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Foreword

We are pleased to bring to you this year’s edition of *Spires*, Mercer’s Undergraduate Research Journal. Research demands stamina, dedication, and discipline. But, it also demands more. Active scholars have a responsibility to the wider academic community to make their work public. Publication, which leaves a permanent record of scholarly activity, invites scrutiny, commentary, and challenge from one’s peers. It thus involves risk in ways that mere research does not. We commend and congratulate the authors of these articles for their willingness to make public their findings.

The articles that follow survived a rigorous selection process. Each went through two rounds of anonymous evaluation by the editorial board and was chosen because of its sound argument, its solid and original research, and its command of the subject. Together, the articles represent the work of our students in the natural and physical sciences, the behavior and social sciences, and the humanities.

Although sponsored by the Honors Program, this journal recognizes the scholarly activity of undergraduates from various constituencies and from across the campus. We hope that it will serve to promote the culture of undergraduate research at Mercer in all fields.

We thank Provost Wallace Daniel and Karol Daniel, whose generous financial support made this journal possible. We also thank faculty mentors, whose careful, painstaking, and patient work shepherded our students through the long, sometimes tedious and frustrating, process of engaging in original research. Finally, we thank the editorial staff of the journal for performing heroically, tirelessly, and with good cheer.

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The Pirate Ideal: What Antebellum Young Men Truly Wanted to Be

Kimberly Campbell

In today’s historical writing, histories of previously marginalized groups abound. This body of work has placed new attention on the role of gender in history, but since its emergence in the 1960s, historians have generally placed more emphasis on the history of femininity than on the history of masculinity. Claiming that all history until that point had been written by and about men, many historians ignored the need to look at the role of masculinity historically. However, over the last decade, new research has rectified this omission, and historians have turned their attention to the way men viewed themselves and their gender. The greatest difficulty in learning about historical masculinity is the lack of explicit sources, since men did not often write such statements as “I am or am not an ideal man because. . .” Thus, historians are left with sources that carry implications about the nature of masculinity rather than with those sources that are directly explicit; however, these implications often contain gold mines of information, especially when found in literature.¹ Literary scholar William Taylor has observed that “Stories and novels, even bad and unskillful ones, possess an element of free fantasy which is sometimes very revealing.”² Antebellum authors often engaged in this “free fantasy” by creating a number of memorable characters.³ One type of tale that was central during this period was the pirate tale, and these antebellum pirate tales reveal three perspectives about antebellum masculinity, particularly in the South: men were expected to be handsome and well dressed without being dandies; they were required to embody a rather nebulous code of honor that included chivalry; and, finally, they had to take an active role in their own destinies.

Regardless of whether the pirates in antebellum stories are wreaking havoc on the coast or rescuing damsels from shipwrecks, they always look good doing it. In John Lauris Blake’s anonymously published Ramon the Rover of Cuba, and Other Tales, he wrote that the main character Don Ramon was “very tall and muscular.”⁴ In The Pirates Own Book, Charles Ellms described another pirate, Captain Roberts, as “tall, of a dark complexion, about 40 years of age, and
These men, as well as most every other protagonist in these pirate stories, were effortlessly handsome. Naturally, a gentleman in most any time period was and is expected to be attractive; however, the pirates of these stories enhanced their already pleasant physiques with their dress. During a battle, Captain Roberts was “dressed in a rich crimson damask waistcoat and breeches, a red feather in his hat, a gold chain round his neck, with a diamond cross hanging to it, a sword in his hand, and two pair of pistols hanging at the end of a silk sling flung over his shoulders.” The clearest implication from these texts, besides the fact that pirates were both naturally good-looking and swanky dressers, is that these men were not dandies. Despite their clothing and looks, the pirates were still deadly, and therefore they were excellent archetypes for antebellum men to emulate. Not only were these adventurers chivalrous men of action, they also always looked their best when performing their harrowing deeds.

The sense of honor implied by the word chivalry is integral to both the literary pirate and the southern gentleman from the antebellum period. In Blake’s Ramon the Rover of Cuba, a young lady said, “there seems to be quite a dash of chivalry about [Ramon’s] character.” This concept demolished the old stereotype of pirates that said they possessed voracious libidos which indicated their power as men; instead, Blake presented Ramon as the consummate gentleman toward ladies. In order to be a truly romantic pirate, these characters had to have some redeeming quality to offset their more nefarious activities, such as Ramon’s considerate behavior toward women. In fact, Ramon was rumored to “never [suffer] a lady to be ill used” and he had “spared more than one vessel on account of the female passengers” which are perhaps the deeds that earned him the young lady’s praise mentioned above. Antebellum men “had appointed themselves the protectors of women,” and Ramon clearly treated women with respect and protected them just as any good antebellum gentleman would have. Since the literary pirate already embodied the two prerequisites of gentlemanly behavior, a handsome physique and respect toward ladies, he was already in position to become a hero to young antebellum men; however, these pirates exhibited many other honorable qualities besides just chivalric behavior toward ladies that raised them still further in the eyes of antebellum males.
Ellms wrote about some of these pirates who offset their more questionable activities with honorable qualities. Captain Roberts exhibited courage under fire which mitigated his other crimes; on learning that an enemy vessel was approaching, “he slipped his cable, got under sail, ordered his men to arms without any show of timidity, dropping a first-rate oath, that it was a bite, but at the same time, resolved, like a gallant rogue, to get clear or die.”12 Quite similarly, Ellms described how the pirate Jean Lafitte acted with distinction under pressure. “The difficulty and danger far from discouraging this intrepid sailor, acted as an additional spur to his brilliant valor.”13 Furthermore, despite being offered power, influence, and money by the British, Lafitte informed the Americans that the British were trying to buy him to prevent him from helping with the American defense of New Orleans.14 Ellms gave further evidence of how noble Jean Lafitte was detailing how on the attack of an Indiaman, “The English deeming resistance fruitless, surrendered, and Lafitte hastened to put a stop to the slaughter.”15 Clearly, both of these pirates exhibited very honorable, almost knightly, qualities: Captain Roberts was unwavering in the face of fire, and Jean Lafitte held to his integrity and did not betray the Americans.

Although Ellms described both Captain Roberts and Jean Lafitte as courageous and honorable men, he did write about at least one pirate that he did not view in such a pleasant light. Captain Avery was not the same kind of man as the previous two pirates; “he was a fellow of more cunning than courage, and insinuating himself into the confidence of some of the boldest men in the ship, he represented the immense riches which were to be acquired upon the Spanish coast.”16 Despite the fact that Captain Avery is not a heroic pirate, contrasting his character with that of the other romantic pirates in Ellms’s *The Pirates Own Book* reinforces the value courage and honor played in antebellum society. Ellms seemed to consider Captain Avery a bit more villainous than Captain Roberts or Lafitte; in fact, Captain Avery’s fate seems to contain a moral. Although he managed to escape with an enormous amount of treasure, acquired through lies and deceit, a group of merchants quickly swindled it away from him. They told him that they would “handle” all of his diamonds for him, which they did, right out of his pocket and into their own.17 Clearly Ellms judged Captain Roberts and Jean Lafitte as both better pirates and men than Captain Avery, and because the former two were always courageous and honest, they led long contented lives after they ended their piratical careers.
However, not all of the pirates written about were such noble or courageous fellows as Captain Roberts and Jean Lafitte. Some of the characters were the more villainous sorts of buccaneers, worse than even Ellms’s Captain Avery, but even these pirates were not unredeemable. An honorable death erased many a dastardly deed. In telling the story of Blackbeard, Ellms left the reader without a doubt what a horrible man the pirate was; however, Ellms clearly sympathized with Blackbeard on his death stating “though the pirate was wounded by the first shot from Maynard, though he had received twenty cuts, and as many shots, he fought with desperate valor.” Ellms described one pirate in even worse terms than he described Blackbeard. Rahmah-Ben-Jabir was an absolutely wicked and ruthless man, but his death was “romantic.” He blew up himself and his entire ship when he was certain that his enemies were going to overrun him. Confronted by insurmountable odds, both of these pirates chose to die fighting rather than to surrender. This unwillingness to give in mirrors the need for antebellum men to be self-reliant. Men could not “surrender themselves to the march of events without losing their self-esteem,” and these pirates certainly did not surrender to anyone or anything. Much like the romantic pirates had to find the will in themselves to succeed in their chosen line of work, antebellum men believed they had to be independent in order for America to prosper. Between the ruthless and cruel nature of these two men’s lives and the fact that their deaths redeemed them, the integral role valor through independence played in antebellum society’s conception of the ideal male is obvious.

In direct contrast to the impolite Blackbeard and Rahmah-Ben-Jabir, Ramon and Lafitte exemplified some of the subtler characteristics of a gentleman. Although Ramon was a fighter, he did not fight without good reason. Ramon was nobly fighting a debased society; after his father disowned him and all his former friends in the shipping business refused to loan him a cent, Ramon “swore revenge against the whole race of merchants and sailors.” Fighting pointlessly would not have earned Ramon any respect, but fighting in order to avenge his slighted honor was not merely acceptable. Ramon was required to answer these injustices laid against him, or he risked losing his honor. Before the end of the story, Ramon does indeed take revenge on his enemies; his first capture belonged to one of the men who refused to help him with even the smallest loan. Though Ramon never fought unnecessarily as
he “was averse to making a disturbance” when none was called for.\textsuperscript{24} Ramon’s gentlemanly behavior was also evinced by Blake’s anecdote describing how Ramon did not want to unduly “frighten the fellow” who had paid him and his crew so many “polite attentions” by directing them to the correct port.\textsuperscript{25} Lafitte also quit fighting when it was no longer necessary. He became involved in “the cautious dealings necessary to found and conduct a colony of Pirates and Smugglers in the very teeth of a civilized nation.”\textsuperscript{26} Both Ramon and Lafitte served as exemplars showing that fighting was not always necessary; however if one’s honor was at stake, fighting was just about the only option left open to these men. After having acquired the basic necessities required of all gentlemen, literary pirates also began evincing many of the subtler characteristics of the ideal man; however, the most important characteristic of the ideal gentleman the pirate embodied, that he was the controller of his own destiny, cannot be understood without looking at the timeframe for the original idealization of the pirate.

Studying romantic literary pirates provides a window into understanding antebellum masculinity because antebellum culture gave birth to this type of character and the ideals they embodied. Before this period, the populace viewed pirates as the criminals they technically were under the law. Traditionally, “Colonial newspapers, including James Franklin’s \textit{New England Courant}, [had] published serious articles about piracy because, for them, pirates were not romantic; they were criminals who terrorized American coastlines and served as a real threat to lives and property.”\textsuperscript{27} Despite the very real problems pirates had been creating in the recent past, in the literary world their image was undergoing a makeover. In \textit{The Pirates Own Book}, which contains the story of Captain Roberts, Blackbeard, Jean Lafitte, Captain Avery, and Rahmeh-Ben-Jabir, Ellms wrote, “there are few subjects that interest and excite the curiosity of mankind generally, more than the desperate exploits, foul doings, and diabolical career of these monsters in human form.”\textsuperscript{28} Despite the fact that Ellms clearly stated pirates were “monsters in human form,” his audience, by his own admission, was already fascinated by these men.\textsuperscript{29} One historian referred to this dichotomy of loving these bad guys by stating, “The early pirates were ‘ruthless, unprincipled and notorious for atrocities,’ yet by the mid-nineteenth century their mythology had come of age, with popular books on Blackbeard and Lafitte that described the ‘adventurers’ as both despicable \textit{and} admirable.”\textsuperscript{30}
Later in the text of Ellms’s work, one pirate refers to himself and his men as “gentlemen of fortune,” a term highly suggestive of the place pirates resided in the minds of Ellms expected audience. The issues and responses that caused society in general to change its view of pirates reveal themselves if one identifies the timeframe for this shift.

This attitudinal shift probably occurred sometime in the late 1820s, because by the 1830s the articles and stories written about pirates were no longer serious pieces discussing the danger these men presented; instead, these works viewed pirates as “fearless, romantic, and stereotypical.” Pirate stories from the 1830s were usually no longer written as current event pieces but as “history” pieces just as Charles Ellms wrote The Pirates Own Book. Not only do these stories romanticize the lives of pirates, but they also give increasingly “sensational, romantic, and even mythical” descriptions of the appearance and character of pirates, such as the descriptions of Captain Roberts and Jean Lafitte above. These tales present pirates both as more noble and as more ignoble; no longer are they pirates who simply robbed the merchant marine. The men in these stories are either hard-pressed heroes or vicious villains, but no matter which one of these they are, they are always romantic.

