behave as human beings—where people are dehumanized" (Ritzer, 2000:25). In a rationalized environment the emphasis is on control, and the only variable that cannot be controlled, in a bureaucracy, is the irrational human. By stripping away a person's humanness the environment becomes more efficient, calculable, and predictable, generally easier to control. Weber also warned of the reliance on the organizational bureaucracy: "Specialists without spirit, sensualists without heart; this nullity imagines that it has attained a level of civilization never before achieved"(Weber, 1958:182). Simply, Weber says that the less human a worker is the more capitalism will thrive, and that the goal of hitching a man to a job is to strip away the worker's humanness and let the rationalized machine measure his/her output (Ritzer 2000; Weber 1958).

The creation and the ideology behind the assembly line set into motion a slow and steady process of the deskilling of the work force. Instead of training the vast number of the specialist needed to create and become an integral part of production, the assembly line made it possible for industry to deskill workers to a greater extent. The assembly line deskilled the workers because it simplified the process of production so the wage laborers only had to execute a single, simple operation. This turn from fewer specialists to many deskilled workers increased production, but just as importantly, it increased the progressive nature of bureaucratic control (Barber et al. 1998).

The increase was set with a distinct division of labor and a simple hierarchy. Each person on the assembly line had a distinct job, no one job more important than the others, so that all the men and women on the assembly line formed a class, the class of wage laborers. The hierarchy that was created made it

easy for a ruling class of industrialists to control and mediate the laborer because each deskilled worker was easily replaced (Volpi 2001).

All of Ritzer's dimensions of McDonaldization can be seen in the ideology brought in by the implementation of the assembly line. Most obvious is the actual technology being implemented. The assembly line took control away from the laborer. In turn, the laborers were at the mercy of the speed of the machine. Since each laborer executed only a single operation, the process achieved a very efficient nature because each task was a simple one. Therefore, calculability was increased because more products were produced. Finally, since each worker had only a single task to do over and over, any variation could be eliminated, making for a very predictable product (Ritzer 2000).

The automobile industry's process of deskilling progressed still into the mid-1950s in Japan (Barnet & Cavanagh 1994). Japan needed to lower the price of its vehicles to meet the needs of its fiscally devastated people. This came about through a new process of stamping sheet metal. Changing the molds quickly and often is a key method of producing more and more automobiles. Barnet and Cavanagh state, "Instead of employing specialists to change the dies as in Detroit, they trained the production workers to do it themselves. Thus, both saving labor costs and making the workers' jobs more interesting" (Barnet & Cavanagh 1994:119). Essentially the Japanese model, which was soon adopted by the Ford Company, was cutting or demoting the specialist and teaching the basic skill to the laborer, in turn lowering production cost and reducing waste.¹ Both relatively good advancements, yet for the industrialist this change was just another step in lowering the wage laborers' importance.

The previous development of deskilling the worker led to the complete overhaul of the assembly line in the mid-1980s. Industrialists have slowly deskilled the workers to behaviors consisting of machine-like actions, and when the technology advanced to a certain point, machines replaced the laborers. With the labor force deskilled through the reduction of specialists,

Ford "carried out a major retooling...Computer driven machines to weld, stamp out parts, and schedule, control, and monitor production were introduced into the Ford Plants in Europe as well as North America" (Barnet & Cavanagh 1994:121). By developing this process of cut backs and replacing human employees with machines, Ford was able to lower its per-car production costs to \$800 less than those of General Motors. The overhaul of the assembly line illustrates the interconnections between Ritzer's dimensions of McDonaldization. Now the dimensions were even more prevalent because machines controlled a vast majority of efficiency, calculability, and predictability in production. Most importantly, the power of the final dimension, control through non-human technology, is completely realized (Barnet & Cavanagh 1994; Ritzer 2000).

The measures taken by Ford to cut costs were an overwhelming success. With competition as fierce as it is in the automobile industry, this form of innovation was necessary to survive in the growing global market. What Ford sacrificed was 116,500 jobs, mostly lost from the U.S. The nature of the workers who were left also suffered. Ritzer discussed the nature of work on the automated assembly line. Some workers summarized current work on the assembly line as: "Sometimes I feel like a robot. You push a button and you go this way. You become a mechanical Nut" (Ritzer 2000:139). This account of assembly line work is a far cry from one of the key functions of the Japanese model. The goal of the Japanese model was to increase production while "making the workers' jobs more interesting." Nevertheless, laborers who still found or kept work in the manufacturing sector fared better than the workers who had to face the new job market created by economic restructuring (Barnet & Cavanagh 1994).

Wage Laborers and Deindustrialization

As the service sector became the main economic means of America, the process of dehumanization began to adjust with the changing nature of the workforce. Although the seeds of the organizational bureaucracy had been planted many decades

before, through a division of labor and simple hierarchies, the post-industrial age gave way to a certain type of bureaucracy. The course of deindustrialization was the final action that led to the complete institutionalization of the organized bureaucracy, as it is known today. The organized bureaucracy is the cage Weber talks about in the Protestant work ethic. Weber states, "...external goods should only lie on the shoulders of the saint like a light cloak, which can be thrown aside at any movement. But fate decrees that the cloak should become an iron cage" (Weber 1958:181). Weber implies that the bureaucracy should be a tool of production, but not the sole means to produce. He states that bureaucracy is a process that goes hand in hand with economic development in capitalism. Therefore, in the late stages of capitalism, a person will not be able to avoid the cage (Weber 1958).

Deindustrialization was the process that led many blue-collar workers out of the factories and into the service sector. The events leading to this economic restructuring are too numerous to address in one paper, but there are theories on the deindustrialization movement that tie into dehumanization. The first factor is the implementation of technologies to replace human labor. Theoretically, it has been argued that this process was implemented to make the workplace more predictable and efficient. This move to advanced technology was the climax of many preceding events that deskilled workers to a point that they were expendable enough to be replaced by increased technology. The second event relevant to the exodus of the blue-collar worker to the service sector is the globalization of industry. This took place due to the increased market for imported goods, technological advances, and the decreased necessity for American-made goods. By partaking in the global market place, American companies may take advantage of lower wages and are not burdened with union entities, labor laws, or environmental regulations (Ritzer 2000; Morris & Western 1999).

With a global market in place, businesses do not have to pay the wages the blue-collar workers had grown accustomed to. In deindustrialized America, corporations can seek out "Poor

countries with unorganized workforces ... whatever flag they fly" (Barnet-Cavanaugh 1994:121). With increased economic development and competition of industry, workers who had grown accustomed to secure employment, fair wages, benefits, and support provided by the unions and labor capital accord cannot compete globally. The labor capital accord was an agreement between laborers and industrialist (Rudin 1996). Before deindustrialization, the labor capital accord was a distinct victory for the working class. At its conception, it exchanged fair wages and stable jobs for the laborers, and in turn, the industrialist received increased productivity. The problem arose with the increased prevalence of the global marketplace and the decrease of the purchasing power of the dollar. Costs began to rise, as did the price of the products the laborers produced. To compete in the increasingly global marketplace, corporations have fled the United States in search of inexpensive labor. Since much previous advancement had deskilled American laborers to the point of expendability, finding cheaper labor was the simplest way to cut costs. In turn, globalization has relinquished any power the worker had over the workplace because workforces have been shown to be disposable (Rudin 1996).

Corporate Power

The global marketplace has given business an implausible amount of power, which has led to the distrust of many Americans. A 2000 Harris poll shows that Americans believe that corporations have too much influence over the government and their everyday lives (Business Week/Harris Poll 2000). Americans' distrust of the corporate community is echoed and reinforced in a look at the largest employers from 1995 to 1999. A disturbing trend is seen in the list of the top 200 largest employers in America. For example, General Motors, formerly number one on the list, dropped from 709,000 employees to 388,000. The company that took GM's place was the superpower retail store Wal-Mart. This modification of the list signifies the speed at which the service sector is overtaking the manufacturing sector (Straus, 2001).

In only four years, Wal-Mart has increased its workforce almost twofold. In 1995, Wal-Mart employed 648,000 employees; in just four years that number jumped to 1,140,000 jobs. The American people's distrust leads to the main problem with this shift involving the top two employers. General Motors' jobs often offered good pay and benefits and were supported by unions. Wal-Mart, on the other hand, employs many of its workers on a part-time basis to avoid paying benefits. This has been the sweeping trend in America: fewer union-supported industry jobs and an increase in poorly paid, non-unionized service sector work (Straus 2001).

With many jobs being shipped overseas, corporations are gaining a lot of power in foreign markets. Corporations seek out countries with poor, unorganized workforces to build factories. This exodus of jobs is occurring on such a large scale because many foreign entities need industry as much as the United States does, if not more. "Underdeveloped third world countries are so desperate for foreign investment and export revenues to pay off their external debts that they are willing to look the other way when global corporations behave in socially irresponsible ways" (Straus 2001). Due to this acceptance of damaging side effects that some companies leave behind, corporations are expanding at an alarming rate in the global market. With companies participating in the global market, the effects on cities and states that lose the companies are disastrous. This was the situation in the previously mentioned case study. States have looked at the devastation in Flint and have become much more friendly to business, in hopes of attracting the fleeing mobile capital in America.

Attracting Business

Being considered friendly to business is imperative in a state's quest for economic development. "States have also grown more conscious of what they must do to be attractive to business generally" (Demott 1994:2). With the example of Flint, states see how a loss of industry can destroy a local or state economy. Intense competition is taking place between states to

attract big business. States have taken many steps to make themselves more business friendly. Tax expenditures, state-funded workforce training, tax-free employee benefit packages, and relaxed environmental codes are just the tip of the iceberg when it comes to the relations between states and big business (Demott 1994).

The globalization of industry has been a key factor that has led to a change in the way states recruit big business. The current state of competition has been dubbed "The new civil war" (Watson 1995). One of the most publicized cases of a foreign entity being sought out by states is in the case of the Mercedes-Benz vehicle plant.

In 1993, the Mercedes Benz Corp. announced plans to build a sport utility vehicle plant in America. The state in which the corporation relocated would receive an estimated 1,400 new jobs and a \$300 million investment in the site chosen (Gardner 2001; Martin 1997).

Enticing the Mercedes plant was important to the state of Alabama for two overwhelming reasons. First and most obvious, the revenue generated from the plant would serve as an economic booster for one of the nation's poorest states. Alabama also saw the projected success of the plant breaking down barriers that have hindered Alabama's industrial base (Gardner 2001).

The offer Alabama put up was a lucrative one for the Mercedes Benz Corp., and to say the least, a risky one for the state. The first selling point Alabama possessed was the notion that it could provide a quality workforce. The Economic Development Partnership of Alabama (EDPA) invested a substantial amount of money into creating a quality workforce that has become a key selling point in global industry, especially for companies that advertise quality over quantity. The Mercedes Benz United States International Inc. (MBUSI) is the actual company dealing with the negotiation of the vehicle plant in the United States. The president and CEO of the MBUSI, Andreas Renschler, put an increased emphasis on people over machinery and simplicity of the work (Reynolds 1997). The second por-

tion of Alabama's offer to the German-based company is a tax expenditure program that will cost the state a great deal of money. The plan consists of Mercedes using the money that would be collected in state taxes to service the debt of building the new plant. Also, the Mercedes Corp. could take five percent of each employee's salary and use it again for debt service. The state of Alabama would collect the bill for the five percent taken from the employees. In the end, the Mercedes Benz Corporation is looking at a total incentives package of \$300 million (Gardner 2001; Reynolds 1997).

At the end of the negotiation process, the Mercedes Benz Corp. chose the deal that Alabama offered and built a plant in the small city of Vance, outside Tuscaloosa. Since the construction of the plant, the risk seems to have paid off for the state. The Mercedes Benz Corp. has plans to expand its production plant in Vance. Also, the plan of the EDPA to attract more foreign entities seems to be going as scheduled. Honda is negotiating plans to build a major facility in Alabama. Boeing has decided to build a new rocket plant in the state. Alabama's gamble is paying off well for the state and is cementing its claim to the global game of economic development (Gardner 2001)

The study of Vance, Alabama, seems to be in stark contrast to that of Flint, Michigan. It seems as though Alabama did a great job of securing development, while Michigan seemingly failed in the game of global development. It must be remembered that Flint was a prosperous city once, and in a matter of a decade the city and state were crushed under the power of globalization. The state of Alabama is simply in a different position in the detrimental cycle of economic development. Since the global marketplace is getting more and more competitive, it seems that Vance's success falls under the shadow of uncertainty.

Conclusion

The bureaucratic control that was implemented with the beginning of industrialization and mass production and the increased control in post-industrial times have created Weber's imaginary "iron cage" and made it an unavoidable phenomenon

in post-modern society. Although Weber and Ritzer never prophesied what would happen next, one can assume that dehumanization will continue on a downward spiral. Due to the progressive nature of late capitalism, the cycle has led back to where it began. First, the key to the success of any capitalist society is economic development. It starts with the need for capital accumulation, which in turn leads to the deskilling of the workforce through means of increasing technology and bureaucratic control. This cycles into the advancement of the global marketplace, which takes industry out of the United States and disperses it globally. Thus, states find themselves back where they started in the cycle, searching for new means of developing economically. This is a game in which the players seem to simply be chasing their tails. In the process of advancing economic development, states have turned economic development into a very elusive goal. The actual search for economic development has planted the seeds of its own destruction through the deskilling and globalization of industry.

WORKS CITED

- Barber, Russell J., Lanny B Fields and Cheryl A Riggs. 1998. *The Global Past; 1500 to the present*. Boston; MA: Bedford Books.
- Barnet, Richard J and John Cavanagh. 1994. *Global Dreams: Imperial Corporations and the New World Order*. New York, NY: Simon & Schuster.
- Blenz-Clucas, Beth. 1995. "Roger and Me." Berkeley; *Video Rating Guide*. Retrieved March 2001. www.lib.berkeley.edu/MRC/Roger&Me.html.
- Boggs, Grace Lee. 2000. "A Question of Place." *Michigan Citizen*, April 2-8. P18, 3p, 1c
- Broman, Clifford L., Patricia Carpentier-Alting, Lee V. Hamilton, William S. Hoffman and Duane Thomas. 1991. "Initial Impact of Plant Closings on Automobile Workers and Their Families." *Families in Society*, 2:107-18
- Business Week*/Harris Poll. (2000) How Businesses Rate: By

- the Numbers. *Business Week*, September 11, p. 2. Retrieved April 2, 2001 (http://www.businessweek.com/2000/00_37/b3698004.htm)
- DeMott, John S. 1994. States Scramble for Fewer Prizes. *Nation's Business*, 9, Vol. 82 Issue 9, P56, 3p, 5c.
- Editorial Board. (1998) "Flint Strikes force GM to idle more plants Global changes in auto industry underlie struggle." World Socialist Web Site June 16, p.1. Retrieved Dec 3, 2002. (www.wsws.org)
- Gardner, Edwin I Jr, Robert S. Montjoy, and Douglas J. Watson. 2001. "Moving into Global Competition: A Case Study of Alabama's Recruitment of Mercedes-Benz." *Policy Studies Review*, 18(3): 80-94
- Lord, George F and Albert C Price. 1992. "Growth Ideology in a Period of Decline: Deindustrialization and Restructuring, Flint Style." *Social Problems*, 39(5):155-69
- Marcuse, Herbert 1964. *One Dimensional Man*. Boston, MA:Beacom Press.
- Martin, Justin. 1997. "Mercedes: Made in Alabama." *Fortune*, July, pp 150-56.
- Morehead, Phillip D. 1995. *The New American Webster Handy College Dictionary*. New York, NY: Signet Publishing.
- Morris, Martina and Bruce Western. 1999. "Inequality in Earnings at the Close of the Twentieth Century." *Annual Review of Sociology*, 25:623-57.
- Reynolds, Larry. (1997) "Mercedes' Alabama Experiment." *Europe*, 363:26-30
- Ritzer, George. 2000. *The McDonaldization of Society*. Pine Forge, CA: Thousand Oaks.
- Rudin, Beth A. 1996 *Shifts in the Social Contract*. Pine Forge, CA: Thousand Oaks.
- Straus, Tamara. 2001. "Study Finds Dangerous Rise in Corporate Power." *Ripsaw News*, December 7, 2001 p.2. Retrieved April 14, 2001. (<http://www.ripsawnews.com/2001.04.11/feature.html>)
- Volti, Rudi. 2001. *Society and Technological Change*. (Fourth Edition). New York, NY: Worth Publishers
- Watson, D J. 1995. *The New Civil War*. Westport, CT: Praeger
- Weber, Max. 1958. *The Protestant Ethic and the Spirit of Capitalism*. New York, NY: Charles Scribner's Sons.

¹ The workers catch mistakes quicker during the actual assembly line.

What Makes an American Beauty?

by Chris Begeman

for Professor Katja Hawlitschka's Film and Literature class

"Absent father." "Pedophile." "Masturbator." "Pothead." "Blackmailer." Lester Burnham, the protagonist in *American Beauty*, fits all of these descriptions. He pays little attention to his adolescent daughter while fantasizing about and attempting to establish a sexual relationship with her best friend. To cope with a declining sex life, he masturbates in the shower and in the bed he shares with his wife. He resorts to drugs to escape a crumbling reality and relive his youth. He coerces his former employer into paying a "severance package" in return for his silence about a fictitious sexual harassment charge. In the words of his employer, he is "one twisted fuck"; in his own words, he is "just an ordinary guy with nothing to lose" (Ball, *American Beauty*).

So the questions arise: Why does this movie have such wide audience interest and appeal? What makes this movie worthy of five Academy Awards, including Best Picture? What cultural trends in the United States turned a movie about one man's "stupid little life" into a popular and mainstream critical success? Why did this movie not receive acclaim from intellectuals? And finally, why is Lester Burnham remembered as a hero of the middle class rather than a delinquent?

The mainstream popular and critical success of *American Beauty* stems largely from an appeal that transcends genre, a narrowly defined audience, and cultural and socioeconomic borders. The majority of mainstream film critics praised the film; however, some peripheral media applauded the movie while others did not. An analysis of the many media reactions to this movie indicate an array of elements to which various cultural groups responded positively. From the scholarly standpoint, the movie's themes that are praised by popular culture are heavily criticized by academic critics.

Though *American Beauty* contains elements of numerous genres, the movie does not fall into one of the traditional

dramatic categories.¹ Although humor permeates the movie, the film fails to fulfill the primary defining element of comedy: "A drama—play, story, or film—that ends happily for the main character (or protagonist)." Similarly, the movie cannot be classified as a traditional tragedy as Lester is not "an important, heroic person." Director Sam Mendes, in his introduction to *American Beauty*'s screenplay, describes the movie as "a highly inventive black comedy . . . a mystery story . . . a kaleidoscopic journey . . . [and] a series of love stories" (xi). Elements of these many genres are fused together to create a movie that satisfies what Aristotle deemed to be essential for a drama. It provides the audience with a cathartic experience by encouraging "the release or purging of emotions" for those who empathize with the movie's characters. Since the movie cannot be placed in a narrowly defined genre, the audience and critics place it in the genre of their choice, choices that reflect their personal preferences and interpretations.

To understand how the movie reached such a vast audience of moviegoers and critics, a close examination and evaluation of the responses to and reviews of the movie are necessary. First, economic and individual responses provide an estimation of the popular "average Joe/Jane" perception of the movie. Then, a look at general newspapers and magazines provides insight into the mainstream, dominant cultural response to the movie. Finally, scholarly or academic reviews and critiques demonstrate that the appeal of the movie may be rooted in its focus on the perception of American middle class.

The initial economic success of *American Beauty* indicates that the movie was a victory by Hollywood's objective, impartial standard: revenue. An article in the November 18, 2000, issue of *The Economist* lists *American Beauty* as one of the most successful autumn releases. In its opening weekend, screens showing the movie averaged \$52,500. The financial success continued for nine months. *The Internet Movie Database* reports *American Beauty*'s gross revenue between its opening weekend, September 19, 1999, and June 4, 2000, as \$130 million. During this time, the movie never exceeded \$10 million

on any single weekend. These two trends distinguish the movie from other box office blockbusters in that *American Beauty* did not experience an initial “boom” followed by a quick, financial drop. Its enduring appeal is further evidenced by the \$211 million the movie has generated in rental revenue. This movie’s “small” budget was only \$15 million, indicating that the success of the movie is based on audience appeal rather than large-scale marketing.

Grand revenues do not always indicate that a movie is successful because it is a quality film. *American Beauty*, however, has been successful in “popular” votes and ratings. The on-line book and entertainment megastore, Amazon.com, solicits reader/viewer responses to the products it sells. Of the 830 customer reviews of *American Beauty*, 511 people—61.5%—awarded the movie a five-star rating, the site’s highest grade and 85—10.2%—granted the movie four stars. One reviewer from Seattle, WA, summarizes many of the movie’s favorable responses: “I honestly don’t know how to describe this movie in words, except to say that it is perhaps the closest I’ve ever seen to perfection in film!!” Only 102 respondents gave the movie a one-star rating. The negative responses varied topically and thematically and included opinions that “the last words of Lester Burnham are just plain insulting and pretentious,” that “the movie is a beautiful, hollow shell,” and that “most of this movie was a useless, senseless, pretentious waste of film.” *American Beauty*’s popularity is also indicated on *The Internet Movie Database* where, on average, it ranks 8.6 out of a possible 10 stars by 56,542 voters. Additionally, the site lists it as the 20th best movie of all time.

While box office revenue and “democratic popularity” indicate one aspect of a movie’s success, popular “mass” media reviews and reactions to the movie demonstrate how a movie succeeds in a diverse cultural setting. Woody West comments on the irony of a large middle class audience when he observes that “middle class viewers are laying out the bucks to see themselves caricatured as swine. Odd.” Based on reviews of *American Beauty* in mainstream media, the movie’s success stems

largely from its commentary on the American middle class. The three predominant themes in these reviews are a synthesis of originality and familiarity in the plot, the male-centered midlife crisis and its satirical, “fresh” look at suburbia.