The birth of the pirate as a romantic literary figure reflects the nature of antebellum masculinity at that time. These handsome, honorable, and active characters embodied the ideal gentlemen, particularly to Southerners. “Southerners liked their leading men not to make money but to be somehow affluent, not to work but to be somehow accomplished, not to give orders but to be somehow followed.” Daring pirate captains such as Ramon served as the epitome of this view. In a world of “ever-collapsing opportunities,” young men especially were increasingly drawn to these sorts of romantic figures, and the literary pirate was a perfect representation of what these young men desired. Pirate heroes were handsome, chivalrous, and most importantly they were in complete control of their own destinies. This last fact in particular generated a kind of magnetism around the romantic pirate because as “Americans began losing their autonomy, they might have longed for the free and adventurous life of the pirate at sea.” While being a controller of one’s own destiny may well have been important to all antebellum men, this trait was especially important to Southern gentlemen.
This loss of autonomy was reflected in the fundamental question young Southern males were facing toward the end of the antebellum period and was a central factor in their idolization of the pirate. “How could southern men live up to increasingly romantic ideals of civilizing manhood when the expansive work of winning the empire was giving way to the more mundane work of administrating it?” Facing futures entirely devoid of adventure, young men turned to literature only to reinforce the often romantic values of the age. Despite, or perhaps because, of “the constrictions of the 1850s,” stories about pirates at this time increasingly described them as “commanding, firm, courageous, magnanimous, professional, chivalric, restless, hardy, famous, able. . . daring. . . good swords[men]. . .unerr[ing] shots. . .gentle[men], adventu[rous], and. . . patriot[s]” because these are the traits men felt they themselves should possess. If a man did not possess all, or at least many, of these qualities, he found it very difficult to be a true man; without these traits, he might run into problems taking complete charge of his destiny and to allow fate rule of his life was a sign of weakness and feminine behavior. Besides possessing many admirable character traits, the pirate was more able to control his destiny because he lived on a type of frontier. Southern gentlemen of the 1830s could identify well with this position since many would have still lived in the relative frontier of America when they were young men, but their sons coming of age in the 1850s would not have had this experience. While this fact might seem inconsequential, the fact that “Southern men were obliged to not merely affect Civilization but to cause it” meant that the young men of the 1850s were doomed to failure from the start. They were “more educated than their fathers,” and “they were also under more pressure to live up to the version of civilized patriarchy that had become so integral to the South’s sense of self”; however, since they lacked the resource of the frontier their fathers had, they turned their attention toward increasing the unrealistic nature of their fathers’ already romantic ideals. They wanted to embark “on their quest to erect on the still primeval landscape a Civilization to stand for all time,” but they simply could not. The increasingly romantic nature of the literary pirate, a heroic figure who accomplished everything these young men dreamed of, reflects this fact.
Change bombarded the antebellum American world. These changes, which ranged from the emergence of the steam engine to greatly increased immigration and everything in between, profoundly influenced the lives of many Americans; however, men, especially Southern gentlemen, found that these changes were assaulting their idealized world. Literature, especially antebellum pirate tales, reveals the values men felt the need to reaffirm in these tumultuous times. The handsome, honorable, and active pirate heroes demonstrate the values of Southern men, since “the hero is not a personality so much as a set of aesthetic and culture alternatives.”

Men had to win their ladies’ hearts and then protect them, and they had to remain in control of the rest of their world while they performed the former tasks. This last quality was obviously the most troubling for young Southern gentlemen coming of age in the 1850s. Since “Southern men were obliged not merely to affect Civilization but to cause it, the emphasis falling on not merely the composition but the imposition of self,” these young men found they had nothing to reach for since their fathers had already done the work of creating their Southern Civilization.

These young men then turned to the “swashbuckling pirates portrayed in the media” because they “had many of the rogue qualities of the Western outlaw [today]; yet, the passage of time had shrouded them in the mist of legend. Pirate stories seemed almost nostalgic reminiscences of a manly and independent lifestyle,” which they were.

In the romantic pirate, young men saw an ideal role model who was not only handsome, but who also won the hearts and respect of ladies; furthermore, these characters never allowed anyone or anything else to decide what was going to happen to them. The attractiveness of this kind of man to young Southern gentlemen stripped of what they viewed as their essential masculine responsibilities was remarkably powerful. The romanticized literary pirate reveals how the “representative images” of the young Southern gentlemen’s culture “can tell us a great deal about [their] central concerns” during the antebellum period.

In a world where the romantic nature of life was essential, the harsh reality of the antebellum period forced men to look to literature to find their romantic heroes. The romantic pirate was everything they could have ever dreamed of; he was handsome, he was honorable and chivalrous, and he was in complete control of every aspect of his life. In creating these romantic pirates, regardless of whether they were heroes or villains, men revealed their concerns about their changing world, and
they changed the way society perceived pirates in the process. One can still see the impact of this last action today. Ever wondered why Captain Jack Sparrow is so idolized? Ask an antebellum Southern gentleman.

Notes

1. Although women did not always write explicitly about how they were or were not living up to the ideals of antebellum womanhood, they could be more open about their doubts and feelings on this subject than men could. The ideal gentleman was always assured of himself; thus, he was very limited in the amount of doubt he could express about his role in society. This fact alone decreases the likelihood of finding explicit sources about historical masculinity, and because women did not face this exact pressure, finding explicit sources is somewhat easier.


3. Ibid.

4. [John Lauris Blake], *Ramon the Rover of Cuba, and Other Tales* (New York: Nafis & Cornish, 1843), 114. Although many antebellum pirate tales exist, I only use two publications extensively in this paper because of the time and length constraints. Many pirate stories were published in antebellum periodicals and as short novels. See the bibliography for a longer list of primary sources not cited specifically in the paper.

5. [Charles Ellms], *The Pirates Own Book* (New York: Dover Publications, Incorporated, 1993), 95. *The Pirates Own Book* was first published by Charles Ellms anonymously through the Marine Research Society in 1837. Ellms wrote the book as a “history” of pirates, but the plausibility of many of his tales is doubtful. While some of the heroes in this work are actual historical figures, Ellms had to have taken some creative liberties to relate as much detail as he does.

6. Ibid, 95.

7. [Blake], *Ramon*, 115.

8. [Ellms], *Pirates Own Book*, iv.

9. I use the word “romantic” here to refer to the idealized nature of literary pirate. These characters exhibit all the traits of the perfect antebellum gentlemen, so they would
have been viewed as desirable by women of the period.

10. [Blake], *Ramon*, 114.


12. [Ellms], *Pirates Own Book*, 94.

13. Ibid, 58.


15. Ibid, 60.


18. Ibid, 344.


20. Ibid.


23. [Blake], *Ramon*, 35-37.


25. Ibid, 95.

26. [Ellms], *Pirates Own Book*, 60-62.


28. [Ellms], *The Pirates Own Book*, iii.

29. Ibid.


31. [Ellms], *Pirates Own Book*, 86.


33. Ibid.

34. Ibid, 70.
35. Ibid, 67. Once again, I use the world “romantic” here to refer to the idealized and desirable nature of these literary pirates. For a more detailed description, see note 9.


37. Ibid, 33.


39. Berry, *All That Makes a Man*, 35. Stephen Berry describes “civilizing manhood” in *All That Makes a Man*. Essentially, civilizing manhood is the notion that in order to truly be a man, males must not just maintain the world and society they lived in; they had to expand it. For further discussion see pages 25 through 34 in Berry’s work.


42. Ibid, 34.

43. Ibid, 31-32.

44. Ibid, 27.


46. Berry, *All That Makes a Man*, 34.


Bibliography


Novel Drive System for Spherical Robots

Kevin Eck

Introduction

As applications of robotics expand, the need for innovative and improved methods of drive systems increases. Drive systems that are more agile and durable are necessary as robots are frequently being used in harsh conditions. One type that has potential for providing an alternative to wheeled robots is a spherical robot in which the entirety of the robot is encased in a spherical shell. While wheels and tracks can only rotate in one direction, a sphere can roll in any direction. This would allow for greater mobility in extreme conditions. Spherical robots given enough torque can climb up steep inclines and over obstacles. This also allows the robot to operate well on uneven surfaces, which is more difficult for wheeled counterparts.

Several applications exist for robots of this type. The most common application thus far is security. Another strong potential use is exploration of dangerous terrain. This could include disaster relief or military surveillance. Spherical robots are also good candidates for the use of swarm robotic intelligence. One of the most exciting applications is sending spherical rovers to Mars or the Moon as seen in Figure 1. The spherical design could make exploration of wide territories of these extraterrestrial bodies easier.

Figure 1
Proposed Swedish spherical Mars rover

1
Currently, two methods exist for driving spherical robots. The first method, shown in Figure 2, has a one-directional drive inside the shell. To change the direction, the drive is rotated relative to the spherical shell. This changes the direction of the drive, and thus changes the direction of travel. The second, Figure 3, has three internal orthogonal axes inside the shell that can exert torque. By combining the torques, acceleration of the robot in any direction is achieved. However both of these methods present serious disadvantages. The first method cannot instantaneously accelerate in any direction. It requires either the robot to stop and rotate its drive or to rotate its drive as it is moving, which causes slower, wider turns. This is a major hindrance to the agility of the robot. In the second method the entire robot can rotate in various directions depending on which direction the robot is traveling. As such, it never has a permanent interior orientation or direction which is needed for cameras or any sensors requiring a consistent direction. Without cameras or sensors, a robot with this drive system would be much less useful.

Figure 2
One directional drive system

Figure 3
Three axes drive system
Purpose

The design challenge was to design a drive system for spherical robots that could successfully accelerate in any direction while keeping an internal orientation. This was to be completed for the Mercer University School of Engineering sophomore level honors project. Overcoming this design challenge presents several difficulties. The first is that there must be a separate, disconnected frame inside the spherical shell. If the entirety of the robot was connected, the whole robot would rotate with the shell. By allowing a frame or cage to roll inside the shell, a permanent direction can be achieved. The drive system also must be able to accelerate in any direction parallel to the horizontal. Any idea that used wheels touching the inside of the shell had to be discarded due to the fact that the wheels can only rotate in two directions. Any other rotation would be halted by friction.

Several ideas were considered. Most of the ideas hinged around the concept of a rubber sphere or ball on the bottom of the inside of the shell. The ball, termed “hamster” due to its function, was to act as an omni-directional gear. Initial concepts considered driving the hamster with a belt or wheel sitting on top of the hamster. However, to change directions, the wheel or belt had to be rotated. This brought the design back to the initial problem. Somehow, the hamster had to be made to rotate in any direction instantaneously.

Proposed Solution

After consideration, a solution was discovered. The design selected, as seen in Figures 4 and 5, has two wheels that have axes of rotation that are parallel to the horizontal and are perpendicular to each other. These wheels are both tangent to the hamster which is rotated by turning the wheels. By changing the direction and speeds of each wheel, the hamster can be rotated in any direction. This hamster sits on the bottom of the inside of the spherical shell. A system of bearings holds it in place. When the hamster is rotated, it turns the shell by acting as an omni-directional gear. This allows the robot to accelerate in any direction by simply powering the two different drive trains as needed. By combining the motion of both wheels, a direction that is a vector composite of the motion of both wheels should occur. In addition, the motion of each wheel should not interfere with each other. Instead, proper alignment will cause the wheel to act as a pivot of rotation for the other wheel.
When this drive system is mounted on a cage that rolls around inside of the spherical shell, it preserves a direction for anything mounted on the shell. This direction will be some horizontal direction. This allows for sensors and cameras to be effectively used inside the robot. It must be noted that a sensor mounted on the cage will not have a permanent direction that is some angle about the vertical axis. This angle will not be able to be controlled effectively. This does not pose a large problem because the robot will be traveling in nearly
every direction, so having sensors in every direction is desirable. Because the sensors will have a direction fixed relative to the drive system, the information from the sensors can be used for driving the robot.

**Testing**

To evaluate and demonstrate the capabilities of this design, a prototype of only the drive system was developed. The prototype excluded the shell and instead was mounted on a T-shaped aluminum frame as seen in Figure 6 on a table. This frame was attached to the table by clamps. To give the frame a clearance, wooden spacers were used between the frame and the table at the clamping points. To mimic turning a spherical shell, the hamster translated a sheet of poster board across the table. For the hamster, a rubber “bouncy ball” was used. The hamster was kept in place with three ball casters shown in Figure 7. These casters were placed opposite the wheels and on top of the sphere. The two wheels were powered by individual motors.

![Figure 6](image)

*Figure 6*

Drive system prototype frame
The drive system was controlled by a microcontroller shown in Figure 8. The microcontroller used was an open source platform. This was powered by either a wall plug or through a USB connection to a computer. The microcontroller directed a motor driver chip. This chip was powered separately from a DC power source. This configuration was used because the microcontroller only supplied minimal power through its signal ports. The motor driver chip took the logic from the microcontroller and amplified to supply the power and the logic for the motors. The speed and direction of the motors could be manipulated with the software. A switch was also included for better control of the circuits. When pressed, the switch would cycle through various modes of operation. The circuits were mounted on the frame with insulation to prevent short circuits.
To distinguish the motors, they were each assigned a name. One was “x” and the other “y.” The original motors used did not supply enough torque to turn the hamster or poster board. New motors from an old project were found. These motors had a higher gear ratio and therefore delivered more torque. The motors were attached to the frame so that the wheels touched the sphere at its vertical equator. The points of tangency were also aligned so that the angle between the two wheels was orthogonal.