The majority of the newspaper reviews concluded that Alan Ball’s screenplay, and subsequently the movie, are highly original. Michael Dwyer’s review in *The Irish Times* echoes the sentiment of originality at the international level. He claims the movie “proves very funny, shockingly so at times, and above all ... it is highly original.” Though the originality of the story distinguishes it from most movies, he does compare elements of *American Beauty* to diverse movies such as *Ordinary People*, *Blue Velvet*, *The War of the Roses*, *Happiness*, and *Pleasantville*. The beauty of *American Beauty* lies in its ability to mesh the familiar and the unfamiliar for the middle class audience. Leah Rozen of *People* magazine extends Dwyer’s estimation when she points out that the movie “is alternately shocking, viciously funny, . . . and, toward the end, dramatically manipulative.” The movie’s perceived originality results in difficulty placing it in a specific, traditional category, and most reviewers recognized this. The most frequently occurring label was that of black comedy, though satire and romance have been used.

The movie’s primary achievement in regards to its originality results from the integration of diverse topics such as “drama, comedy, romance, mystery, teenage angst, midlife crisis, sex, drugs and family values” (Strickler). With such a wide range of themes interplaying throughout the movie, *American Beauty*’s broad appeal could easily be attributed to the diverse audience it attracts. Audience members, regardless of their socio-cultural standing, relate to some component of the movie. The crossing of these themes results in “a real American original, multilayered, bracingly resourceful and tweaked to push its ninny brash ideas to the edge and beyond” (McCarthy). By intertwining motifs from many genres of traditional, popular movies, Ball and Mendes create an “original” pieced together from unoriginal works. Peter Travers concludes that *American Beauty* “defies glib description. Is the film farce, tragedy, thriller, fantasy,

sitcom, skin flick or moral fable? Yes to all of the above.” Themes and genre, however, are not the only subjects woven together; film critic Joanna Connors believes the movie is “a sublime mixture of mainstream movie and art film that recognizes the delights of both forms of moviemaking and does not find them contradictory.” The film’s plot and its style stitch together a quilt of subjects and techniques from countless genres; it becomes a text representing the postmodern intertextuality: themes and devices from countless sources mesh in *American Beauty*.

Another theme emphasized in numerous reviews is that of the (male) midlife crisis. This theme’s prevalence in the movie spurred Elvis Mitchell to list ten movies about men’s midlife crises in the issue of *Esquire* immediately following *American Beauty*’s release. The midlife crisis is also the central focus of articles appearing in *The Economist* and *The Denver Post*. Both articles rely heavily on Susan Faludi’s book *Stiffed: The Betrayal of the American Man*. In “All Sorts and Conditions of Men,” Lester’s crisis results in a rediscovery of “his manliness: he quits his job, starts weight-lifting, gets a cool car, tells off his wife, and otherwise finds happiness.” Though he appears to have resolved his midlife “masculinity crisis” by finding a fountain of youth, inevitably, “it all ends badly” for Lester. A key impetus for the modern, American midlife crisis ensues from a missing rite of passage in contemporary society. Claire Martin points out “Faludi believes that U.S. society no longer has a conventional vehicle for the transition from boyhood to manhood.” *American Beauty* depicts the midlife crisis as a regression to puberty and the delayed voyage between adolescence and adulthood; its self-contained world provides a prime example of the interplay between youthfulness, the perception of beauty and the crises associated with the delusion of middle age (B. Johnson). The crisis, then, acts as a much-delayed rite of passage for the American male.

Diane Carman takes a less critical stance when she declares: “In the movie *American Beauty*, manhood is at the crossroads.” The crossroads, she argues, results from the diametrically opposing perceptions of ideal manhood. On one end of the

spectrum, “leaders with fine political pedigrees who leave us alone” define masculinity, while “the callow Jesse Venturas who flex their pecs” occupy the opposing end. Masculinity in the contemporary world has no middle ground. In *American Beauty*, Lester exemplifies the “crisis” that results from such a contradictory view of masculinity, and his response illustrates “an allegory” for the midlife response to the midlife crisis (Carman). Lester’s reaction to the crisis results in a semi-likeable character. Conrad Hall, the film’s cinematographer, commented about his first reaction to the script: “I love this story and the project, but my God, how can you like these characters” (qtd. in Turan). The midlife crisis becomes a cornerstone for *American Beauty*’s popularity, a common theme with which most audience members can relate. Those who have experienced a crisis empathize with Lester while other audience members connect with the people the crisis affects.

In *American Beauty*, the midlife crisis results from the “suburban pressure to conform and to acquire” (West). Malcolm Johnson points out the irony of the film’s title and its content. The roses implied by the title and those seen in the opening sequence of the movie “symbolize the ideal of suburbia as a paradise for Americans”; the reality depicted in the movie is “far from perfect” and the suburban dwellers “have lost their moral compasses” (Johnson). The character Buddy Kane summarizes the mutually dependent relationship between image and reality in suburbia, “In order to be successful, one must project an image of success. At all times” (Ball, *American Beauty*). The portrayal of success supersedes the achievement of success. David Ansen contends that the film accurately represents the “bleak underbelly of suburbia.”

His [Mendes’] film examines a malaise that’s been plaguing the affluent, deracinated middle class since the suburbs were invented. It’s about the power of images we have in our heads, and the painful gulf between those fantasies and the reality we can’t seem to grasp. The beauty of *American Beauty* is how wickedly entertaining it makes this bleak diagnosis.

The appeal of *American Beauty*’s joyless suburb stems

from the film's ability to juxtapose the perception and the fact of suburbia, the pain and humor. The movie captures "the hollow space behind the American dream, the frustrations that hide under the perfectly mannered surfaces of our lives" (Turan). This underside of suburbia largely stems from the movie's script, the characters' desires and the words they use to manifest their desires. The characters' honesty results from screenwriter Alan Ball's personal experiences in the suburbs. He describes his former neighbors in his hometown of Marietta, GA, as "'shut down and living in total denial'" (qtd. in Murray). The fictitious characters residing on Robin Hood Trail derive their quirks and idiosyncrasies from Ball's childhood neighbors. The resultant dysphoric view of suburbia reflects the simultaneous ideal and real suburbs, a contradiction with which inhabitants of 1999's suburbs can easily relate. The mainstream media's accounts, critiques and reviews of the movie focused on mainstream, middle-class topics, thereby priming the audience for an experience with which they could relate.

One issue missing from the majority of the mainstream reviews and critiques is that of homosexuality. *The Advocate*—a homosexual-oriented magazine—published numerous articles about homosexuality and its role in *American Beauty*. Screenwriter Alan Ball contributed an article in which he expresses his intent to portray the movie's gay couple "the Jims" as "the most well-adjusted people in the movie." His intent was to present them as opposites to Colonel Fitts, a character who embodies "homophobia . . . fear and repression" and the devastating effects of these practices. The popular, mainstream press largely ignored the theme of homophobia in the movie and focused instead on other, more popularly accepted traditional themes in the movie.

Perhaps the most surprising responses to the movie were found in two religious-oriented publications. *Commonweal*, a publication edited by Catholics, praised the movie and its many messages. Richard Alleva, author of the article "No 'Leave it to Beaver,'" concludes that the film contains "the greatest acting you'll catch on film all year, *American Beauty* is the best

nonmasterpiece I've seen in a long, long time." This sentiment was not alone in the religious realm. Though he acknowledges the presence of immorality in the film in his *Christian Century* article, Craig Detwiler judges the movie as a "profound, provocative film [that] challenges us to find the beauty in America." The movie's appeal extends to cultures that criticize its themes.

The appeal, however, is not absolute. As previously noted, not all of Amazon.com's reviews indicate approval of the movie, as 12.2% of their respondents gave the movie only one star on the five star scale. This lack of applause was also present in scholarly and non-mainstream publications. Many of the reviews and critiques claimed the movie is based largely on clichés and inaccurate representations of suburbia. Gary Hentzi argues that the characters and the plot surrounding them have been used multiple times and the movie's ridiculing of suburbia has been practiced in film for "the past 50 years." In "Hot 'Burbs, Hotter Paris," John Simon methodically and sarcastically dispels the components of the film and its plot that "allegedly pushes the envelope." The movie's screenplay fails to elicit the popular opinion of "originality": its topics are not new to the screen nor is the approach.

The other themes praised in mainstream media, male, midlife crisis and disillusioned suburb dwellers, carry little weight in peripheral and intellectual publications. While Stanley Kauffmann commends the movie's acting, he describes Lester's midlife crisis as "only one more journey through familiar fortyish unfulfillment." The popular perception that this treatment of midlife crisis sheds light on a timely topic lacks resonance in peripheral, non-popular culture media. *American Beauty*'s satire of suburbia and corporate America, Stuart Klawans argues, offers little more than "Married . . . With Children" or a Dilbert comic strip. With little new or original to add to the artistic world, *American Beauty* depends on the emotional and sentimental appeals to the audience (Vineburg). This critique is echoed in the scholarly world. In *The Chronicle of Higher Education*, Steve Vineburg comments on the movie's reliance on suburban myth and folklore: "There are no truths in *American*

Beauty, just clichés about the soured American dream that have been around so long they've attained the status of received wisdom." Contrary to the popular reaction, the educational critiques of the movie's themes posit that they are overplayed clichés that are dependent on the audience's emotional reaction.

The disparity between the media reactions represents a difference between mainstream American middle class and the perceived mainstream American middle class. George Gerbner, through his cultivation theory², attempts to explain the lack of correspondence between the reality of middle class life and the expected middle class life. Gerbner argues that as individuals watch more television, "blurring, blending and bending" of the perception of self and the world occur. This process, which he calls "mainstreaming," results in a homogenized audience that collectively views itself as middle class, politically moderate and middle-of-the-road, even when the individual audience members may not be.

Gerbner uses the term "resonance" to describe "the congruence of the television world and real-life circumstances" (qtd. in Griffin 356). Though he uses the term in relation to violence, the definition could easily be expanded to non-violent resonance. In respect to *American Beauty*, a movie that depicts the Hollywood, "idealized" or "mainstream" version of the middle class, the middle class audience (and those who consider themselves middle class) develops an empathetic connection to the Burnham family. When Lester is frustrated at work, audience members relive their frustration at work. When Carolyn prizes her couch over her husband, audience members experience (and ideally rethink) their materialistic tendencies. In essence, the movie's structure revolves around enough real and perceived middle class elements that the audience's life experiences resonate during the movie.

Writers in the media, especially the popular media, are not exempt from the process of mainstreaming, and their reviews of the movie correspond to a middle-class reaction. Peripheral publications and their contributors represent a population that is often demographically outside of the middle class,

and presumably views itself outside of the middle class. As such, their reviews and critiques of *American Beauty* characterize a non-middle-class, non-resonating reaction to the movie. Gerbner's research focused mainly on television and its tendency to influence the middle class. Coincidentally, Ball was writing television sitcoms while he wrote the screenplay for *American Beauty*. The movie reflects Ball's appeal to the mainstream and his previous work in the advertising industry. He knows his audience, he knows what his audience enjoys, and he writes for his audience.

Works Cited

- "All Sorts and Conditions of Men." *The Economist* 6 Nov. 1999: 89. Online. Ebscohost.
- Alleva, Richard. "No 'Leave it to Beaver.'" *Commonweal* 5 Nov. 1999: 19. Online. Ebscohost.
- "American Beauty." <http://www.imdb.com> [*Internet Movie Database*]
- "American Beauty: Reviews." <http://www.amazon.com>.
- Ansen, David. "What American Dream?" *Newsweek* 27 Sept. 1999: 68. Online. Ebscohost.
- Ball, Alan. "Beauty and the Box Office." *The Advocate* 28 March 2000: 11. Online. Ebscohost.
- . *American Beauty* (Screenplay). London: FilmFour Books, 2000.
- Carman, Diane. "Beauty's Reality is Blemished." *The Denver Post* 10 Oct. 1999: B1. Online. Lexis-Nexis.
- Connors, Joanna. "American Beauty; Dazzling Film Debut for English Director." *The Plain Dealer* 26 Sept. 1999: 11. Online. Lexis-Nexis.
- Detweiler, Craig. "Hidden Beauty." *Christian Century* 116 (1999):1005. Online. Ebscohost.
- Dwyer, Michael. "Behind Closed Doors." *The Irish Times* 2 Oct. 1999: 64. Online. Lexis-Nexis
- Griffin, Em. *A First Look at Communication*. 4th ed. Boston: McGraw-Hill, 2000.
- Hentzi, Gary. "American Beauty (Review)" *Film Quarterly* 54

(2000): 46. Online. Infotrac.

Hirsch, E. D., Jr., Joseph F. Kett, and James Trefill, eds. *The Dictionary of Cultural Literacy*. Electronic Edition. Houghton Mifflin Co., 1988.

“The Humbling of Hollywood.” *The Economist* 18 Nov. 2000: 98. Online. Ebscohost.

Johnson, Brian D. “The Big Screen Heats Up.” *Maclean’s* 27 Sept. 1999: 72. Online. Ebscohost.

Johnson, Malcom. “Beauty May be Year’s Best.” *The Hartford Courant* 24 Sept. 1999: F1. Online. Lexis-Nexis.

Kauffmann, Stanley. “In Search of an Author.” *New Republic* 11 Oct. 1999: 36. Online. Ebscohost.

Klawans, Stuart. “The Boys of Summer.” *Nation* 11 Oct. 1999: 34. Online. Ebscohost.

Martin, Claire. “The New Male Malaise Wealth-conscious Society that Dehumanizes Throws Men for a Loop.” *The Denver Post* 29 Sept. 1999: F1. Online. Lexis-Nexis.

McCarthy, Todd. “American Dream, Worked Over.” *Variety* 13 Sept. 1999: 40. Online. Infotrac.

Mendes, Sam. “Introduction.” Ball (*American Beauty*) xi-xiii.

Mitchell, Elvis. “Midlife Movies: Surviving the Midlife Crisis in Style.” *Esquire* Oct. 2000: 58. Online. Ebscohost.

Murray, Steve. “Screenplay Salvation: Beauty Marietta Native’s Catharsis.” *The Atlanta Journal and Constitution* 30 Sept. 1999: 1C. Online. Lexis-Nexis.

Rozen, Leah. “Picks and Pans: Screen.” *People* 20 Sept. 1999: 39. Online. Ebscohost.

Simon, John. “Hot ‘Burbs, Hotter Paris.” *National Review* 11 Oct. 1999: 63. Online. Ebscohost.

Strickler, Jeff. “American Beauty Defies Labeling: One Family’s Story is Drama, Comedy and Romance.” *Star Tribune* 19 Sept. 1999: 10F. Online. Lexis-Nexis.

Travers, Peter. “Movies.” *Rolling Stone* 30 Sept. 1999: 99. Online. Ebscohost.

Turan, Kenneth. “Movie Review: The Rose’s Thorns; Families Get Scratched as They Reach for that Perfect Bloom in Provocative American Beauty.” *The Los Angeles Times*

15 Sept. 1999: F1. Online. Lexis-Nexis.

Vineburg, Steve. “American Beauty: No Joy in the Gilded Suburbs.” *The Chronicle of Higher Education* 46 (29 October 1999): B10. Online. Ebscohost.

West, Woody. “Hollywood Defines Deviancy Down.” *Insight on the News* 22 Nov. 1999: 48. Online. Lexis-Nexis.

¹ The following definitions can be found in Hirsch. See “Works Cited.”

²For additional information on Gerbner see: Gerbner, George, Larry Gross, Michael Morgan and Nancy Signorielli, “The ‘Mainstreaming’ of America: Violence Profile No. 11,” *Journal of Communication*, 30.3, 1980: 10-29.

Censorship in Advertising: The United States Versus China

by Sara Kocer

for Professor William Slaymaker's Ethics and Values class

In the book *Reason and Insight: Western and Eastern Perspectives on the Pursuit of Moral Wisdom*, authors Timothy Shanahan and Robin Wang (2003) pose the question, "Would requiring that advertising only include truthful claims be a form of censorship?" (p. 412). Censorship is defined by *Webster's New World Dictionary* as "the power to examine literature, mail, etc. and remove or prohibit anything considered obscene, objectionable, etc." Therefore, if false or misleading statements are considered objectionable and are prohibited from advertising, this would fall into the classification of censorship. The main objective of censorship is to limit or eliminate content of a questionable nature. In this regard, advertising is already being censored by various regulatory agencies, networks, editors, and a multitude of others. Therefore, the more important question is not whether requiring only truthful statements in advertisements is censorship, but are the current regulations put on advertisements not strict enough.

This paper will discuss and compare the censorship of advertisements in the United States with the censorship of advertisements in China. It will also include a look at the various regulatory agencies involved in the censorship of advertisements in both the United States and China. From there it will be determined if advertisements are in need of stricter censorship regulations, or if they should be allowed to stretch the truth in the name of persuasion.

Censorship

The United States

American culture struggles for a balance between freedom of speech and expression, and the moral obligation to protect vulnerable and impressionable members of society. "To the American press the adoption of a system of media ethics smacks

of an infringement on their free expression rights" (Klotzer, 2001, p. 30). While the First Amendment does protect the right to free speech, it is also important that the media keep in mind that they have certain duties and responsibilities to society as influential leaders (Klotzer, 2001). On the other hand, "without ownership or access to the media, free expression is meaningless. What is the point of having the freedom to express oneself if one cannot get heard" (Klotzer, 2001, p. 30). The best solution is to balance the rights of an individual to express him/herself against the rights of society. "The fundamental conflict between freedom of enterprise and freedom of speech can be resolved by realizing the neither freedom is absolute" (Klotzer, 2001, p. 30).

Advertisements, along with other forms of media, currently have several restrictions placed on what they can or can't do and/or say. Not only are regulatory agencies concerned about what advertisers' messages say, but also what they don't say. "A main influence of the media is by omission: what they do not say is more influential than what they do say" (Klotzer, 2001, p.30). For this reason it is required that certain advertisements, such as medicine ads and ads that make scientific claims include sufficient information so as not to mislead the consumer.

The content of the advertisement is also scrutinized. It should be appropriate for the audience it is aimed at, as well as any secondary audiences that could view the advertisement. An example of this is the cigarette ads that feature Joe Camel. These ads had to be pulled because people felt they were appealing too much to children due to the use of a cartoon character as a spokesmodel. Now, because of lawsuits, "the tobacco industry faces its biggest challenge: un-marketing its product" (Goldman & Fahey, 1997, p. 30).

Another example of advertising censorship due to inappropriate content based on its targeted audience is banning "ads for birth control and pregnancy-related services from school newspapers" (Stein, M.L., 1998, p. 28). A San Diego County school district banned such ads from its school newspapers, stating "that parents must have a say in their children's sex educa-

tion” (Stein, M.L., 1998, p. 28). Many newspaper industry officials are opposed to the ban, stating that it crosses over into censorship, which under state law is illegal, with few exceptions (Stein, M.L., 1998).

Another example of censorship in the United States is the V-chip. “There’s been an almost unanimous adoption of content-based TV ratings, the better to protect kids from somebody’s notion of unacceptable sex, violence, and dirty talk” (Goldman & Fahey, 1997, p. 30). This widespread rating system has helped the V-chip to become possible. The V-chip allows “telev viewers to block out any viewing materials, including commercials that they consider unfit for their families” (Goldrich, 1998, p. 4). Originally, the V-chip was just to be used for blocking out programs rated unsuitable for children (Goldrich, 1998). The plan to include the ability to block out unrated news, sports, and commercials has made broadcasters nervous, even to the point that they have threatened to boycott the chip by “not coding their shows electronically to facilitate V-chip use” (Goldrich, 1998, p. 4). The main effect the V-chip will have on television advertisers is that they will have “to be more creative in communicating their clients’ messages to television audiences” (Goldrich, 1998, p. 4).

China

In comparison with the United States, China is much more conservative and exercises a higher degree of media censorship. China can be further broken down into two parts: Mainland China and Hong Kong. Between these two subparts of China, Hong Kong is the more liberal of the two, allowing slightly more freedom in its media (Stein, P., 1999).

Even though advertising in China has increased at a rapid rate recently, “the advertising industry is not yet fully developed in China” (Taylor & Raymond, 2000, p. 292). When China was “a purely socialist economy,” advertisements were very strictly regulated (Taylor & Raymond, 2000, p. 292). An era of increased regulation along with the state ownership of the adver-

tising industry was brought about in 1949 (Dongsheng, Weijiong, & Vertinsky, 2002). “During the ‘Cultural Revolution’ spanning from 1966 to 1975, the government viewed advertising as a very negative, even evil, aspect of capitalism and there was virtually no commercial advertising” (Taylor & Raymond, 2000, p. 292). Things started to change in 1978 when an “open door” policy was adopted (Taylor & Raymond, 2000). From then on advertising grew but was still heavily regulated. In 1995, the Advertising Law was passed to allow some added freedom to advertising, although it still carried restrictions with it (Taylor & Raymond, 2000). One such regulation that the Advertising Law imposed was “that advertising should safeguard the dignity and interests of the state” (Taylor & Raymond, 2000, p. 292). This regulation goes along with China’s socialist viewpoint, in which society as a whole takes far greater precedence over individuals. The United States, on the other hand, tends to be more individualistic.

Another advertising regulation that differs from the United States’ is the banning of comparative advertising (Taylor & Raymond, 2000). While the United States allows comparative advertising, on the grounds that it is backed up with sufficient research, China does not allow any form of comparison advertising.

Superlatives are also banned from advertisements in China (Taylor & Raymond, 2000). In the United States, superlatives are allowed and used quite often. It is very common to see many products advertised as being “the best”. This can either be seen as a fact that needs to be backed up by research and evidence, or as an opinion that can freely be expressed. Personally, I feel that superlatives are opinions. I think most people in America take them as such when they are used in ads. They are used so often people should be able to deduce that not every brand in a product category can be “the best”.

Certain products are regulated more than others. For example, the advertising of cigarettes has been banned since the Advertising Law of 1995 (Taylor & Raymond, 2000). In comparison to the United States, this is quite a bit stricter. The U.S.

does not allow cigarette advertisements on television, but still allows magazine ads and billboards.

Another product under regulation is alcohol. In this aspect, China and the U.S. are very similar. “It is generally legal to advertise alcoholic beverages in China. The only government imposed restriction on which media alcohol can be advertised in is a regulation banning the television advertising of spirits with over 40 per cent alcohol content” (Taylor & Raymond, 2000, p. 293-294). The same regulation is placed on alcohol ads in the U.S.