To test the drive system, the motors were given different signals. For the initial testing, the primary directions were tested. These are directions with one of the motors on and the other motor off. The motor that was on was given full power. Using the switch, all four directions could be tested without having to reprogram the controller. The next set of directions tested was the directions where both motors were turned on with full power. This set also had four directions, ideally each half way between the primary directions.

Results

The prototype was successfully built without the need for design modifications. The principle behind the design was proven to work. The wheels did not interfere with each other. The combination of both motors was also shown to produce motion that was a composite of the two directions. However, while the principle was shown to work, several difficulties presented themselves. First the motors used were barely strong enough to drive the sheet
of poster board, thus the motors had to be used at full power. Therefore, the
direction of motion could not be finely controlled. Only the four primary and
the four secondary directions were successfully tested.

The second difficulty was poor traction due to alignment. The motors
that were used had poorly made gearboxes that allowed the shaft to wiggle.
This made it difficult to keep the wheels in contact with the hamster. The last
problem was that when the wheels turned away from the hamster, the wheels
tended to lift the hamster off of the table just enough to cause the sphere to
rotate without translating the poster board.

The prototype demonstrated that the design could both accelerate
in any direction and keep a permanent inner orientation. This indicates that
it would potentially be a good choice for driving spherical robots. The few
problems that did occur were equipment issues rather than design problems.
Better components and parts would minimize the problems with alignment
and traction.

Future Work

The project is far from being completed. Much more testing is required.
The next step is to build and test the drive system inside of a spherical shell. This
will require building the frame and shell. The shell will be difficult to make or
find. It will need to be a clear plastic and completely smooth on both the inside
and outside in order to not interfere with the hamster. The shell will need to
come apart so that the cage and drive system can be altered if needed. This
means that it will have to have two halves that either latch or screw together.
Since the control circuitry will be inside the shell, it will need to be powered
with batteries. The goal is to complete this for the Mercer University upper
level honors project within the next year.

Once the drive system has passed final testing, work on developing
applications can begin. One goal for this step of the project is to achieve some
level of autonomy. This will require the ability to observe the environment,
process the information and react to that information. One potential method
of doing this is to use a time of flight three dimensional camera. This would
allow the robot to know the approximate location of objects surrounding it.
The camera would also be able to send video back to the controllers. In addition
to autonomy, power will also be a key area of development. Strong battery life
and low consumption are crucial due to the difficulty of reaching the battery to
charge it directly. Solar panels inside the sphere could be a potential solution.
A shield of solar panels would possibly allow the robot to operate indefinitely
in sun light. Much of this could be tested in the next two years.
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References


Pride and Postmodernism: Gender in Literary Mash-ups

Matthew Gorgans

Jane Austen’s novels not only hold a distinguished position within literary history, but her ironic narrative voice also serves as a key insight into the gender roles of the early nineteenth century. Thus, those who consider works such as Austen’s to be comprehensive entities may be appalled by a recent phenomenon within popular fiction known as “literary mash-ups.” Quirk Classics offers one such novel entitled Sense and Sensibility and Sea Monsters. In this novel, the story’s heroines, Elinor and Marianne, struggle with the heartaches of courtship and also with sea creatures mutated in an incident known as the Alteration. By altering the original texts, the author, Ben H. Winters, is presented with the ability to humorously shift the gender dynamics and comment on the absurdity of the stereotypes and gender norms of the Regency era.

While Austen herself challenges the patriarchal expectations about women, the literary mash-ups approach satire in accordance with Mikhail Bakhtin’s concept of carnival. The carnivalesque creates a sense of renewal in literature that is accomplished through festive, if not chaotic, means. In the Middle Ages, a feast known as carnival “celebrated temporary liberation from the prevailing truth and from the established order; it marked the suspension of all hierarchical rank, privileges, norms, and prohibitions” (Rabelais 10). By humorously inverting convention, perception is impeded, and one cannot simply read the work in a traditional mindset, but must pay attention to every detail. Thus, rather than devaluing the original works, the comical additions create a state of alterity in which Austen’s satirical writing style is enhanced further through a layer of impossibilities, fulfilling another of Bakhtin’s ideas, heteroglossia. However, while Austen discusses the injustices placed on her heroines through irony, the literary mash-ups attempt to blur the distinctions between gender roles. Amidst the mayhem that the mash-ups add to the novels, members of society must protect their families from the fantasy characters that threaten their well-being. Thus, the literary mash-ups diminish the
level of believability present in Austen’s original works, but the post-modern perspectives of the mash-up novels extend her proto-feminist vision.

In “Discourse in the Novel,” Bakhtin asserts: “Language is not a neutral medium that passes freely and easily into the private property of the speaker’s intentions. Expropriating it, forcing it to submit to one’s own intentions and accents, is a difficult and complicated process” (Discourse 294). Bakhtin’s claim clearly does not account for the phenomenon of literary mash-ups, considering that one could criticize these novels for merely adding attention grabbing techniques such as fantastical creatures to components of classic literature. Some may even call literary mash-ups completely unoriginal in their construction. In Mashed Up, Aram Sinnreich discusses prevalent perceptions of configurable culture, primarily in the music industry. While he largely admires the combination of older materials with new, he admits, “the concept of stylistic originality requires the existence of its opposite: the concept of stylistic unoriginality, or derivativeness” (Sinnreich 127). Admittedly, not all literary mash-ups necessarily contain meaningful compositions or even display a great deal of thought in their plotlines, but in the same way that Sinnreich argues for the originality of the majority of mash-up music, the same is true of literary mash-ups. In relation to literature, Sinnreich writes, “Postmodern literature employs nonlinear narrative structures as a strategic challenge to the aesthetic strictures of conventional narrative, and as a symbolic reflection of the disjunctive consciousness that characterizes life in contemporary, postindustrial society” (202). While Winters does not specifically challenge Austen in his novel, he maintains Austen’s assertions, but, as Sinnreich asserts, in a manner that represents life in today’s culture.

Indeed, the application of Bakhtin’s essay to the mash-up enhances rather than detracts from its literary value. Bakhtin claims, “The prose writer makes use of words that are already populated with the social intentions of others and compels them to serve his own new intentions, to serve a second master” (Discourse 300). Thus, mash-up authors should not be dismissed as writers tampering with the literary canon for no apparent reason, but as admirers of Austen’s original texts. An example of Winters’ respect for Austen is revealed in Nora Nachumi’s essay, “As If!” In the essay, she praises Austen for her constant use of irony. Nachumi uses a passage from Sense and Sensibility as an example, quoting Elinor telling Marianne, “Had he been only in a violent
fever, you would not have despised him half as much,” (Nachumi 131) in reference to Marianne’s ridiculous need for passion and romance. The mash-up authors acknowledge Austen’s writing style by attempting to employ sarcasm and ironies in their own novels.

One example of Winters’ continuance of Austen’s ironic tone comes from the character of Lady Middleton. In Sense and Sensibility and Sea Monsters, Winters makes the authorial decision to designate Lady Middleton’s character as a princess of a small island who marries Sir John through an unfortunate set of circumstances. Winters relays that Sir John and a small group of men, “razed [her] village, murdered the men most triumphantly, and dragged away the women in their nets” (Winters 33). When Elinor and Marianne first meet Lady Middleton, she is described as, “reserved and cold, as if having been stolen from her native village in a burlap sack and made to be servant and helpmate to an Englishman many years her senior, for some reason sat poorly with her” (34). By using understated humor, Winters displays thoughtful production of his own novel and respect for Austen’s writing style. In addition, by modifying Lady Middleton’s character to that of an indigenous prisoner, Winters is able to address both gender and racial alterity. Regardless of what may have been considered as acceptable in Austen’s society, Winters takes a humanistic perspective in his novel and makes evident what is wrong with Lady Middleton’s situation according to today’s standards.

However, Winters has more than a mere respect for Austen’s text; his decision to use her work is done with purpose. In Recreating Jane Austen, John Wiltshire asks, “What then makes it possible to claim with some plausibility—some chance of being heard—that despite the popular myth, the critical fossil, there is another Jane Austen who is our contemporary?” (Wiltshire 10). Indeed, Austen’s magnetism in popular culture has had an incredible longevity. Her works are not merely advantageous choices for the mash-up authors because of the humorous effect of juxtaposing classic romance novels with gruesome fantasy. Rather, Austen is a respected literary figure whose themes of perseverance, strong-will, and, of course, proto-feminism, continue to hold relevance. Wiltshire claims, “Because the novels speak to us, we—as scriptwriters, as filmmakers and novelists, and as critics—can speak back to them” (12). Therefore, using Austen means having access to a literary legacy that continues to develop and adapt to the changes within society. Bakhtin observes this type
of phenomenon within culture and asserts, “Heteroglossia, once incorporated into the novel (whatever the forms for its incorporation), is another’s speech in another’s language, serving to express authorial intentions but in a refracted way. Such speech constitutes a special type of double-voiced discourse” (324). Thus, the mash-up authors have the opportunity to use Austen’s original themes and alter them to fulfill their own needs and actually further these themes rather than detract from them. Indeed, Bakhtin states, “The prose writer as a novelist does not strip away the intentions of others from the heteroglot language of his works: rather, he welcomes them into his work” (298).

One of the major issues that have translated from the original to the recent adaptations is Austen’s proto-feminist view. For Winters, however, gender must be approached in a slightly different manner because his authorial voice changes the novels’ genre from classic courtship to fantasy. Thus, in creating their own novels, mash-up authors must also confront the perceptions of women within science-fiction and fantasy. These stereotypes are described by Lizbeth Goodman in her book, Literature and Gender. She asserts that heroines within fantasy literature are “vastly outnumbered by active, assertive male characters” (Goodman 17). Goodman continues that when women are given a large role within these novels, they fit the stereotype of “Glinda the Good” (17), placing them in the role of the gentle and whimsical helper. In contrast, the contemporary authors avoid the misogynistic choice of resituating the novels’ male characters at the stories’ forefront merely to maintain the fantasy genre’s stereotypes about gender. Instead, they acknowledge that Austen’s works feature female protagonists, many of whom are strong-willed, and see this fact as an advantageous opportunity for expansion. Therefore, many of the traditionally masculine attributes associated with science-fiction are assigned to Elinor and Marianne as they work to find their roles within the hegemony of their new genre. In relation to strong female heroines, Goodman uses Ursula K. Le Guin’s novels to claim, “Women’s science-fiction is a burgeoning field” (17). Therefore, Winters acts as an inter-mediator, bringing Jane Austen into a new field of popular fiction in the twenty-first century.

In ensuring that the mash-up novels add original concepts to Austen’s works without altering them beyond recognition, the mash-up authors must then determine how they will blend the wit and formidable nature of the heroines with the brutality that their fantastical additions entail. To guarantee
that this process is accomplished coherently, Marianne and Elinor must take the forefront in the battle scenes rather than assuming the stereotypical role of waiting to be saved by their stories’ dashing heroes. In changing the way in which Austen’s women perform their gender, Judith Butler’s theory of gender constitution comes into play. In her essay, “Performativity Acts and Gender Constitution,” Butler writes, “gender is instituted through the stylization of the body, and, hence, must be understood as the mundane way in which bodily gestures, movements, and enactments of various kinds constitute the illusion of an abiding gendered self” (Butler 402). The mash-up authors change the social expectations of performing the female gender by incorporating aggressive physical force as an accepted employment of the body.

Though the heroines are described as being particularly skilled in these corporeal performances, possessing an extensive knowledge of sea creatures is expected of all the women, or people, for that matter. In describing Lucy Steele, Elinor’s rival for Edward Ferrars’ attention, as a woman of acceptable taste, Winters states, “Lucy was naturally clever: she was even quick with a blade” (Winters 122). Thus, her wit and abilities in combat are held in equal regard, displaying a combination of gender performance in Austen’s *Sense and Sensibility* and the mash-up recreation. Winters continues, “But her powers had received no aid from education: She was illiterate of even the most basic knowledge of fish species, navigation, and grades of net meshing” (122). For the women in *Sense and Sensibility and Sea Monsters*, domestic duties have been replaced with nautical survival skills. This comical perversion of Austen’s original work exemplifies Bakhtin’s concept of carnival. Bakhtin states that there are three types of carnivalesque humor (*Rabelais* 305). The literary mash-ups would fall under the second category, comic verbal compositions, which are defined as parodies. In relation to this type of writing, Bakhtin states, “All symbols of the carnival idiom are filled with this change of pathos and renewal, with the sense of the gay relativity of prevailing truths and authorities” (11). Thus, the humorous impossibilities that the mash-up authors bring to the texts actually allow for new perceptions of gender performativity within the novels.

Winters is also able to deconstruct the concept that Sandra Gilbert and Susan Gubar call the “angel in the house.” In “The Madwoman in the Attic,” Gilbert and Gubar assert, “a Victorian angel-woman should become her husband’s holy refuge from the blood and sweat that inevitably accompanies
a ‘life of significant action,’ as well as, in her ‘contemplative purity,’ a living memento of the otherness of the divine” (Gilbert and Gubar 24). Thus, by assuming dominant roles in the mash-up novel, Winters’ heroines are able to “‘kill’ the ‘angel in the house,’” as Virginia Woolf asserted is imperative for female authors (20). However, Elinor and Marianne’s ability to move outside of the domestic sphere is intriguing because of the very nature of literary mash-ups. *Sense and Sensibility and Sea Monsters* is adapted by a male author. Indeed, the majority of these popular fiction novels are written by males and incorporate elements of science-fiction that have come to be known as stereotypically masculine. Despite the flippant nature of these novels’ appearance, the authors demonstrate an understanding of the literary realm and a respect for the progression of the feminist movement.