It is legal to advertise pharmaceutical products as long as the Chinese government has approved them (Taylor & Raymond, 2000). There are, however, certain guidelines that must be followed. First of all, “the manufacturer must back up any statistical claims and any claims deemed questionable by the Chinese government must be backed up by research that is ‘recognized’ in China” (Taylor & Raymond, 2000, p. 294). Second, they are prohibited from making “extravagant claims or featuring names or images of medical experts, or testimony from doctors and/or patients” (Taylor & Raymond, 2000, p. 294). Third, the ads have to include the purpose or function of the product, where it is made, and how much it costs (Taylor & Raymond, 2000).

Another difference between advertising in China and the United States deals with undergarments and feminine hygiene products. “Undergarments and feminine hygiene products are rarely advertised on television or radio in the PRC for cultural reasons related to modesty” (Taylor & Raymond, 2000, p. 295). The United States frequently has television and magazine advertisements on both undergarments and feminine hygiene products.

Regulatory Agencies

The United States

Regulatory agencies watchdog advertisements and make up the restrictions advertisers must abide by. In the United States,

there are several regulatory agencies, ranging from those owned by the government to privately owned network censors.

The first restriction on advertisements is from the First Amendment. Although originally “the Constitution placed no restraints upon government regulation of commercial advertising, ...regulators possessed broad powers to control promotional activities by the early 1970s” (Boedecker & Morgan, 1995, p. 38). Between 1975 and 1979, the Court established that “the government could place reasonable restrictions upon the time, place, and manner of speech and could also enforce regulations that dealt with false, deceptive, or misleading advertising” (Boedecker & Morgan, 1999, p. 39). From the 1980s on, the restrictions placed on advertisements grew. As more forms of communication are becoming classified as commercial speech, the First Amendment protection for commercial speech is diminishing (Boedecker & Morgan, 1999).

Federal regulatory agencies are another form of censorship that ads must go through. First, there is the Federal Trade Commission, which is the primary regulator of advertisements within the United States. It has the authority to define what constitutes deceptive advertising (Arens, 2002). Next is the Food and Drug Administration, which requires ads involving food, drugs, or cosmetics to give complete and truthful information about the products (Arens, 2002). Finally, the Federal Communication Commission controls the content of ads through various communication media (Arens, 2002).

Advertisers also practice self-regulation through several associations. The American Association of Advertising Agencies ensures the moral standard of ad agencies by rejecting membership to any agency deemed unethical (Arens, 2002). Second, the American Advertising Federation sets the standards for responsible and truthful ads (Arens, 2002). The content of ads is regulated by the Association of National Advertisers (Arens, 2002). “A long and non-exhaustive list of statutes and regulations affecting advertising and promotions” is established by the Code of Advertising and Promotion and the Advertising Standards Authority (Sanderson, 2002, p. 14).

The final form of regulatory agency is network censors. “Censors at the major broadcast networks dictate to advertising executives and marketers what they can and cannot put on national television” (Voight & Melillo, 2002, p. 27). The two biggest concerns of the censors deal with the accuracy of claims and the taste of the ads (Voight & Melillo, 2002). Sex, violence, adult language, unsafe or anti-social behavior and controversial political views receive careful scrutiny” (Voight & Melillo, 2002, p. 28). The main goals of the network censors are to preserve the vision of the ads, protect social values, and prevent complaints from the audience (Voight & Melillo, 2002).

China

The Chinese government has a multitude of policies that regulate advertising and the media. The Unified Competition Law (UCL) contains several articles that regulate the morality of advertisements. Article 14 of the UCL states, “Business operators shall not fabricate or spread false facts that harm the commercial reputation of competitors or their merchandise” (Yeaman & Ryan, 2001, p. 64). While this article is fairly broad, article 9 goes into slightly more detail. “Business operators shall not make misleading false publicity through advertising or other means concerning the quality, composition, functions, uses, producer, period of validity and place of origin, etc., of merchandise” (Yeaman & Ryan, 2001, p. 64). Article 2 of the UCL is extremely broad and basically says that to be ethical when advertising: “business operators shall observe the principles of voluntariness, equality and fairness, maintain honesty and trustworthiness and abide by generally accepted commercial ethics in the course of market trading” (Yeaman & Ryan, 2001, p. 64).

Just as the United States has federal regulatory agencies, so too does China. The three main regulatory agencies are the State Administration for Industry and Commerce (SAIC), the State Drug Administration, and the State Development Planning Commission (Misleading Advertisements, 2002). “The State Drug Administration has responsibility for checking the contents of medicine adverts regularly and should report the results

to the State Administration for Industry and Commerce” (Misleading Advertisements, 2002). From there, the SAIC has the job of punishing those who do not comply with the proper regulations (Misleading Advertisements, 2002). Prices are regulated by the State Development Planning Commission to prevent pricing fraud (Misleading Advertisements, 2002).

While Mainland China has several formal regulatory agencies to dictate advertising standards, Hong Kong ads enjoy more freedom. Instead of lots of formal regulatory agencies, Hong Kong practices more self-censorship. “Imposed censorship hasn’t shut up Hong Kong’s boisterous press, but self-censorship has softened its tone and restricted the depth and direction of its coverage” (Stein, P., 1999, p. 49).

Conclusion

Throughout this paper I have discussed various examples of censorship in the United States and China, along with the different regulatory agencies that control them. Based on what I have found, it is my opinion that advertisements are already heavily censored. The restrictions placed on advertisements ensure that advertisements are, for the most part, fair and truthful. Added restrictions, such as ones calling for only truthful claims to be included in ads, would cause the possible elimination of comparative ads and superlatives all together. I think that we need to give people more credit for being able to tell fact from opinion and persuasion technique. “The public are sophisticated and recognize extravagant advertising when they see it (Sanderson, 2002, p. 15). The whole purpose of advertising is to persuade someone to buy a product or service. If you take out the persuasion aspect of advertising, which occasionally calls for the slight stretching of the truth, you take away the main function of advertisements.

References

- Arens, W.F. (2002). *Contemporary Advertising*. Boston: McGraw-Hill Irwin.
- Boedecker, K.A. and Morgan, F.W. (1995). “The evolution of

- first amendment protection for commercial speech.”
Journal of Marketing, 59, 38-48.
- “China: misleading advertisements pose headache-survey.”
(2002). *Financial Times Information Ltd.*
- Dongsheng, Z., Weijiong, Z., and Vertinsky, I. (2002). “Advertising trends in urban China.” *Journal of Advertising Research*, 42, 73.
- Goldman, D. and Fahey, A. (1997). “Unadulterated.” *Adweek Eastern Edition*, 38, 30.
- Goldrich, R. (1998). “V-reality.” *SHOOT*, 39, 4.
- Klotzer, C.L. (2001). “Media ethics must be assured by formal programs, says scholar.” *St. Louis Journalism Review*, 31, 30.
- Sanderson, P. (2002). “How to keep your head in advertising.” *Soap, Perfumery, and Cosmetics*, 75, 14-15.
- Shanahan, T. and Robin, W. (2003). *Reason and insight: western and eastern perspectives on the pursuit of moral wisdom*. Canada: Wadsworth/Thomson Learning.
- Stein, M.L. (1998). “Schools ban reproduction advertising.” *Editor & Publisher*, 131, 28.
- Stein, P. (1999). “Hong Kong’s press: while debate rages about media ethics, self-censorship quietly thrives.” *Nieman Reports*, 53, 49-50.
- Taylor, C.R. and Raymond, M.A. (2000). “An analysis of product category restrictions in advertising in four major East Asian markets.” *International Marketing Review*, 17, 292-295.
- Voight, J. and Melillo, W. (2002). “Rough cut.” *Adweek New England Edition*, 39, 27-29.
- Yeaman, D. and Ryan, D. (2001). “Advertising pitfalls in China.” *Managing Intellectual Property*, 112, 64.

The Discovery of Knowledge in Moral & Ethical Philosophy

by Stacey Korte

for Professor Kent Blaser's Ethics and Values class

Ethics and Values has provided me with the opportunity to examine various moral and ethical philosophies. Through the in-depth and intensive writings contained in books by James Rachels and James E. White, I have honestly begun to see these complex issues from different perspectives. Ethics, values, and moral philosophy identify controversial issues that I continue to ponder and evaluate.

The critical thinking that revolves around these moral problems or dilemmas is at a level that has challenged my own ability to evaluate and logically explain my position on issues. I aspire to read books, journals, or other articles that require critical thinking, and I know the reading material for this class has surpassed my expectations. As a result, I have acquired the ability to formulate my ideas and present them to the class. I realize that others may have had perspectives that are contrary to my own, but I welcome this as an opportunity for me to learn another side of the issue that I may have never given ample time to consider.

Ethics and Values has enabled me to learn about moral philosophies and problems that faced the world hundreds of years ago and those that continue to play vital roles in present society. I began my understanding of Ethics and Values with Socrates' question and response: "What is morality? We are discussing no small matter, but how we ought to live" (Rachels, pg. 1). A true definition of morality eludes many individuals because many rival theories offer various meanings to morality. Here I began my journey through *The Elements of Moral Philosophy* and *Contemporary Moral Problems*.

Cultural Relativism supports the idea that what people believe to be right or wrong differs from culture to culture. "Different cultures have different moral codes. What is thought right within one group may be utterly abhorrent to the members

of another group, and vice versa" (Rachels, pg. 16). Cultural Relativism challenges individuals not to condemn the moral codes accepted by other cultures. Cultural Relativism stands firmly on the foundation that what individuals perceive as right or wrong does not truly exist because they are basing their judgments on the customs of their society.

Cultural Relativism is one of the moral theories that I have learned about and believe is important to understand. I believe Cultural Relativism has created a challenge for each of us to open our minds and explore ideas and concepts that may have never been examined. Cultural Relativism has reminded me to keep an open mind while evaluating what I believe to be correct or incorrect.

People today may believe that their customs and beliefs are truly the best, without even considering another individual's perspective. Individuals seem to be too inclined to immediately defend their positions while condemning other people's points of view. I have learned throughout life and in this class that even if a person has an idea that is contrary to my own, I will examine both sides of the issue and try to understand the other perspective. Only then will I fully understand where the truth may really lie.

Cultural Relativism has taught me to be tolerant of other people's cultures and not to be too quick to judge them. However, I still feel some cultures have practices that should not be permitted, such as excision. I believe that I can condemn a certain practice by another culture without condemning the entire culture. I do believe that a practice conducted in another country that is not a practice in the United States may still serve a purpose. However, I am concerned for the welfare of these people in different countries because I am not in favor of practices that would inflict pain or suffering.

Cultural Relativism has enabled me to learn and develop a new way of looking at concepts, but I do believe that there are some moral rules that must be universal for the existence of all societies. Murder is a moral rule that must be common throughout the world, or destruction may result. If each society did not

enforce punishment for acts of murder, then this would destroy the world.

Learning and progress are inhibited if individuals believe their own customs are the very best and the only way to conduct affairs in the society. I have learned to open my mind and give careful consideration to various aspects of Cultural Relativism, while not embracing every aspect that supports this theory.

Ethical Egoism is a moral philosophy that says, “our only duty is to do what is best for ourselves” (Rachels, pg. 77). I have learned that this philosophy encourages individuals to pursue their own self-interests exclusively. Ethical Egoism is a theory about how people “ought” to behave, and it may be considered a radical view to individuals, such as Rachels. Rachels states, “Ethical Egoism fails as a moral theory” (pg. 90).

Ethical Egoism, however, is a very interesting theory to examine. The ultimate principle of a person’s conduct centers on self-interest, but this does not mean that individuals should avoid all other actions that could possibly benefit others. An individual’s interest may actually coincide with another’s interest, and by helping another individual, he or she may also be benefiting himself or herself.

Ethical Egoism supports the idea that if everyone looks after his or her own interest, then everyone may be more affluent. Individuals may not regard Ethical Egoism as a radical doctrine in all aspects. “It does not challenge commonsense morality; it only tries to explain and systematize it” (Rachels, pg. 83). Ethical Egoism does not support an individual who pursues his or her own interests or tries to gain the most pleasure in the short run. “Ethical Egoism says that a person ought to do what really is in his or her own best interests, over the long run. It endorses selfishness, but it does not endorse foolishness” (Rachels, pg. 78).

I, along with Ethical Egoists, do not believe that people have a moral obligation to help starving people. However, giving food or money to those who have nothing to eat would be very kind and generous. I have always dreamed of sponsoring a child in another country who suffers from malnutrition. I would

eventually like to fulfill my dream of helping a starving child, so I cannot label myself as a pure Ethical Egoist. Currently, I am not sponsoring a child, and I do not believe that I am acting immorally. I think people who feel that they have sufficient funds to help those individuals who are starving are very generous. However, they do not have a moral duty to help those less fortunate, but I commend their actions and hope to model them in the future.

Through my learning and understanding of this moral theory, Ethical Egoism is not an explicit issue. Egoists would not violate the basic laws of society to achieve their own self-interests. I believe some Ethical Egoists do have practical limits that they do choose to live by. I would not want to think that Ethical Egoists might kill someone or let another drown just because it suits their own interests. Ethical Egoism wants individuals to pursue their self-interests, but they still have an obligation not to harm other people.

Utilitarianism is another important moral philosophy. Utilitarianism is founded on the basis that what is morally right brings the greatest amount of happiness to the greatest number of individuals, while considering all individuals’ happiness equally.

The Utilitarian approach to the starving people of the world is contrary to Ethical Egoism. Ethical Egoists would not support means to supply food to hungry people because this practice alone would not lead to individuals pursuing their own self-interests. However, if an Ethical Egoist were presented with an opportunity to pursue self-interest while still helping the starving people, then Ethical Egoists would encourage this endeavor. Utilitarianism would encourage individuals to feed the hungry of the world because the happiness of not dying would outweigh the happiness derived from spending the money on an individual pleasure, such as eating pizza or a taco.

I have learned that Utilitarianism is a very difficult moral philosophy to completely understand because of the variations within the whole theory. The example of “The Survival Lottery,” by John Harris, reveals the complexity of an issue that may cause some Utilitarians to think one way, while others will

have a different perspective. If a survival lottery could be implemented in a society where two people who need medical attention could be saved by sacrificing a person who is randomly selected from a drawing, what would Utilitarians declare as the most appropriate action?

If a truly devout Utilitarian supporter stood firm on the belief that what is morally right is what brings the greatest amount of happiness, then it may be concluded that the Utilitarian would likely be in favor of killing one person for the sake of two people. However, other Utilitarians, especially those who firmly believe in the earlier Utilitarian approach, may conclude that since the survival lottery causes intentional harm to others, individuals should refrain from practicing the lottery. These individuals would seem to be supporting people's rights to protect themselves, but Rachels evaluates how Utilitarians view a personal right. "The notion of a personal right is not a Utilitarian notion. Quite the opposite: It is a notion that places limits on how an individual may be treated, regardless of the good purposes that might be accomplished" (pg. 108).

Immanuel Kant's theory that emphasizes absolute moral rules is one that has significant value. Kant says that these moral rules hold true without exceptions. Moral reasons have a foundation in consistency because once something is deemed as unacceptable, it must be unacceptable in all cases.

"Act only according to that maxim by which you can at the same time will that it should become a universal law. Act so that you treat humanity whether in your own person or in that of another, always as an end and never as a means only" (Rachels, pg. 131). Kant reveals that rational constraints must be on people's actions. The Categorical Imperative is used by Kant to analyze people's actions and determine if they are morally acceptable.

Kant also believes in the intrinsic worth of a human being. An individual has a human dignity that should not be violated. Human beings have certain rights that no one should take away from them, because the focus is on the importance of the individual. People, therefore, should never be used "as a means

to an end," but instead "as a means only." According to Kant, there is never a justifiable reason to manipulate another being who is a rational agent because that person would just be used "as a means to an end."

The other focal point of Kant's theory examines the issue of Retribution. He concludes that punishing individuals who have committed wrongs is acceptable; however, these criminals must not be subjected to rehabilitation or treatment because then society is trying to shape people into what they believe to be acceptable human beings. Kant states, "We do have the right to respond to their wickedness by paying them back for it, but we do not have the right to violate their integrity by trying to manipulate their personalities" (Rachels, pg. 136).

I have learned the differences between Utilitarianism and Kantianism by examining their contrasting features. Utilitarianism and Kant differ on the issue of Retribution. Jeremy Bentham, a Utilitarian theorist, said, "All punishment is mischief: all punishment in itself is evil" (Rachels, pg. 133). According to this statement, Utilitarians reject the idea of capital punishment or punishment in general because it creates unhappiness. Utilitarians may be able to justify punishment if it would lead to a greater happiness than unhappiness, but they also believe in rehabilitation or treatment for criminals.

Kant, however, supports Retribution because even though criminals suffer punishment, he believes they have brought this punishment on themselves. Utilitarianism focuses on the greatest amount of happiness for the greatest number of individuals, but Kant concentrates on rights, justice, and fairness. Rehabilitation would be an infringement on people's rights, so criminals must be punished based on the severity of the crime. All individuals, including criminals, are rational agents, and they should be held accountable for their actions.

I have learned that Kant's theory expresses many of the same concepts that religion has in its foundation. I agree with many of the ideas within Kant's moral philosophy; however, I have difficulty accepting the word "absolute," because there always seem to be exceptions to the rule.

I, like Kant, recognize the importance of the individual and the intrinsic value in each person. I agree that people have reason and logic and should be accountable for their actions. Individuals have the capacity to determine what is morally right or wrong. Once these individuals commit wrongs, they should be punished according to the severity of their crimes.

I am a Kantian, rather than a Utilitarian, because of the correlation I have discovered between Kant and my religion. Kant recognizes the intrinsic value of each human being, and I believe that God has placed value within each individual. I also believe that God has given people the ability to be rational individuals, and Kant also recognizes the importance of the individual. Kant's theory has allowed me to learn and discover a new insight to the formulation of moral rules and a closer look at a person's intrinsic value.

War and terrorism were important controversial moral problems to discuss. I learned about the four different types of pacifism, which include the universal pacifist view that all killing is morally wrong, another view in which pacifists believe all violence is wrong, a private pacifism that condemns personal violence but not political violence, and antiwar pacifism where pacifists believe it is morally wrong to be involved in war but permissible to practice self-defense. I gained a better understanding of the different forms of pacifism that exist in the world.

As I have learned about pacifism and its various forms, I have to conclude that I am not a pacifist. I do not completely identify with any part of the four types of pacifism. I believe that not all violence is wrong, because there are situations, such as war, in which violence is morally acceptable. Cold-blooded murder is morally wrong, but I also think that killing can be used in self-defense.

As Cultural Relativism taught me to develop a new way of looking at ideas or concepts, Laurie Calhoun's "The Terrorist's Tacit Message" opened my eyes to a view I had not previously considered before this class. I do not believe that individuals or terrorists should inflict pain on others to send a message to the world, but the underlying reasoning and explanations are intriguing to try to understand.

Terrorists must honestly believe they are fighting for a just cause, because why else would they devote their time, money, or even their lives to such a cause? Calhoun presented an interesting, thought-provoking idea: "People tend to ascribe good intentions to their own leaders and comrades while ascribing evil intentions to those stigmatized by officials as the enemy" (White, pg. 622).

I had not approached the issue of terrorism or war in this manner. I ask myself why terrorist attacks are seen as morally unacceptable, while the actions of nations that drop bombs on other countries are justifiable. The war and terrorism section has enabled me to learn various components and underlying concepts, while examining the moral issues associated with war and terrorism.

Pornography is another contemporary moral problem that I have learned is difficult to exactly define. "How should we define pornography?" (White, pg. 359). Through our class discussions, I have encountered the complexity of stating a precise definition because of the subjectivity surrounding the issue. What is considered pornographic material to some individuals may not be to others. I learned that the Supreme Court in the case of *Miller v. California* (1973) associated pornography with the word "obscenity." Even with the Court's definition, I believe a universal definition accepted by all individuals is almost impossible to formulate.

My definition of pornography would incorporate the ideas of a sexually arousing experience, visually graphic material with obscenity, and sexually explicit material with or without violence. The material would also have to lack scientific or artistic value. I have asked myself what constitutes pornography and tried to identify many aspects that would be part of this moral issue, but I realize other individuals will have different definitions contrary to my definition.

I disagree with Barry Lynn, who concludes that the First Amendment should protect pornography. I agree with the Supreme Court and support the position that pornography should

not be protected as a form of free speech. I believe pornography is degrading for women and men, as does Ann Gary, and I think the dehumanization of individuals should not be protected in the Constitution. People are treated as sex objects, and many individuals within society have negative connotations associated with pornography. As one drives through cities, adult video stores can be seen; however, there are usually brick walls surrounding the buildings to conceal the identity of individuals who are viewing this sexually explicit material.

I, personally, believe that it is morally wrong to view pornographic or sexually arousing material. However, this has become a part of society and will continue in the future. Ann Gary states, "In conjunction with other attempts to change this set of attitudes, it seems preferable to try to change pornography instead of closing one's eyes in the hope that it will go away. For it seems realistic to expect that pornography is here to stay" (White, pg. 385).

While some may debate pornography viewed by adults, child pornography is an area where more individuals unite and condemn this moral problem. I think of child pornography in terms of children being used by adults to perform sexual favors or allow certain touching. However, I have learned that another area of child pornography is the access that children have to pornography on the Internet.

I believe that it is morally wrong for adults to take advantage of vulnerable children who are confused about what is right and what is wrong. I consider these adults to be predators who prey on unsuspecting children to fulfill their own sexual desires. The legal system must enforce penalties that reflect the severity of the crime (just as in Kant's theory of Retribution).

Parents must also restrict their children's access to pornography on the Internet. I realize that parents cannot watch their children every minute of every day, but they should be monitoring the sites being visited. Children have very susceptible minds that are easily influenced, and these experiences may change their lives forever.