Still, as Winters is working with Austen’s original text, Gilbert and Gubar’s idea of the anxieties of the female writer can also be considered. Jocelyn Harris writes, “Gilbert and Gubar call upon Jane Austen as the first proof of their argument that women overcame their anxiety of authorship by covert means, and imply that she is one of those women writers who revised male genres, ‘using them to record their own dreams and their own stories in disguise’” (Harris 88). Assuming that Gilbert and Gubar correctly assess Austen’s novels, heteroglossia within the texts becomes even more strongly present. Austen uses the writings of her male predecessors as a means of creating works that express her own proto-feminist visions, which are then adapted into twenty-first century popular fiction novels that perpetuate the feminist themes.

Similarly, in considering the literary mash-ups, one must determine if the male authors possess what Gilbert and Gubar label as “male anxieties about female autonomy” (Gilbert and Gubar 28). They state that “the monster-woman, threatening to replace her angelic sister, embodies intransigent female autonomy and thus represents both the author’s power to allay ‘his’ anxieties by calling their source bad names” (28). Those arguing that the male mash-up authors harbor the same sense of misogyny may turn to Winters’ portrayal of Lucy Steele as an obvious example. At the conclusion of *Sense and Sensibility and Sea Monsters*, the story’s protagonists make the shocking discovery that Lucy is actually a sea witch (Winters 319). Originally engaged to Edward, Lucy eventually marries his brother, Robert, and quickly makes him a victim of her scheme to achieve eternal youth. Because Lucy needs bone marrow
to prolong her life, Winters’ explains, “Robert had been consumed bodily on their wedding night. When they had come to the honeymoon suite the morning after the wedding, they found no Robert whatsoever, only a pile of bones, each cracked in two, with the marrow utterly sucked out” (334). While Winters does make Lucy a literal representation of the “monster-woman,” his alterations are of a carnivalesque nature rather than changing her role in the novel. In the original text, Austen writes of Lucy’s treatment of Edward after marrying Robert, claiming: “That Lucy had certainly meant to deceive, to go off with a flourish of malice against him in her message by Thomas, was perfectly clear to Elinor; and Edward himself, now thoroughly enlightened on her character, had no scruple in believing her capable of the utmost of wanton ill-nature” (Austen 199). Indeed, Elinor and Edward continue their conversation by discussing Lucy’s deceptive tactics in finding a man who would be able to provide her a stable household, which is changed in the mash-up to finding a man that can provide her with bone marrow. Instead of this change acting as a major transformation, the carnival comes into play as Lucy’s lack of moral character is heightened in her role as a creature designed for killing. Lucy’s added monstrous qualities do not reveal misogynistic tendencies in the mash-up authors, but merely act as a technique to further the fantasy genre within the novel. Indeed, a fantasy novel without a fantastical villain would be a strange logistical choice for an author.

As further evidence of Winters lacking any anxiety about women or the female author, he actually takes advantage of his role within the cultural hegemony as a male author by ridiculing his own sex. In Sense and Sensibility and Sea Monsters, Mr. Willoughby initially maintains the originally novel’s description of the dashing, chivalric hero. When Marianne finds herself submerged in a brook inhabited by a giant octopus, “a gentleman clad in a diving costume and helmet, and carrying a harpoon gun, ran to her assistance” (Winters 47). This gentleman, named John Willoughby, “was uncommonly handsome, [and] received additional charms from his voice and expression” (47). While his introduction features a heroic rescue, Winters’ additions to Willoughby depict him in an even more negative manner than the original text. While he displays an undeniable affection for Marianne near the beginning of the novel, Willoughby soon abandons her, seeking the situation most advantageous to relieving his financial and social problems. Hearing
that Marianne has taken ill, he finds the Dashwood sisters and eventually admits to Elinor that a device known as an octopus whistle is responsible for his rescue of Marianne. He confesses, “I have found that being rescued from the clasping, eight-tentacled embrace of a giant octopus tends to create—in a lady—a certain affection—” (292-293). Thus, not only are Willoughby’s heroic efforts devalued, but his actions are actually sinister because he disregards the possibility that his octopus whistle could actually lead to the physical harm of Marianne. Nevertheless, feminist implications can also be seen in Willoughby’s schemes. While the original text features Marianne hurting herself on a rainy day, and then being rescued from an occurrence in nature, she is the victim of intentional cruelty in the mash-up novel.

In “The Pitfalls of Postmodern Nostalgia,” Amanda Collins claims that the Austen films provide a perfect example of Jean Baudrillard’s concept of “simulacra” (Collins 81). Thompson’s version of Sense and Sensibility was released in 1995, the same year as a version of Persuasion. Collins states, “This juxtapositioning of the two films led to a curious trend among critics to praise the ‘pretty’ 1995 film version of Sense and Sensibility and to condemn the ‘gritty’ 1995 film Persuasion. This seems to indicate a public privileging of the romantic over the realistic. It also seems to indicate a preference for the ‘hyperreal’ over the ‘real’” (81). This need for aesthetically pleasing material suggests a lack of concern for substantial issues, a cultural phenomenon with which the literary mash-ups are not unfamiliar. Though they do not possess the same beauty of the Austen film adaptations, they are accused of seemingly lacking seriousness. However, the heteroglossic nature of the texts means that they are directly employing Austen’s authorial voice in conjunction with their new concepts, separating them from the “hyperreal” quality of many of the Austen films. While the films often choose to remove or alter any material found to be remotely shocking in the original texts, the literary mash-ups embrace these concepts in their reconstructions. Thus, the mash-up novels are just as employable for discussions of the feminist movement as the original texts.

Considering that Austen’s courtship novels are repositioned by Grahame-Smith and Winters to the genre of gory science-fiction and fantasy, a division of literature which Goodman indicates as traditionally masculine in both authors and characters, a reconciling of the distinct genres must occur.
in the mash-ups (Goodman 16-17). The mash-up authors chose to enact this process by uniting the interests and capabilities of men and women, which also means that physicality comes more into question than mentality. Butler reports, “Feminist theory has often been critical of naturalistic explanations of sex and sexuality that assume that the meaning of women’s social existence can be derived from some fact of their physiology” (Butler 403). Thus, she confronts the critics who claim that her argument for performativity does not account for an individual’s biology. She responds to these denigrators by saying that “the existence and facticity of the material or natural dimensions of the body are not denied, but reconceived as distinct from the process by which the body comes to bear cultural meanings” (403). Butler, then, acknowledges the body, but also makes distinctions between her concepts and gender as a strictly biological process.

The literary mash-ups diverge from Butler in that Winters accounts for his alterations to gender performativity by also changing his characters’ very anatomy. In describing Elinor, Winters writes, “She had an excellent heart, a broad back, and sturdy calf muscles” (Winters 11). Likewise, Marianne, “was as nearly powerful a swimmer, with remarkable lung capacity” (11). The characters in the novel experience a microevolution that enables them to survive in the perilous situation that the Alteration creates. Indeed, certain descriptions in the story almost imply that the figures Winters creates are of a different species. When Elinor and Marianne’s half-brother, John, proposes to give his mother an annuity after his father’s death, his wife Fanny protests, “people always live forever when there is any annuity to be paid them; and old ladies can be surprisingly quick in the water when chased; there is something porpoiselike, I think, in the wrinkliness of their skin” (14). The animal-like characteristics assigned to the individuals in the novel detract from the physical differences between men and women. In thinking of humans as animals, the conventions of civilized society and performance expectations are erased, leaving only an image of humanity in its most basic form. In addition, considering the fact that both genders must focus on survival, their physical abilities are utilized for the same cause. This unity thus causes a blurring of the distinctions between the male and female genders. While attempting to remove the differences between genders is not necessarily part of any branch of feminism, Winters’ method of accounting for gender performativity in his novel aids in removing the image of
woman as an alteric figure. By displaying the similarities between the genders, Winters works in reverse of defamiliarization and makes the strange familiar.

Jane Austen continues to be a voice of creative vision in today’s popular culture. Though her works are often modified and even altered to a point beyond recognition, Austen’s proto-feminist writings have earned their place in modern society. While *Sense and Sensibility and Sea Monsters* may appear disrespectful of Austen’s original texts at first glance, a closer inspection will reveal Ben H. Winters as an author who genuinely values Austen’s literary domain. On the first page of his novel, Winters writes, “This book is dedicated to my parents—lovers of great literature and great silliness” (Winters). Indeed, this sentiment comes to define the entire novel. Rather than attempting to make a mockery of the Regency novels, Winters effectively creates a sense of continuity between Austen’s works and his own. Winters is able to bring Austen’s proto-feminism into the twenty-first century by reinventing her novel as a work of popular fiction in the science-fiction and fantasy genre. In the same manner that Bakhtin claims that authors take the words of others and enhance them to fulfill their own purposes, *Sense and Sensibility and Sea Monsters* remains faithful to Jane Austen’s timeless courtship plotlines, just with a few man-eating jellyfish along the way.

**Works Cited**


In *Black Boy*, published in 1945, Richard Wright depicts his environment’s social hierarchies through autobiographical accounts of growing up in the South. Robert Felgar writes, “Although race has been one of the most powerful influences in shaping American society, as *Black Boy* makes all too clear, it is almost completely incoherent as an idea” (115). Wright describes how race lacks concrete definition, especially through the description of his grandmother, a woman with white skin but black identity, and he attempts to define himself as a human outside of the terms socially ascribed to his racial status. In rhetorically creating himself, Wright suggests that not only race and class, but the definition of being human, is determined by social constructs developed during slavery and later retained by the white population. The majority of white people in Wright’s novel hold blacks to be subhuman, incapable of intellectual pursuits and bound to serving white folk. This irrational racial supremacy relies upon a continuance of the status quo, and Wright proves an anomaly in that he defies the authority of these social constructs. For example, his friend Griggs says to him, “You act around white people as if you didn’t know that they were white. And they see it” (184). In observing his past, Wright suggests that white supremacy, though lacking foundations in reason, is perpetuated by both fear and poverty among his race. Blacks are kept in their place as “subhuman” because in general, they cannot aspire past meeting basic material survival. Wright asserts that recognizing one’s humanity requires having a purpose beyond survival, beyond acquiring food. Wright’s life story asserts his own humanity and supports the argument that essentialism in the South is a construction perpetuated by the juxtaposition of the material survival of the animal and the supposedly transcendent purpose of the human.

When Richard Wright was a young boy, his family constantly struggled for food. The theme of hunger runs throughout the entire autobiography, emphasizing the importance of it in his life, and this absence of food denotes an absence of humanity. His childhood anger, in association with his hunger,
intensifies his observation that a lack of food marks a person as subhuman. For example, when he is not allowed to eat his mother’s chicken when the preacher visits, he becomes “hot with anger” (Wright 34). Wright enhances these subhuman conditions of his youth through animal imagery. Left at an orphanage for a period of his childhood, he reflects on the routine: “Each morning after we had eaten a breakfast that seemed like no breakfast at all, an older child would lead a herd of us to the vast lawn and we would get to our knees and wrench the grass loose from the dirt with our fingers” (37). Wright compares the children, including himself, to cows, and their task seems oddly similar to grazing, but without the profit of nourishment. He uses similar imagery when he describes his father: “I stood before him, poised, my mind aching as it embraced the simple nakedness of his life, feeling how completely his soul was imprisoned by the slow flow of the seasons, by wind and rain and sun...how chained were his actions and emotions to the direct, animalistic impulses of his withering body” (43). His father has become a sharecropper, and in Wright’s perspective, that makes him no more than an animal. He feels both sympathetic and superior to his father. He continues: “Joy was as unknown to him as was despair. As a creature of the earth, he endured, hearty, whole, seemingly indestructible, with no regrets and no hope” (43). Wright makes a distinction between his own educated self and his ignorant father when he describes his father like an animal, completely controlled by seasons and weather and incapable of the human emotions of hope and despair, and this degradation proves a result of the social controls Wright fights against.

Based on the descriptions he makes of the uneducated people around him, Wright asserts a definition of “human” that requires a purpose beyond survival. He questions whether human-ness is either natural or a social construct, though. He writes:

When I brooded upon the cultural barrenness of black life, I wondered if clean, positive tenderness, love, honor, loyalty, and the capacity to remember were native with man. I asked myself if these human qualities were not fostered, won, struggled and suffered for, preserved in ritual from one generation to another.

(45)

Wright suggests that humanness is something ascribed to human beings in order to make them superior to animals, not something innate. He also realizes
that this same system of constructs can be used to make a hierarchy within the human community. If white people treat black people like animals, their system of power constructs can keep blacks in that lower position.

In *Richard Wright and Racial Discourse*, Yoshinobu Hakutani describes the white supremacist outlook when he writes: “Black men are categorized as animals, a mentality inherited from the days of slavery. Not only are black people considered to be white people’s servants, but they are expected to entertain white people as though they were animals in the zoo” (122). Wright clearly expresses this mentality in *Black Boy*. While in Memphis, Shorty the elevator operator degrades himself, acting like a “monkey,” because he needs money for lunch. He says, “I’m hungry, Mister White Man. I’m dying for a quarter” (227). Shorty lets the white man kick him in the rear for twenty-five cents, pretending the whole time to enjoy his animalistic antics. After getting kicked, he puts the quarter between his teeth and says, “This monkey’s got the peanuts” (228). In order to not go hungry, Shorty puts on a show, acting like the animal his environment’s social hierarchy suggests he should be. When Wright questions Shorty’s actions, Shorty says, “My ass is tough and quarters is scarce” (229). This instance shows how hunger leads to degrading activity and ultimately reinforces the subhuman status of blacks in Wright’s book. Hakutani adds, “Another degrading assumption white men hold about black men is that, since they are treated as animals, they are not supposed to possess intellectual capabilities” (122).

While in school, Wright goes to work for a white family. When he tells the white woman that he wants to be a writer, she says, “You’ll never be a writer. Who on earth put such ideas into your nigger head?” (147) In this woman’s opinion, Wright, as a black person, should not aspire past serving her and other whites. Wright comments, “The woman had assaulted my ego; she had assumed that she knew my place in life, what I felt, what I ought to be, and I resented it with all my heart” (147). The idea that he should not exceed servant status has no basis in logic; it exists solely as a rule created by slavery and continued through the mentalities of the white and black communities. Whiteness becomes the standard for humanness, and Wright, as a black boy, is not allowed to have intellectual pursuits or to become a writer because these activities are strictly human endeavors, and within his environment, strictly a white person’s aspirations. When Wright works at the optical company, he
asks one of the white workers about his job. The man responds, “What are you trying to do, get smart nigger?” (187) The man continues, “You think you’re white, don’t you?” (188) The white people feel threatened by Wright’s attempts to learn. Subconsciously they may realize that their supremacy, based on skin color, does not hold weight against intellect or real merit. If blacks remain impoverished and unable to aspire beyond material survival, though, whites can maintain their power.

Michel Foucault’s discourse on power constructs helps in examining the position of the black community in Wright’s story. In “Discipline and Punish,” Foucault writes, “Power is exercised rather than possessed; it is not the “privilege,” acquired or preserved, of the dominant class, but the overall effect of its strategic positions ñan effect that is manifested and sometimes extended by the position of those who are dominated” (550). In relation to race in Wright’s autobiography, the power of the whites is exercised based on a system of habit and violence. It is perpetuated by the continued subservient behavior of blacks and violent behavior of whites. Foucault comments on Jeremy Bentham’s Panopticon, stating that “the perfection of power should tend to render its actual exercise unnecessary” (555). Blacks in Wright’s story, including himself, have a subservient way of acting, a subhuman way of living. As a child, Wright remembers, “Nothing challenged the totality of my personality so much as this pressure of hate and threat that stemmed from the invisible whites” (83). He fears an invisible force, like the prisoners in Bentham’s ideal prison. Though white supremacy is not a perfect system in that its power is exercised consistently through violence, it still has a hold on the behavior of the majority of blacks because of a fear of this violence. For example, before Wright ever experiences abuse from a white person, he recalls their control: “I had never in my life been abused by whites, but I had already become as conditioned to their existence as though I had been the victim of a thousand lynchings” (84). The threat of violence keeps blacks in Wright’s story from asserting their identities as human beings and from pursuing “human” endeavors. When Wright acts like a human, seeking knowledge or overstepping his “place,” he faces the consequences and is beaten.

Mikko Tuukkanen addresses Foucault’s connection to Wright’s situation when he says, “Wright points to the panoptic regime’s superior efficacy over the spectacle of punishment in ensuring subjection” (109). As Wright grows
up, though, he stops acting like he “should” because he does not believe his subjugation to be based on rational reasoning. His friend Griggs, comparatively, emphasizes the “proper” role of the black boy in the presence of white authority. He advises Richard to show his place when dealing with white people because he fears Richard will lose his job or be killed. He also claims Wright has been “marked” for his insubordination. When Wright responds, “Oh Christ, I can’t be a slave,” Gribbs says, “But you’ve got to eat” (184). Acquiring food, a necessity of survival, requires that Wright maintain the appearance of being subhuman to the white population. The social constructs of his environment require that he remain uneducated and animalistic if he wants to survive. Wright takes Griggs’ advice, briefly, and reflects, “I would remember to dissemble for short periods, but then I would forget and act straight and human again, not with the desire to harm anyone, but merely forgetting the artificial status of race and class. It was the same with whites as with blacks; it was my way with everybody” (184-5). When Wright says he would “forget” and start acting “human again,” he suggests that his natural state is not of subservience, undermining the essentialist perspective. As a human, he has a natural inclination to maintain self-respect and personal strength. His struggle to show his “place” demonstrates how artificial the subservient behavior of blacks is. Wright tries living down to these standards of his race through self-surveillance, but he cannot stand the indignity. Tuhkanen writes, “[Wright] suggests over and again that, for a racially marked subject, a crucial survival skill in the South is the ability to read race and to show that s/he is literate in matters of race: to show by demeanor that one knows one’s place” (114). In order to survive in Wright’s environment, blacks have to put on a show of subhuman identity, and denying this identity causes problems for Wright with both the white and black communities.

While observing the blacks around him, Wright tends to use a negative tone to describe their behavior. When working for an insurance agent, Wright travels into the delta plantation. There, he grows to detest the impoverished black community’s ignorance. He writes, “I saw a bare, bleak pool of black life and I hated it” (151). Wright has gained a feeling of superiority in his literacy. He has surpassed his people’s subhuman status, in his own mind. When he watches poor blacks buy cheap goods on credit from a white shopkeeper, he writes, “The shop was always crowded with black men and women pawing over
cheap suits and dresses. And they paid whatever price the white man asked. The boss, his son, and the clerk treated the Negroes with open contempt, pushing, kicking, or slapping them” (179). This passage’s animal imagery, with the blacks “pawing” over merchandise and being mistreated by the inhumane white staff, shows the subhuman identity thrust upon the black community. Throughout the book, Wright feels disconnected from his own people, and by describing blacks in their subservient state, he emphasizes how the social hierarchy operates by keeping the black race inferior through fear.

Wright attempts to break away from the social constructs that perpetuate this hierarchy. Felgar writes, “Wright believed that arguments must succeed based on their own merits rather than on appeals to authority or violence” (2). In order to revolt against the irrational authority of race, Wright tries to assert his own agency and to define his own humanity. He believes becoming “human” relates to seeking a purpose and meaning beyond what animals can achieve. This purpose involves a comprehensive understanding of life through the development of reason. He responds differently to his subjugation than other blacks. Orville Prescott writes, “[Wright] felt isolated from Negroes as well as from Whites; other Negroes resented their lot but did not feel at all so acutely as he did” (64).

Wright has a need for social interaction and joins his black community through the local church, but he does not feel quite like a member (Felgar 2). Of the Black Methodist community, Wright reflects: “I liked it and I did not like it; I longed to be among them, yet when with them I looked at them as if I were a million miles away. I had been kept out of their world too long ever to be able to become a real part of it” (151). He feels ashamed at the undignified and subhuman way his people act around whites, and this shame prevents him from bonding within his own community. Only in recognizing the relationship between the submissive behavior of blacks and the condescending and oppressive behavior of whites can Wright begin to assert his own humanity outside of his environment’s system, though. With his isolation from the black community and his stubborn attitude towards white supremacy, Wright attempts to elevate himself as an individual through intellectual pursuits, separate from social control. He explains his disdain for the power of the white race when he writes, “Ought one to surrender to authority even if one believed that that authority was wrong? If the answer was yes, then I knew that I would
always be wrong, because I could never do it. Then how could one live in a world in which one’s mind and perceptions meant nothing and authority and tradition meant everything?” (164) In Wright’s environment, the dictates of race control what a person can do or become, and Wright rebels by aspiring to have an identity that transcends the subhuman label ascribed to him as a black boy.

Wright creates his own human identity by seeking elevation through knowledge and the denunciation of irrational social authorities. Early on, he writes, “I felt that I had to go somewhere and do something to redeem my being alive” (169). Wright needs a purpose beyond material survival, but he seeks it through learning instead of religion, the solace of the majority of his black community. He denies himself food in order to read, asserting that learning is of higher significance and priority than satisfying physical hunger. Wright does not have enough money to buy lunch, and after school he goes about exploring and reading instead of going home to eat. He says, “To starve in order to learn about my environment was irrational, but so were my hungers” (140). He would rather learn than eat, and this distinction marks a difference between him as a human and base animals. He concludes, “The happiness of being free would lift me beyond hunger, would enable me to discipline the sensations of my body to the extent that I would temporarily forget” (140). Hakutani goes as far to suggest that the lack of sexual awakening in Wright’s autobiography corresponds to his intentional “fending off [of] biological forces” in order to assert his transcendent purpose as a human (120). Wright attempts to give his life meaning by developing his reason and trying to understand his life and environment, regardless of the risks of pain or death.

Wright refuses to wear what James Watkins calls the “smiling mask of subservience,” and in writing Black Boy, Wright completes his goal of claiming his own humanity (367). Felgar writes, “If white Americans denied Wright his humanness, Black Boy establishes and clarifies it” (xii). Wright educates himself, consistently defies irrational authorities, and surpasses living a life focused on material survival. He becomes his own authority for what it means to be human in writing this story: “Art has its own autonomy, like the self Wright created in Black Boy. Art can transcend the realms of social, political, religious power and judgment” (Hakutani 124). In asserting his own humanity, Wright denounces the power constructs of white supremacy that he grows up with.
He realizes that accepted social norms are not natural but evolved through habit and force, and he recognizes where white power originates and questions its authority using reason. Wright ends his book saying, “I would hurl words into this darkness and wait for an echo, and if an echo sounded, no matter how faintly, I would send other words to tell, to march, to fight, to create a sense of hunger for life that gnaws in us all, to keep alive in our hearts a sense of the inexpressibly human” (384). He writes because writing gives him a higher human purpose. He expresses what his race has been faced with and how their oppression has been perpetuated, and he provides a story that acutely describes “the hunger of the human heart for that which is not and can never be, the thirst of the human spirit to conquer and transcend the implacable limitations of human life” (131-2).

Works Cited


As the baby boomers move into old age, geriatric issues have come to the forefront of many disciplines. This generation is not only living longer, but is also leading more active lives with higher overall quality of life in older age. This has lead to an increased focus on keeping one’s mind and body in good condition. It is obvious that medical advances have led to everything from better sex lives to better cancer prognosis in older age; however this same level of progress has not been seen in the field of cognition. Many memory complaints and slower processing are accepted as a normal part of aging and viewed as beyond intervention. This mindset results in a lack of research interest as well as a lack of motivation on the part of the patient to seek any help.

In reviewing the literature, several constructs including social networking (SN), life satisfaction (LS), and cognitive decline (CD) are found to be interrelated. These constructs will be defined here for greater clarity. Social networking (SN) represents the extent to which an individual interacts with a network of people. It takes into account primarily quantity of interactions. Networks can consist of family, friends, and acquaintances that the subject interacts with. Many of the studies outlined here use the Lubben Social Networking Scale (LSNS) as a measure of SN.

Life satisfaction (LS) consists of persistent levels of satisfaction with one’s life. This is intended as a long term satisfaction rather than momentary happiness. Much of the data on LS is based on subjective self report scales such as the Life Satisfaction Index (LSI). Although it is a self rating scale, the LSI is validated and shows an ability to accurately measure this construct.

Cognitive decline (CD) is by far the most loosely defined construct discussed. It has been used to characterize anything from simple forgetfulness to Alzheimer’s disease, schizophrenia, and brain damage. For the purposes of this study, clearly biological or pathological problems such as Alzheimer’s disease, schizophrenia, and brain damage will be excluded. Instead, CD will
be used as a construct for decline in cognitive capacity associated with age. While some biological explanations may exist for CD, the focus will remain primarily at the cognitive level so that the cognitive factors associated with CD may be more thoroughly understood. This cognitive approach follows a general model of progression from normal functioning to age associated mental impairment (AAMI) to mild cognitive impairment (MCI) to dementia. While not all individuals within the CD domain progress to dementia, many data sets suggest that a significant proportion of MCI cases will progress to dementia in four years, thus suggesting an accelerating slope (Kluger et al. 1999). The studies that pertained to CD, as described, primarily used the Mini Mental State Exam (MMSE) and/or the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) to measure cognitive ability. Both of these are excellent, validated measures of cognitive ability (Folstein et al., 1975; Randolph et al., 1998).