Ethics and Values has been a class that has helped me

learn and discover many moral issues and philosophies. I have learned through the reading material, class discussions, group discussions, and guest speakers on campus, as well as writing papers for class. Cultural Relativism, Ethical Egoism, Utilitarianism, Kant, war and terrorism, and pornography are areas of study I enjoyed learning more about and identifying different views surrounding these issues. I have also gained more knowledge on Psychological Egoism, Social Contract Theory, capital punishment, euthanasia, and animals' right. Each area of study has presented new material I did not fully understand nor was aware of before I took this class.

Ethics and Values has truly been a thought-provoking experience I would recommend to other individuals. The philosophies, moral problems, and different perspectives have given me a chance to examine my own values. I have learned about the different philosophies and how they compare and contrast with each other; I have learned how to approach various topics and consider different perspectives; I have learned that issues may be debated and a true explanation or one clear definition may be unattainable; and most of all, I learned that discussion and communication are essential to unlocking the difficult underlying concepts within moral and ethical philosophy.

Management of Pediocin JD for Determination of Greatest Antimicrobial Ability

by Jennifer L. Stanton

For Professor Doug Christensen's Biology Research project1

Introduction

Many bacteria produce ribosomally synthesized antimicrobial polypeptides known as bacteriocins. These biologically active proteins are heat-stable, membrane-permeabilizing cationic peptides (4,5,6,12,16). Bacteriocins are usually made up of less than 50 amino acid residues, and can be categorized in either one of two groups. Class I bacteriocins, often referred to as lantibiotics, are made up of modified residues, whereas class II bacteriocins are without modified residues (5,6,10,12,14,18). Bacteriocins have been found to have antimicrobial activity as additives in the food industry, and a potential use in controlling topical infections (3,9,10,12,14,18). Nisin, a class I lantibiotic, was the first bacteriocin used in the food industry (16). Unfortunately, early studies indicated that Nisin and other related bacteriocins had a very narrow range of activity. However, additional research showed that bacteriocins produced by lactic acid bacteria have a much broader range of action (4,5,12,16).

Lactic acid bacteria (LAB) are gram-positive, cocci microorganisms. They specialize in sugar fermentation and lactic acid production. LAB are aerotolerant anaerobes and include bacteria such as *Lactobacillus*, *Streptococcus*, *Leuconostoc* and *Pediococcus* (11). Bacteriocins produced by these microorganisms have strong antimicrobial action against closely related bacteria species including other LAB, gram-positive bacteria and weakened gram-negative bacteria. Due to their vast span of activity, LAB bacteriocins are often used for started cultures of fermented foods (3,4,5,12,14,16,18). *Pediococcus* produces a bacteriocin, known as pediocin, which has been found to be very useful as a food preservative.

In general, *Pediococcus* is a homofermentative, gram-positive lactic acid bacteria. The FDA (Food and Drug Admin-

istration) has declared *Pediococcus* to be a GRAS (Generally Recognized as Safe) organism, which has allowed its use as an additive in the food industry (4,18). *Pediococcus acidilactici* PAC1.0 and *Pediococcus acidilactici* H are two strains of these bacteria that produce identical bacteriocins, respectively known as pediocin PA-1 and pediocin AcH. *P. acidilactici* PAC1.0 contains the ped operon, consisting of four genes (ped A, ped B, ped C, ped D) that codes for pediocin PA-1 production (18). Likewise, *P. acidilactici* H has a pap operon that is identical to ped operon of *P. acidilactici* PAC1.0, only its genes are pap A, pap B, pap C and pap D (14). A two-component signal transduction pathway regulates the operon. The pathway is made up of a histidine protein kinase and a response regulator. There could possibly be a third component of the regulatory system. In several cases, a self-secreted peptide appears to act as an extracellular signal to initiate transcription of the operon (16).

Early research indicates that the ped/pap A and ped/pap D genes of the pediocin operon are essential for the production of pediocin. Ped/pap A encodes for the protein's precursor, and ped/pap D encodes for an ATP-dependent translocator required for the transfer of pediocin across the cytoplasmic membrane. Ped/pap B and ped/pap C were thought to be non-essential genes that provided specific immunity for pediocin (18). More recent research has indicated that the previous description of the ped/pap operon is not completely correct. The ped/pap A gene is made up of 62 amino acids, and encodes the pediocin's precursor, as previously mentioned. In addition, ped/pap B was still found to play a role in specific immunity, and was found to be 118 amino acids in length. Contrary to previous research, the ped/pap C and ped/pap D genes share the role of encoding proteins for membrane translocation. Ped/pap C is 217 amino acids in length, and is specifically responsible for encoding the membrane fusion protein (HlyD) and ped/pap D, 718 amino acids, encodes the ATPase (HlyB). However, as mentioned before, ped/pap C is non-essential. Pediocin can be produced and can function without the membrane fusion protein, but is much more effective with it present (14). After translation of the genes, the

pediocin precursor is cleaved behind a double glycine residue, resulting in the mature pediocin protein comprised of 44 amino acids (9,10,14,18).

Mature pediocin and pediocin-like bacteriocins are thermostable proteins that function under a wide range of pH. Pediocin-like bacteriocins include pediocin PA-1, sakacin P, leucocin A, curvacin A, mesentericin Y105, carnobacteriocins BM1 and B2, enterocin A and P, bavaricin MN, piscicolin 126 and V1a. They have between 40% and 60% similarities. The differences in pediocin-like bacteriocins are in the specificity of each individual protein (5,6). Pediocin and pediocin-like bacteriocins are made up of two parts, the N-terminal half and the C-terminal half. The N-terminal half is made up of a YGNGV motif and contains a disulfide bridge. This area of the protein is responsible for the high amounts of similarities between pediocin-like bacteriocins. The N-terminal forms a triple-stranded antiparallel beta-sheet. It is a hydrophilic, cationic region that mediates the initial binding of the bacteriocin to the target cell by electrostatic interactions. The N-terminal half of the protein is considered the conserved portion of the protein (5,6,12).

The C-terminal half, or less conserved portion of the protein, is the hydrophobic, amphiphilic region of the bacteriocin. It is responsible for penetrating into the hydrophobic part of the target cell's membrane, mediating membrane leakage. The amphiphilic region of the C-terminal half forms an alpha-helix structure made up of 15 to 20 amino acid residues that stretch from the middle of the half to the end. The C-terminal half is the portion of the protein that is responsible for determining target cell specificity. This portion must come in contact with a specific entity on the target cell. A specific peptide fragment may recognize the entity itself on the C-terminal portion (5,6,12). In pediocin PA-1 and AcH a second disulfide bridge is found on the C-terminal half. This second bridge increases the potency and target cell specificity of the bacteriocins (5,12). This gives pediocin a more specialized mode of antimicrobial activity.

In particular, pediocin exhibits high levels of antilisterial activity (3,5,10,12,18). *Listeria monocytogenes* is a gram-posi-

tive, food-borne pathogen that causes major problems in the food industry due to its ubiquity, ability to grow at refrigeration temperatures and ability to grow over a wide range of osmotic pressures. (1,15,17). It is a facultative, intracellular pathogen that is widely spread through soil, decaying vegetation and food. *L. monocytogenes* requires nutrients from foods and the cytoplasm of host cells in order to survive and propagate (17). It enters the cell through a membrane-bound vacuole. The pathogen quickly escapes the vacuole and moves into the cytoplasm using actin polymerization. This form of motility allows *L. monocytogenes* to infect adjacent cells, causing a wide-spread infection (15). The infection, known as Listeriosis, can cause major health problems in pregnant women, such as abortion, stillbirth, neonatal meningitis and neonatal sepsis. It can also cause meningitis, meningoencephalitis or bacteremia in unhealthy adults (15). Pediocin's antimicrobial activity against *Listeria monocytogenes* makes it a good defense in combating this food-borne pathogen.

The purpose of this study is to determine the best working environment for pediocin to function as an antimicrobial agent. Temperature, pH and the presence of other bacteria affect bacteriocin production and function (16). The best environment will be determined by isolating pediocin JD, and then testing its temperature threshold, pH threshold and shelf-life by exposing it to a variety of temperature, pH and storage durations, and then placing it in the presence of *Listeria monocytogenes*. The effectiveness of pediocin JD will be determined by the size of the zones of inhibition.

Methods and Material

Trial 1: Culture and Growth Medium: A strand of *Pediococcus acidilactici* was isolated and found to produce pediocin JD. MRS broth was inoculated with the *P. acidilactici* strand and then incubated at 37°C for 18-24 hrs. The cells were removed by centrifugation at 6000 rpm for 10 min., and the supernatant was retained for further studies (8). The *P. acidilactici*

was grown two times, once isolated from competitors and the second time in the presence of a competitor, *Listeria monocytogenes*. *L. monocytogenes* is the indicator bacterium that was used to determine pediocin JD activity. It was inoculated into TSBYE broth and inoculated at 37°C for 18-24 hrs.

Trial 2: Culture and Growth Medium: A strand of *Pediococcus acidilactici* was isolated and found to produce pediocin JD. MRS broth, Elliker broth and TSBYE broth were each inoculated with *P. acidilactici*, and then incubated at 37°C for 18-24 hrs. The cells were removed from each culture by centrifugation at 6000 rpm for 10 min., and the supernatant was retained for further studies (8). *P. acidilactici* was grown two times in each broth, once isolated from competitors and the second time in the presence of a competitor. Four different competitors, *Listeria monocytogenes*, *Lactobacillus*, *Lactococcus* and *Enterococcus*, were used. Each competitor also functions as indicator bacteria that were used to determine pediocin JD activity. Each bacterium was inoculated into TSBYE broth, MRS broth and Elliker broth and incubated at 37°C for 18-24 hrs.

Purification of Pediocin JD by Dialyzation in Deionized Water: The previously obtained supernatants were saturated with ammonium sulfate at 60% weight per unit volume. The solution was then precipitated overnight at 4°C. The recovered precipitate was then centrifuged at 6000 rpm for 15 min. The supernatant was then discarded and the remaining pellet, containing the crude pediocin JD, was resuspended in 5-10 mL of sterile water. The insoluble portion of the pediocin JD solution is responsible for most of the antimicrobial activity. The solution was then placed in dialysis tubing and soaked in deionized water for 3 hrs. for purification. The solution's pH was then neutralized to between 6.5 and 7.5 using diluted HCl and NaOH.

Purification of Pediocin JD by Size Exclusion Column: The previously obtained supernatants of *P. acidilactici* were saturated with ammonium sulfate at 60% weight per unit volume. The solution was then precipitated overnight at 4°C. The recovered precipitate was then centrifuged at 6000 rpm for 15 min. The supernatant was then discarded and the remaining

pellet, containing the crude pediocin JD protein, was resuspended in 5-10 mL of sterile water.

A resin size exclusion column was then poured and equilibrated using buffer C solution. The column was then saturated with buffer C solution, and 3mL of pediocin JD was loaded into the column. A continuous flow of buffer C solution was fed into the column as it ran for 3-4 hrs. Each vial collected 15 drops of solution, separating out different sized proteins into individual vials. The vial containing pediocin JD was then determined using a dot assay method.