At this point, several correlational links have been established between different forms of age-related CD and SN. Fratiglioni (2007) outlined a preliminary relationship between SN and dementia. His research indicated that social factors might delay dementia onset. Fratiglioni (2007) lamented the fact that, at the time of publication, only three studies explicitly exploring the connection were available. Other studies have correlated large SNs with better cognitive functioning and operations such as place learning (Veltman, 2005). Place learning is a function of the hippocampus that allows an individual to map and learn a new environment. Veltman (2005) demonstrated that SN had a significant relationship with place learning such that larger SNs were related to better place learning abilities. The relationship between SN and cognitive decline is further reinforced by research suggesting that women with large SNs were less likely to become demented (Crooks, 2008). Crooks’ (2008) research is also important because it controlled for biological factors including hormone use to provide a less confounded look at the variable of SN. All of these studies seem to point to ties between poor SN and cognitive problems with age although some contrary findings exist. One study found no relation between SN and Alzheimer’s disease (AD) and also failed to find a relationship between SN and cognitive decline (Johnson, 2008). This result is not extremely surprising since Alzheimer’s disease is considered by many to be a different form of dementia than cognitive decline. Furthermore, Johnson (2008) cites poor sensitivity of
measures as a possible cause for the null finding. At any rate, the data are fairly consistent that there is some relationship between SN and cognitive decline.

The specifics of the relationship between SN and cognition in older age are also becoming better illuminated. Holtzman (2004) found that large SNs were related to preservation of cognition implying that size of SN is important such that cognitive decline (measured by the MMSE) was statistically greater than zero (better cognition) at the twelve-year follow up. This study implies that a lifelong social network could over time result in a different mental state in older age. This is to say that SN produces the effect through an additive process over time. Another study found the same correlation in women, such that women who maintained cognitive functioning were less likely to have small SNs (Barnes, 2007). Barnes (2004) concluded that SN and social engagement correlate positively both with initial cognition and cognitive maintenance in a sample of over 6000 African Americans and Caucasians over 65. Barnes (2004) also found that a 90th percentile SN score was related to 39% less cognitive decline. These two studies also imply that social factors may affect cognition throughout one’s life.

The most thorough explanation of the relationship between SN and cognition comes from Zunzunegui, (2003) who concluded that, overall, poor SN correlated with cognitive decline. The thoroughness of this study comes from the massive number of variables taken into account including types of social interaction, relation of participants, and gender. Furthermore, he found that visual social interaction (i.e., face to face) had the strongest correlation with cognitive preservation. A gender difference in whether interactions with friends protected against cognitive decline also emerged, showing that females were protected whereas males were not.

Some research also exists tying life satisfaction levels to cognition and SN. One study demonstrated that satisfaction with support was related positively to cognitive abilities (Hughes, 2008). The same study found a relationship between SN and satisfaction with support such that high scores in SN and satisfaction with support were related to especially high scores on cognitive tasks. While satisfaction with support is a different construct than LS, it shows the importance of one’s satisfaction on other variables. Another study found that SN was one of only a few variables that correlated positively with LS scores in a regression analysis (Berg, 2006). These findings seem to
point to a complex web between SN, satisfaction, and cognition.

The body of research surrounding the relationships of SN, LS, and CD is relatively young and small. Most of the data are correlational or use simple t-tests to demonstrate that groups are different and lack any causal claims. This is also due in part to the difficulty determining an adequate means of manipulating the variables. It is practically impossible to randomly assign individuals to different SNs, LSs or CDs. Directionality is also unclear in the research. It is unclear which of the three factors comes first and which are caused by the other. At this point, all that is known is that these factors are related in some way. The current study therefore seeks to determine some directionality of the relationship via moderation and mediation analyses of the variables. Logistical constraints eliminate the possibility of a longitudinal design. Although this type of approach would be preferable, it may not be necessary to obtain information about the direction of the relationship. Directionality is the key to developing efficient and effective interventions in cognitive decline. For example, if the relationship progressed from SN to CD with no mediation, it would be most effective to try to influence SN earlier in life. Likewise, if LS mediates the relationship, then influencing a person’s satisfaction might be most productive. This would allow for the problem to be stopped at the source rather than treating the symptoms later. The research seems to suggest, and thus my hypothesis is, that the relationship progresses from SN to LS to CD. This makes sense being that SN is more or less present and constant throughout life and CD usually only shows up in later life. It also suggests that LS plays a part in the process of decline. While this hypothesis is logical, alternatives do exist. The relationship may very well progress from SN to CD to LS. This scenario would suggest that LS is a product of CD and thus has no real bearing on the process of CD. These two possibilities represent the most likely outcomes. While it is possible that some kind of progression originating with LS or CD will be observed, it remains unlikely and contrary to the inference of much of the research. The literature is too scant to make a firm case for any of the aforementioned hypotheses, thus making a definitive hypothesis difficult.

In my moderation analysis I had hoped to be able to discover any main effects and interactions that exist between SN, LS, and CD. It is important to note that the nature of this analysis was quasi-experimental due to the inability
to effectively manipulate the independent variables. I hypothesized that SN will be more influential than LS such that people with high SN scores will do better than those with low SN scores regardless of their LS score.

Method

Participants

For the purposes of this study, a clinical sample of convenience was selected from an archive assembled by a local clinical psychologist. This archive consisted of approximately 300 individuals 60 years or older who were enrolled after being evaluated for memory complaints. A power analysis was performed to determine an approximate number of participants needed. Due to the small body of research pertaining to the subject at hand and the variability in constructs in the literature, the power analysis was inconclusive suggesting that between 38 and 127 participants are needed to provide sufficient power. In the interest of having maximum power, I intended to recruit as many participants as possible with a tentative goal of 127. No participants known to have Alzheimer’s disease or other progressive neurodegenerative diseases were included. Due to the prevalence of medical conditions and problems in this population, no other medical problems were excluded. Some participants did, however, choose to discontinue their participation due to their medical condition. A total of 215 participants were contacted by mail with 61 responding to this survey. Of these 61, 10 could not be reached at the number they provided even after multiple attempts. An additional 2 were excluded because of self reported diagnosis of Alzheimer’s disease. Four other responders declined further participation due to recent health problems. After all exclusions a total of 45 participants provided valid data. Of the 45 participants 42 were Caucasian and 3 were African-American. Participants’ ages ranged from 59 to 91 years, $M = 74$, $SD = 8.37$. Of the participants, 62% were female. The average participant was also college educated.

Materials

Demographic Form: General demographics such as age, education, and civil status were collected. Additional information concerning exercise and social habits was assessed, and a few questions about daily functioning
were included. These items were included because the form served to provide demographic information for a larger packet of measures not included in this study.

Telephone Interview for Cognitive Status (TICS): The TICS was administered as a measure of cognitive function. This measure was originated by Brandt and Spencer and has been shown to be both valid and reliable (Brandt et al., 1988). Brandt et al. also demonstrated that it correlates highly with the Mini Mental State Exam (MMSE) which is used in many of the other studies cited.

Lubben Social Networking Scale (LSNS): The LSNS-6 was given as a measure of Social Network. The LSNS has been in use for over 20 years and was designed with elderly populations in mind. Reliability of this measure is also good (a_{LSI-Z}=.70; Lubben, 1988).

Life Satisfaction Index (LSI): The LSI-Z was administered as a measure of life satisfaction. The LSI-Z has been in use for over 40 years and was designed for elderly individuals. Within elderly populations the LSI-Z was found to be both valid and reliable compared to the Life Satisfaction Rating (a=.57, r_{LSI-Z and LSR} = .95; Wood et al., 1969).

Procedure

Participants were mailed the LSNS and the LSI-Z as part of a larger package of metrics that are regularly administered to archive participants. Participants were asked to mail the completed packets back in a prepaid envelope. Once the packets were received each of the participants was called at the phone number provided on the demographic form. If there was no answer, calls were rescheduled. At least three attempts were made including messages, if possible. Over the phone, participants were asked to complete the TICS. After completion, each participant was thanked and informed of the purposes of the study. They were also offered the opportunity to call back after data were analyzed for a full report on the findings.

Results

Mediation analyses

The data collected were first analyzed with zero order correlations and
partial correlations to test for any mediating variables. A marginally significant zero order correlation was observed between SN and LS, $r(45) = .28, p = .06$. The expected correlation between SN and CD was not observed, $r(45) = .01, p = .94$. Likewise the expected correlation between LS and CD did not materialize, $r(45) = .15, p = .34$. There results did not support the basic assumption of the proposed partial correlation that SN and CD as well as LS and CD would be correlated in my sample thus making any additional partial correlation findings tenuous at best.

Partial correlations were performed despite failure to meet the basic assumptions. It is important to note that these analyses were highly exploratory. They were done in order to better understand the nature of the data and results are simply a guide for future inquiry. Even so, both partial correlations yielded null findings.

Moderational analysis

A 2x2 between subjects ANOVA was performed to test for any moderation that might be taking place. LS and SN were divided into high and low conditions via a median split and then used as independent variables. Those participants scoring at the mean were excluded to provide adequate separation of the groups. CD was used as the dependent measure. A marginally significant main effect was found for LS, $F(1, 33) = 3.27, p = .08, n^2 = .09$. However, no main effect was observed for SN, $F(1, 33) = 0.05, p = .82, n^2 = .002$.

A significant interaction between LS and SN was found, $F(1, 33) = 14.64, p = .001, n^2 = .31$, in that TICS scores of participants with low SN did not differ significantly between high and low LS conditions, $t(14) = .21, p = .21$. However, among participants with high SN, TICS scores were higher if they had high LS than if they had low LS, $t(19) = 4.34, p < .001$.

Secondary analyses

In trying to explain the results of the moderational analysis, I thought it might be helpful to invoke the concepts of social networking quantity and quality. In order to test for these effects, two separate analyses were conducted. These analyses were the same as the first except that the SN variable was divided into qualitative (SNqlt)(a=.76) and quantitative (SNqnt)(a=.68) items and separate ANOVAs were performed using each new variable. This division
was based on the personal judgment of the primary investigator. Of the 6 total items, 2 were identified as quantitative and the remaining 4 were deemed qualitative. The total of each subgroup was taken as the score for SNqlt and SNqnt. It is important to note that this is highly exploratory and done only to direct future inquiry.

A few zero order correlations were observed during this analysis. SNqlt and SNqnt were positively correlated to one another, $r(45) = .43, p = .003$. Also, both SNqlt and SNqnt were positively correlated with the SN total score, SNqlt: $r(45) = .93, p < .001$, SNqnt: $r(45) = .74, p < .001$.

A positive correlation between SNqnt and LS was also observed, $r(45) = .36, p = .02$. However, no significant correlation was observed between SNqlt and LS, $r(45) = .18, p = .25$. Furthermore, CD did not significantly correlate with either SNqnt, $r(45) = .09, p = .57$, or SNqlt, $r(45) = -.03, p = .83$.

When the moderation analysis was repeated with just the SNqlt construct, the results were similar to those in the first analysis. No significant main effects were observed. A significant interaction between LS and SNqlt was observed, $F(1, 31) = 16.38, p < .001$, $n^2 = .35$, in that TICS scores of participants with low SNqlt did not differ significantly between high and low LS conditions. However, among participants with high SNqlt, TICS scores were higher if they had high LS than if they had low LS.

When the analysis was repeated with just the SNqnt scores the results were much different. No main effects were observed just as in the analysis of SNqlt. Unlike the previous analyses, no significant interaction was observed between SNqnt and LS, $F(1, 24) = 2.53, p = .13$, $n^2 = .10$.

In the interest of thoroughness, gender was also analyzed. As noted earlier, Zunzunegui, (2003) found gender differences in how much SN protected against CD. I wanted to see if these gender differences were, in fact, present in the data and if they could help explain the other findings. Correlational analysis revealed that among female participants SN and LS positively correlated , $r(45) = .38, p = .05$. Among males, the same correlation did not emerge, $r(45) = .07, p = .79$. However, among males a marginally significant positive correlation between education and LS emerged, $r(45) = .40, p = .11$. This same correlation was not observed among females, $r(45) = .01, p = .96$. Additionally, a 2x3 between subjects ANOVA was conducted to test for any moderation between LS, SN, and gender. No new main effects were
observed. A marginally significant interaction was found for LS and gender, 
\[ F(1, 29) = 3.97, p = .06, n^2 = .12 \] (see Figure 4). This interaction was such that 
women benefited on TICS scores from large SN and men benefited more from 
small SN.

**Discussion**

The mediational analysis did not support my initial hypothesis. This is 
largely due to the fact that some basic assumptions were not met. My basic 
assumption going into the analysis was that the well documented positive 
correlation between SN and CD would be present in this sample. This was 
not the case, however, and was, by far, one of the most puzzling outcomes of 
this study. Without this key correlation as a backbone, the rest of the analysis 
fell apart. It would be impossible for LS to mediate a non-existent relationship 
between SN and CD. In this way, it was not unexpected that the partial 
correlations did not materialize as predicted. Special attention must be paid to 
determining why this well documented relationship was not observed. If any 
further mediational analysis is to be done, a clear relationship between SN and 
CD must be demonstrated.

In the first moderation analysis, a few strange trends emerged, including 
a marginally significant main effect for LS. This finding, while not strictly 
significant did account for 9% of the observed variance. This seems to suggest 
that additional research with a larger sample size might demonstrate a truly 
significant effect. This finding is consistent with prior research outlined earlier 
as well as with my expectations. The rest of the findings do not fit my initial 
expectations nearly as well. No main effect was observed for SN and a puzzling 
interaction emerged. It is reasonable to attribute the failure to observe the well 
documented effect of SN on CD on sample problems. These will be discussed 
detail later. By far, the most difficult finding to explain is the nature of the 
interaction between SN and LS. This interaction seems to suggest that people 
do better cognitively if they are high in both LS and SN. This part of the 
interaction is intuitive. One would think that a person satisfied with their life 
that had more friends would do well. It is the other part of the interaction that 
seems to defy common sense. The people who seem to do the worst cognitively 
are high in SN but low in LS. This does not seem to follow logically as does 
the other half of the interaction. It would be logical to think that someone low
in both constructs would do the worst. This is not at all what the interaction is suggesting.

When looking at these data, the subjects of SNqlt and SNqnt seem relevant. The difference in quality and quantity could help to explain the observed interaction. This would be especially true if LS influenced whether a person sought out quality relationships or simply looked at quantity. This concern about the influence of SNqlt and SNqnt prompted us to perform a second analysis.

The findings of the second set of moderation analyses, which split SN into SNqlt and SNqnt, shed a little more light on the interaction that was outlined in the first analysis. The same interaction was observed in the first analysis and the analysis using SNqlt. This interaction disappears when the SNqnt variable is used. This seems to suggest that quality of SN makes more of a difference than quantity. It is important to note that the division of the LSNS into SNqlt and SNqnt was done unscientifically. The process consisted of the personal judgment of the primary investigator. No analysis has been done to see if this division actually measures the constructs I was targeting. This is certainly an area that metrics need to be developed for in order to more accurately measure both quality and quantity. The division was also uneven. The six item LSNS was divided into two quantitative items (items 1 and 4) and four qualitative items (items 2, 3, 5, and 6). That being said, the findings of this analysis are not reported here as indicative of robust relationships, but instead are presented as additional guidance for future research.

The analysis of gender did turn up some interesting data. It seems that previous findings were supported in that women benefit more from SN than do men. It is also interesting that LS and education correlate positively for men but not women. This may be a product of the generation in question. Women of this age, if college educated, might not have been able to convert that education into as rewarding a careers as men of a similar cohort. Likewise, SN and LS correlated positively for women but not men. This seems to indicate that women derive more satisfaction from social engagement than do men. Additional research in this area should pay special attention to gender in order to determine if some effects are different among genders.

Questions about validity, both internal and external, are real concerns for this study. My sample was not representative of the elderly population as a
whole. The sample was largely skewed in favor of Caucasians accounting for 42 of the participants, and with African-Americans accounting for the other 3. No other ethnic groups were represented. Gender also proved to be a source for concern with females accounting for 62% of participants. Although gender was not as skewed as race, it may still be a source for concern. As described earlier, this group was selected from an archive that was put together by a local neuropsychologist. The demographics of this sample were similar to those of the individuals that seek care from this facility. Socioeconomically, most were middle to upper middle class with ample access to healthcare and mental healthcare which also differentiates them from the general population.

This study was largely preliminary and the sample used was adequate for those purposes. Improvements to this design might include pursuing a more representative sample. This would require special attention to race, gender, education, and geographical location among other variables. Also, more precise measures that give data on both quality and quantity of SN would aid in giving a full picture of the relationships in question. The size of this sample was also rather limiting. My initial power analysis suggested that I would need between 38 and 127 participants. While I had aimed for the higher end of that range, in practiced I achieved the lower end ($N = 45$). This is due to many factors including time and response constraints. A larger sample size will be essential in any further research, allowing us more power to detect effects that others have observed. Given a larger sample, it may be possible to show that many of the marginally significant findings in this study are actually significant in the population.

Overall, my study was not able to demonstrate a coherent directionality in the SN-LS-CD relationship. Many questions have surfaced concerning the relationship and very few of the answers I sought were found. The most important thing learned here is that SN needs to be dealt with as a multifaceted construct. In the future more attention must be paid to the differences between the quality and quantity of social relationships. This study must be viewed as only a first step into a vast area of interest. Additional research into cognitive aging is paramount. Preserving quality of life and functioning for an increasing number of older adults will be the challenge of the next generation of researchers and care providers. For this reason, more research is needed to better outline the role of social factors of all kinds in cognitive resilience and decline.
References


Footnotes

The data collected for LS via the LSI-Z were skewed (LSIZ= -1.17). While technically skewed, the data only barely met the criteria. In the interest of thoroughness I performed a square root transformation to compensate for the skewness. The transformation proved ineffective for our purposes and was thus abandoned. The data for SN and CD were checked for skewness as well but had a normal distribution.
The Real Returns to Law School: A Cost Benefit Analysis

Brittany Vorreiter

1. Introduction

The question “What should I do next?” is one that plagues college students toward the end of their undergraduate career. Our generation differs from previous ones in its expectations. It is expected that students attend college, and to some extent this transforms into the expectation of a degree beyond a Bachelor’s. With the economic downturn and an unemployment rate of approximately 9.6%, students are being told that in order to maintain an edge in the labor market they must further their education beyond undergraduate degrees. For many students, this equates to earning a law degree.

The rising price of education makes a cost-benefit analysis essential. The law profession generally provides a high salary for lawyers who work for larger companies, but offers a lower median salary for lawyers in the more numerable smaller firms. Due to this factor and a higher number of graduates, the salary provided might not be able to offset the debt incurred with law school. The question then becomes whether the price paid for tuition will be offset by an increased salary comparable to those without graduate degrees. This paper examines statistical data and its regression to consider the impact of a law degree on median salary.

2. Literature Review

According to NALP, or the Association for Legal Career Professionals, the class of 2009 law students is faced with tough economic hardships. NALP’s press release “Overall Employment Rate Masks Job Market Weakness,” states that the current recession puts an end to the previous high returns of being a lawyer. Employment in the legal profession for new graduates has decreased 2% in the last two years even as admission to law school increases. The analysis consists of 192 ABA accredited law schools with 40,833 students from the class of 2009, or approximately 92.8% of new graduates. Only 88.3% of graduates surveyed marked that they were employed. Of those employed, many students’
start date was deferred, and 25% of overall employment is temporary. Nearly 22% of all employed graduates, full time or otherwise, state that they are still looking for a better job. Lack of employment coupled with high cost greatly reduces the benefit of law school.

In the article “Taking the Long View of the Law”, data collected from experts reiterates that obtaining a law degree is not nearly as beneficial as previously predicted. Despite less employment, tuition costs at law schools steadily increase. This is related to several factors: the loss of endowments, competition for a better ranking, and the amplified demand for admission. In 2009 the number of students taking the LSAT increased by 6.4%. According to the American Bar Association, from 2008-2009 private institutions increased prices by 6% to about $34,298 and public institutions increased tuition by 9% to $16,836. Job availability depends on the field of study: bankruptcy, foreclosure, and intellectual property are all increasing in demand for lawyers. However, blindly accepting that “education in general, and legal education in particular, is always worth the money” is no longer true, says Herwig Schlunk of Vanderbilt University (72). In midsize firms, the median salary is around $71,500 to $100,750, and salaries around metropolitan areas will be larger. This analysis shows that when considering variables that affect salary, one has to understand that student debt and economic conditions play a large role.

A preliminary study on the return to attending a high ranking law school is observed in the paper “The Returns to A Prestigious Law School.” Although this study is still under construction, it evaluates prestige and its effects and correlates largely with information assumed in my analysis. Potential law school students will pay fees including $132 to take the LSAT, admission fees, and maybe even over $1000 for study materials for the LSAT. Since top 10 schools are known for supplying more successful graduates, do they merely attract better students or do they provide high quality?

The equation for this study includes two dependent variables: the log of annual earnings and a dummy variable for prestige. Prestige is split into top 10 ranking, 11-20, and 21-50. The sample includes about 50% of each gender who were 30 years of age and income is discounted at 5 and 10%. Controlling for family background and how lawyers paid for school, researchers take the midpoint salary. Results find that there is a correlation between school ranking and the success of a graduate measured in earnings. Other factors contributing
to success did little to lower this effect. In 2002, the top 10 schools according to US News and World Report boasted graduates who made 25% more than schools in the 11-20 range. Graduates from the top ten also have the highest percentage of students working for the largest and most prestigious firms.

The reason for pay differences due to other variables is also important. The paper “Undergraduate Degree Field and Lawyer Earnings” investigates the correlation between majors chosen in undergraduate institutions and the median salary of lawyers. “Why do some degrees earn much more than the median salary and others earn much less?” is the main question posed in this study (263). Different majors, such as engineering, science, and business, are known to have different and consistent effects on salary. Researchers consider the possible factors on income obtained through a law degree. The legal profession was chosen because while it contains a variety of backgrounds, the practice itself is very uniform and can be evaluated. It is also acknowledged that ability matters in this profession and can be controlled. Information is also transparent: grades in law school are released and can be accessed.

The study is comprised of working, fulltime graduates. After subjects were filtered, the sample generally includes younger people, with a higher proportion of white men. The equation is assumed to be linear with variables involving demographics, type of employment, and human capital. Salary is the dependent variable, and age and number of children account for demographics. Employment is divided into government, non-profit, self-employed, and other sectors. Finally, human capital encompasses experience after graduation and time off from working. A quadratic form of experience is also added. The study takes the top censored earnings instead of taking the median, which may have skewed its results. Surprisingly, the equation also reveals that there is not statistical significance for a gender gap.

These articles all provide background knowledge of current perceptions on the value and impact a law degree could have on salary, whether it be a negative relationship or a positive correlation. They also illustrate different variables and parameters that need to be included in a regression model in order to discover whether there is truly a causational relationship between graduate degrees and salaries.
3. Model

After obtaining data, I create a regression about the effects of different variables on salary. I then take this information and compare it to tuition rates to acquire the answer. I use the following model:

Six variables appear in the regression above to measure the effects on salary. I average the median salaries from the private and public sector to see a more general result, but the regression on both public and private salary is also available in tables 3 and 4. I include the variable LSAT to control for a student’s ability concerning logic and law. This variable relates to incoming law students’ aptitude; it does not consider a student’s GPA or work ethic while attending. The variable GPA, or the average undergraduate GPA of entering law students, attempts to take into account the work ethic of students. However, this variable may not correlate to salary as much since many students acquire a wide variety of undergraduate degrees. Because some of these degrees might be easier to obtain than other degrees, this variable may not be as significant as other variables. I also average GPA and LSAT data from their respective median low scores and high scores.

Since law schools themselves are vastly different in atmosphere, size, and demographics, I use the acceptance rate and the type of school to allow for this. The acceptance variable is the acceptance rate of students who apply to a law school. This obviously shows demand for a law school, but it could also be assumed to account for school difficulty and rank. Therefore, the regression contains acceptance to explain school prestige, defined here as rank and difficulty. The type of school is considered in the dummy variable “private”. In the regression, private schools are given a 1, and public schools are given a 0.

Since no variable is available for school enrollment or size, I assume that the student faculty ratio will provide an accurate representation of size. This could also be inferred as quality of education if students receive more instruction when the ratio is smaller. I also include the “passbar” variable in the regression with the assumption that a higher passage rate of the bar exam illustrates the quality of education received at the institution when all other variables are equal.

Expectations of the signs of the coefficients can be inferred from the previous description of each variable. GPA and LSAT scores should both have positive signs as ability and work ethic should be positively related to
the amount one can earn, though undergraduate GPA may be less significant than LSAT scores. The acceptance rate should have a negative correlation as greater school prestige generally is correlated with a higher salary, and there is an inverse relationship between the variable and the amount of school prestige. The passage rate of the bar exam should be positive if it correlates to the quality of education received, as better education should lead to higher wages. Finally, size should also have a negative relationship with salary, and therefore the coefficient for the student faculty ratio should be negative.

4. Data

As individual student data is difficult to find, the dataset includes overall information from 185 law schools listed. The data used in the equation is found on the Internet Legal Research Group website, which collects data from public sources and law schools’ released information. This data represents statistics from 2007 concerning bar passage rates, LSAT scores, and GPA scores. The information on employment rates is from full time 2006 graduates. The dataset includes information from 185 accredited law schools in the United States.

Research regarding law schools uses salary data to determine a school’s rank. Other papers available compare men and women’s salaries in this profession or analyze the demand for a career in law. Law programs also use this data to evaluate which variables have the greatest effect on salary since admissions is a necessary part of any higher education institution. A higher median salary for a law school will contribute to a higher national ranking and leads to more applicants to the school.

Potential problems with the dataset include the lack of information about student enrollment and school ranking. School ranking is difficult to determine as different criteria greatly affect the results. The median salaries might also be slightly skewed as the schools release these numbers themselves, and may have not done so objectively. The final analysis of the returns to law school only takes into consideration the starting median salary of graduates and does not include benefits which may result in being a public or private employee. The variables not directly involved in the salary regressions consist of the school name, the state in which the school is located, tuition and room and board for the year of 2007, percentage of students employed at graduation and
nine months after graduation, and the state average of the percent of students who passed the bar exam. This data could be important in the analysis of the cost.