Antimicrobial Assay of Pediocin JD: A dot assay method is used to test the antimicrobial activity of pediocin JD. Pediocin JD was dotted onto TSBYE agar plates. The plates were then coated with *L. monocytogenes*, the indicator strand. The plates were then incubated at 37°C for 18-24 hrs., or left out at room temperature for 36-48 hrs. After incubation the plates were examined for zones of inhibition around each dot of pediocin JD. To indicate adequate inhibition, the zones should be 2 mm, in diameter, or larger (2). Four variations of pediocin JD, pH altered, temperature altered and storage time variants, were used in the assay procedure.

Effect of pH, Temperature and Storage Duration on Antimicrobial Activity: Purified pediocin JD was to be adjusted with NaOH or HCl to different pH levels ranging between 2 and 12. The temperature of purified pediocin JD was to be adjusted and maintained at various temperatures ranging from 0°C to 40°C. Three samples were also to be subjected to various storage durations of 10, 30 and 60 days. Each separate sample was then to be assayed on TSBYE agar plates for activity.

***Pediococcus acidilactici* Identification:** The selected strain of *Pediococcus acidilactici* was subjected to a variety of tests to determine if it indeed was *P. acidilactici*. The bacterium was inoculated into urease, phenol red lactose, dextrose and mannitol solutions, as well as being spread onto Triple Sugar agar and Simmon Citrate agar, and was then incubated at 37°C for 18-24 hrs. Each test was then observed for color change, and the phenol red lactose, dextrose and mannitol for gas production as

well.

DNA Isolation: 90 mL of *P. acidilactici* media was centrifuged at 9000 rpm for 15 min. The supernatant was then poured off and the pellet was resuspended in TEN buffer at 1/20th the volume of the original media (approx. 5 mL). A few grams of lysozyme were then added, and the solution was left out at room temperature for 1 hr. Then, .3 mL of detergent, 10% SDS (Sodium Dodecyl Sulfate), was added and the mixture was inverted for 10 min. To remove proteins, 100 μ L of 5M NaCl₂ was added, followed by 1 volume of phenol. The solution is then inverted for 5 min. Next, the solution is centrifuged at 6000 rpm for 10 min. to remove proteins. The top layer is then removed, and 1 volume of chloroform is added, followed by a second round of centrifugation at 6000 rpm for 10 min. The top layer is then removed and 2 volumes of ice cold EtOH is added. At this point DNA should begin to precipitate and can either be spooled out and air-dried, or centrifuged and pelleted out of solution. Purified DNA is then resuspended in 20 mL of sterile water and frozen until use.

PCR: Polymerase Chain Reaction: In a PCR tube, combine 1 μ L of forward primer for the pediocin gene, 1 μ L of reverse primer for the pediocin gene, 3 μ L of PCR buffer, 3 μ L of Taq-Redi polymerase, 1 μ L of dNTP and 3 μ L of culture to 20 μ L of water. Three different culture types, inoculated culture, colony culture and isolated DNA, of *P. acidilactici*, were used. In addition, two different forward and reverse primers, FP1 and FP2, and RP1 and RP2, were used in combination with each other. So, four samples of PCR were done with each culture type.

The PCR solutions were then subjected to a series of temperature treatments for primer annealing purposes. First, they were kept at 94°C for 4 min. Then they were kept at 94°C and 50°C for 30 sec., each followed by 1 min. at 72°C. The PCR solutions were held at 72°C for 4 more min., and held at 6°C overnight.

Gel Electrophoresis: A 1% agarose gel was made using .3g of agarose in 30 mL of TAE buffer. The solution was boiled and allowed to cool and then poured into the electrophoresis

mold to solidify. The gel was then covered with TAE buffer, and then 14 μ L of each PCR sample and a marker were loaded into individual lanes within the agarose gel. The gel was then allowed to run at 70 V. for 1 hr. The gel was removed and soaked in Lithium-Bromide for 20 min., and then exposed to UV-light to view results.

Results

Results indicate that the ped operon responsible for the production of pediocin JD was either inactive or not present in the *P. acidilactici* strand of pediocin used in this experiment. No zones of inhibition were observed in any of the dot assays performed. Upon probing the *P. acidilactici* DNA for the ped operon, the electrophoresis gels indicated no gene present (see figures 1 & 2). Bacterial identification tests were used to confirm that the test bacteria were indeed *P. acidilactici*. All indications suggest this to be true.

Discussion

Attempts were made to extract and isolate the pediocin JD protein on three separate occasions. In the first attempt, *P. acidilactici* was grown according to the Trial 1: Culture and Growth Medium procedure outlined in “Methods and Materials.” The culture was then subjected to the dialyzation in deionized water purification technique discussed under “Methods and Materials.” The dot assay procedure indicated no zones of inhibition present. The second attempt included changing the purification technique to purification by size exclusion column. As in the previous attempt, the dot assay indicated reliable zones of inhibition. One small zone of inhibition was observed, but the results could not be duplicated. The third attempt followed the Trial 2: Culture and Growth Medium procedure outline under “Methods and Materials.” The dialyzation in deionized water purification technique was used, and again the dot assay indicated no zones of inhibition.

At this point, steps were taken to confirm that the test strand of bacteria was *P. acidilactici*. The *Pediococcus acidilactici* Identification procedure was preformed, and all tests indicated that the bacteria were indeed *P. acidilactici*. At this point, PCR

and gel electrophoresis procedures were performed. For the first attempt at PCR, inoculated culture of *P. acidilactici* was used. Gel results indicate no ped operon for pediocin JD production present. Colonial growth of *P. acidilactici* was used in the second attempt at PCR, and again gel results showed no indication of the ped operon present. The third attempt at PCR used isolated DNA, obtained by the DNA isolation procedure discussed in "Methods and Materials." As previously, the gel results showed no indication of the ped operon present.

In accordance with the results, it is clear that the ped operon responsible for pediocin JD production was either not present in the strand of *P. acidilactici* used, or was somehow being repressed, preventing the expression of the ped operon. Based on these results, further studies of *P. acidilactici* are needed. Some possible areas of exploration are repression of the ped operon, analysis of other *P. acidilactici* strains and possible mutagens of *P. acidilactici*. Exploring repression of the ped operon would help in determining if the operon is truly not present, or if it is just not able to undergo transcription due to some limiting or repressing factor. Comparing the test strain of *P. acidilactici* to other strains will help in determining if the test strain has been mutated, and the ped operon compromised. Finally, looking into possible *P. acidilactici* mutagens could help to identify factors that caused or could cause *P. acidilactici* to mutate.

References

1. Becker, L. A., S. N. Evans, R. W. Hutkins, A. K. Benson. 2000. "Role of sigma B in Adaptation of *Listeria monocytogenes* to Growth at Low Temperature." *Journal of Bacteriology*. 182: 7083-7087.
2. Bhunia, A. K., M. C. Johnson, B. Ray. 1988. "Purification, characterization and antimicrobial spectrum of a bacteriocin produced by *Pediococcus acidilactici*." *Journal of Applied Bacteriology*. 65:261-268.
3. Christensen, D. P., R. W. Hutkins. 1992. "Collapse of the proton motive force in *Listeria monocytogenes* caused by a bacteriocin produced by *Pediococcus acidilactici*." *Applied Environmental Microbiology*. 58: 3312-3315.
4. Dickson, J.S., P. Sundaram, R. J. Hubert. "Use of Pediocin AcH in Meat Preservation." Iowa State University, Department of Microbiology.
5. Fimland, G., L. Johnsen, L. Axelsson, M. B. Brurberg, I. F. Nes, V. G. H. Eijsink, and Jon Nissen-Meyer. 2000. "A C-Terminal Disulfide Bridge in Pediocin-Like Bacteriocins Renders Bacteriocin Activity Less Temperature Dependent and Is a Major Determinant of the Antimicrobial Spectrum." *Journal of Bacteriology*. 182: 2643-2648.
6. Fimland, G., R. Jack, G. Jung, I. F. Nes, and J. Nissen-Meyer. 1998. "The Bactericidal Activity of Pediocin PA-1 Is Specifically Inhibited by a 15-mer Fragment That Spans the Bacteriocin from the Center toward the C Terminus." *Applied Environmental Microbiology*. 64: 5057-5060.
7. Fraser, K. R., D. Harvie, P. J. Coote, C. P. O'Byrne. 2000. "Identification and Characterization of an ATP Binding Cassette L-Carnitine Transporter in *Listeria monocytogenes*." *Applied Environmental Microbiology*. 66: 4696-4704.
8. Henderson, J. T., A. L. Chopko, P. D. van Wassenaar. May 1992. "Purification and Primary Structure of Pediocin PA-1 Produced by *Pediococcus acidilactici* PAC-1.0." *Archives of Biochemistry and Biophysics* 295:1:5-12.
9. Horn, N., M. I. Martínez, J. M. Martínez, P. E. Hernández, M. J. Gasson, J. M. Rodríguez, and H. M. Dodd. 1999.

- “Enhanced Production of Pediocin PA-1 and Coproduction of Nisin and Pediocin PA-1 by *Lactococcus lactis*.” *Applied Environmental Microbiology*. 65: 4443-4450.
10. Horn, N., M. I. Martínez, J. M. Martínez, P. E. Hernández, M. J. Gasson, J. M. Rodríguez, and H. M. Dodd. 1998. “Production of Pediocin PA-1 by *Lactococcus lactis* Using the Lactococcal A Secretory Apparatus.” *Applied Environmental Microbiology*. 64: 818-823.
 11. Ingraham, C.A., J. L. Ingraham. 2000. *Introduction to Microbiology, second edition*. Brooks/Cole: United States.
 12. Johnsen, L., G. Fimland, V. Eijsink, and J. Nissen-Meyer. 2000. “Engineering Increased Stability in the Antimicrobial Peptide Pediocin PA-1.” *Applied Environmental Microbiology*. 66: 4798-4802.
 13. Lowry, O.H., N.J. Rosenbrough, R.J. Randall. 1951. “Protein measurement with the folin-phenol reagent.” *Journal of Biological Chemistry* 193:265-275.
 14. Miller, K. W., R. Schamber, Y. Chen, and B. Ray. 1998. “Production of Active Chimeric Pediocin AcH in *Escherichia coli* in the Absence of Processing and Secretion Genes from the *Pediococcus* pap Operon.” *Applied Environmental Microbiology*. 64: 14-20.
 15. Milohanic, E., B. Pron, P. Berche, J.L. Gaillard. 2000. “Identification of new loci involved in adhesion of *Listeria monocytogenes* to eukaryotic cells.” *Microbiology* 146:731-739.
 16. Nilsen, T., I. F. Nes, and H. Holo. 1998. “An Exported Inducer Peptide Regulates Bacteriocin Production in *Enterococcus faecium* CTC492.” *Journal of Bacteriology*. 180: 1848-1854.
 17. Pellegrini, B. E., P. Berche. 2000. “OppA of *Listeria monocytogenes*, an Oligopeptide-Binding Protein Required for Bacterial Growth at Low Temperature and Involved in Intracellular Survival.” *Infectious Immunity*. 68:7069-7077.
 18. Venema, K., J. Kok, J. D. Marugg, M. Y. Toonen, A. M. Ledeboer, G. Venema, M. L. Chikindas. “Functional analysis of the pediocin operon of *Pediococcus acidilactici* PAC1.0: PedB is the immunity protein and Ped D is the precursor processing enzyme.” Accepted for Publication in *Molecular Microbiology* 2002.