5. RESULTS

The findings of average salary regressed on the variables are located in table 1. The number of observations is reduced from the original 185 because five of the observations did not have the appropriate salary data. The intercept for this equation is obviously not very useful as negative salaries do not exist. The first unexpected coefficient is GPA, which has a negative sign and a very high standard error. This variable also has the least individual significance, though it is jointly significant with LSAT scores. The LSAT coefficient is positive as expected and significant. All else equal, for every one point increase in the average LSAT score, average predicted salary increases by $2,658.

The negative acceptance coefficient suggests that a one percentage point increase in the acceptance rate for a given school decreases the predicted average salary by $188.13, ceteris paribus. The positive sign for the student faculty ratio is also unexpected. According to the data, a larger class size will positively affect salary. In an attempt to explain this, I add the quadratic variable “sfsquared” to the equation to see if there is a decreasing return to class size. However, the variable is not significant and the point of decreasing returns was 81 students to one faculty member. The maximum ratio available in the data is 24.3 students, so this quadratic variable is not relevant. This may be a result of omitted variable bias as I was unable to account for actual size. Both of these variables are significant at the 3% level.

The last unanticipated coefficient sign belongs to the passage rate on the bar exam variable. With all other variables held constant, a one percentage point increase on a school’s passage rate decreases predicted salary by $307.99. I speculate that this may be due to an interaction with other variables in the error term. A greater supply of lawyers due to high pass rates may decrease salaries. The final variable, type of school, described the benefits of attending public or private school. Controlling for other variables, attending private schools increases predicted average salary by $2,413.29 more than attending a publicly funded law school.
The z-score regression found in table 2 shows the LSAT variable has the largest effect on salary. Average undergraduate GPA, at the 24.2% significance level, had the least significance.

The regressions for public and private salaries found in tables 3 and 4 show some obvious and interesting differences. The variables used for average salary and for private sector salaries do not seem to explain public sector salaries at all in comparison. While R-squared for the private sector is almost exactly the same as the average salary equation, R-squared for the public sector salary is too low to even compare coefficients between the two sectors.

These equations show the effect of different law school and law school students’ characteristics on average salaries and salaries in the private and public sector. However, the question is not what variables affect salary but what are costs and returns to earning a Juris Doctorate.

I find costs of tuition by adding average cost of tuition, average cost of room and board, and lost wages. I find the cost of tuition and room and board using the dataset averages and differentiated by public or private school and the initial total cost before discounting can be found in table 9. According to USA Today article “Starting Salaries of New College Graduates Drop 1.3%,” the average salary for students majoring in general studies and completing a Bachelor’s degree is $37,356 as of July 2010. I use this number to discount 44 years of lost wages with three of those years accounting for the opportunity cost of attending law school. The final sum of lost wages at a 5% rate from the time of college graduation at age 22 until the time of retirement at the age 65 is $692,801. I add these wages to both public school and private school costs.

The results are located in the following table.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Total Cost (Tuition, Room)</th>
<th>Lost Wages</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public School</td>
<td>$ 105,759.61</td>
<td>$ 692,801.09</td>
<td>$ 798,560.70</td>
</tr>
<tr>
<td>Private School</td>
<td>$ 124,660.36</td>
<td>$ 692,801.09</td>
<td>$ 817,461.45</td>
</tr>
</tbody>
</table>
Benefits of law school are based on wages after obtaining a degree and are broken into a matrix including median public and private salary and public and private schools. I discount these wages with three years allotted the amount zero, assuming that students did not have an income during their years in school. I account for salaries until the age of 65. Initial salaries can be found in the appendix in table 8.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Public Salary</th>
<th>Private Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public School</td>
<td>$ 713,343.03</td>
<td>$ 1,225,261.81</td>
</tr>
<tr>
<td>Private School</td>
<td>$ 743,402.76</td>
<td>$ 1,276,129.06</td>
</tr>
</tbody>
</table>

Based on total costs and total benefits, the following table shows the final results. The data suggests that having a salary in the public sector is not worth enough monetarily to compensate for the costs of attending law school.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Public Salary</th>
<th>Private Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public School</td>
<td>$(85,217.67)</td>
<td>$ 426,701.11</td>
</tr>
<tr>
<td>Private School</td>
<td>$(74,058.69)</td>
<td>$ 458,667.61</td>
</tr>
</tbody>
</table>

6. Conclusion

Based on starting salaries of law school graduates, a law degree is only worth the debt and opportunity cost in certain instances. The discounted costs of tuition and lost wages are not met by a salary in the public sector. Allowing for overall costs of attending law school, the data suggest that only the private sector offers high enough wages to compensate for the time and money spent going to either a public or a private school. Attending a private school also appears to predict a slightly higher salary than attending a state funded school.

This data is not conclusive however, and it is still important to examine individual schools when deciding on whether attend law school or to begin a
job search. As observed from the z-score regression, the LSAT variable, and thus a student’s ability, has a statistically large effect on salary as well. It may also be important to observe the rate of employment after graduation, and the number of schools in the state to determine the likelihood of finding a job after law school. This study does not take into consideration any benefits of insurance or any raises that may come along in a career, and these variables also affect whether it is truly beneficial to obtain a law degree.

This study therefore suggests that law school is not worth the cost in a public sector career based solely on starting median salaries released by various law schools and discounted costs of school related expenses and lost wages in a different career.

**Tables**

**Table 1: AVERAGE SALARY REGRESSION**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P-Value</th>
<th>CI Low</th>
<th>CI High</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>$ (8,097.38)</td>
<td>6,892.60</td>
<td>0.24</td>
<td>-21,701.8</td>
<td>5,507.0</td>
</tr>
<tr>
<td>LSAT</td>
<td>$ 2,658.24</td>
<td>246.64</td>
<td>0.00</td>
<td>2,171.4</td>
<td>3,145.0</td>
</tr>
<tr>
<td>Accept %</td>
<td>$ (188.13)</td>
<td>86.96</td>
<td>0.03</td>
<td>-359.8</td>
<td>-16.5</td>
</tr>
<tr>
<td>Student/Faculty</td>
<td>$ 578.88</td>
<td>259.11</td>
<td>0.03</td>
<td>67.4</td>
<td>1,090.3</td>
</tr>
<tr>
<td>Pass %</td>
<td>$ (307.99)</td>
<td>83.59</td>
<td>0.00</td>
<td>-473.0</td>
<td>-143.0</td>
</tr>
<tr>
<td>Private Sch.</td>
<td>$ 2,413.29</td>
<td>1,437.88</td>
<td>0.10</td>
<td>-424.7</td>
<td>5,251.3</td>
</tr>
<tr>
<td>Intercept</td>
<td>$ (306,488.00)</td>
<td>32,928.51</td>
<td>0.00</td>
<td>-371,481.3</td>
<td>-241,494.6</td>
</tr>
</tbody>
</table>

R-sq=0.697          Obs=180
### Table 2: Z-Score Average Salary Regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P-Value</th>
<th>CI Low</th>
<th>CI High</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>-0.0962</td>
<td>0.0819</td>
<td>0.24</td>
<td>-0.2580</td>
<td>0.0655</td>
</tr>
<tr>
<td>LSAT</td>
<td>0.9401</td>
<td>0.0872</td>
<td>0.00</td>
<td>0.7679</td>
<td>1.1122</td>
</tr>
<tr>
<td>Accept %</td>
<td>-0.1526</td>
<td>0.0705</td>
<td>0.03</td>
<td>-0.2917</td>
<td>-0.0134</td>
</tr>
<tr>
<td>Student/Faculty</td>
<td>0.1142</td>
<td>0.0511</td>
<td>0.03</td>
<td>0.0133</td>
<td>0.2152</td>
</tr>
<tr>
<td>Pass %</td>
<td>-0.2051</td>
<td>0.0557</td>
<td>0.00</td>
<td>-0.3150</td>
<td>-0.0952</td>
</tr>
<tr>
<td>Private Sch.</td>
<td>0.0772</td>
<td>0.0460</td>
<td>0.10</td>
<td>-0.0136</td>
<td>0.1680</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.0194</td>
<td>0.0418</td>
<td>0.00</td>
<td>-0.1020</td>
<td>0.0632</td>
</tr>
</tbody>
</table>

R-sq=0.697     Obs=180

### Table 3: Public Salary Regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P-Value</th>
<th>CI Low</th>
<th>CI High</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>$ (3,506.27)</td>
<td>3,840.75</td>
<td>0.24</td>
<td>-11087.0</td>
<td>4074.5</td>
</tr>
<tr>
<td>LSAT</td>
<td>$ 658.56</td>
<td>137.43</td>
<td>0.00</td>
<td>387.3</td>
<td>929.8</td>
</tr>
<tr>
<td>Accept %</td>
<td>$ (28.95)</td>
<td>48.46</td>
<td>0.03</td>
<td>-124.6</td>
<td>66.7</td>
</tr>
<tr>
<td>Student/Faculty</td>
<td>$ 100.09</td>
<td>144.39</td>
<td>0.03</td>
<td>-184.9</td>
<td>385.1</td>
</tr>
<tr>
<td>Pass %</td>
<td>$ (220.34)</td>
<td>46.58</td>
<td>0.00</td>
<td>-312.3</td>
<td>-128.4</td>
</tr>
<tr>
<td>Private Sch.</td>
<td>$ 1,329.14</td>
<td>801.23</td>
<td>0.10</td>
<td>-252.3</td>
<td>2910.6</td>
</tr>
<tr>
<td>Intercept</td>
<td>$ (28,289.94)</td>
<td>18,348.71</td>
<td>0.00</td>
<td>-64506.1</td>
<td>7926.2</td>
</tr>
</tbody>
</table>

R-sq=0.286     Obs=180
### Table 4: PRIVATE SALARY REGRESSION

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P-Value</th>
<th>CI Low</th>
<th>CI High</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>$ (11,786.10)</td>
<td>12,601.10</td>
<td>0.35</td>
<td>-36655.8</td>
<td>13083.6</td>
</tr>
<tr>
<td>LSAT</td>
<td>$ 4,668.96</td>
<td>451.83</td>
<td>0.00</td>
<td>3777.2</td>
<td>5560.7</td>
</tr>
<tr>
<td>Accept %</td>
<td>$ (344.29)</td>
<td>158.29</td>
<td>0.03</td>
<td>-656.7</td>
<td>-31.9</td>
</tr>
<tr>
<td>Student/Faculty</td>
<td>$ 1,044.02</td>
<td>476.16</td>
<td>0.03</td>
<td>104.3</td>
<td>1983.8</td>
</tr>
<tr>
<td>Pass %</td>
<td>$ (414.68)</td>
<td>150.50</td>
<td>0.01</td>
<td>-711.7</td>
<td>-117.6</td>
</tr>
<tr>
<td>Private Sch.</td>
<td>$ 3,659.17</td>
<td>2,620.22</td>
<td>0.16</td>
<td>-1512.1</td>
<td>8830.5</td>
</tr>
<tr>
<td>Intercept</td>
<td>$ (588,042.90)</td>
<td>59,944.79</td>
<td>0.00</td>
<td>-706350.6</td>
<td>-469735.1</td>
</tr>
</tbody>
</table>

R-sq=0.692, Obs=182

### Table 8: BENEFIT BASED ON SALARY

<table>
<thead>
<tr>
<th>School Type</th>
<th>Public Salary</th>
<th>Private Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public School</td>
<td>$ 45,474.96</td>
<td>$ 78,109.31</td>
</tr>
<tr>
<td>Private School</td>
<td>$ 47,391.24</td>
<td>$ 81,352.05</td>
</tr>
</tbody>
</table>

### Table 9: School Type

<table>
<thead>
<tr>
<th>School Type</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>$ 43,596.49</td>
</tr>
<tr>
<td>Public</td>
<td>$ 36,986.51</td>
</tr>
</tbody>
</table>


About the Authors

Kimberly Campbell is a junior history major from Hawkinsville, Georgia. She is a member of Phi Eta Sigma, Omicron Delta Kappa, Phi Kappa Phi, and Phi Alpha Theta honor societies. She is also an Intramural Sports Student Director and serves on Mercer University’s Orientation staff as a Peer Advisor. Kimberly has been awarded a SHEAR/Mellon Fellowship to continue her research on romantic conceptions of antebellum masculinity, specifically pirate tales, in Philadelphia, Pennsylvania this summer. Kimberly was also recently named the recipient of the Judge and Mrs. John Sammons Bell Scholarship for Southern Studies.

Kevin Eck is a sophomore Mechanical Engineering student with a Business Administration minor in Mercer University’s School of Engineering. He is planning on conducting research at Vanderbilt University this summer through the Systems Biology and Bioengineering Undergraduate Research Experience. Kevin hopes to pursue a career in the aerospace industry after earning a graduate engineering degree.

Matthew Gorgans is a junior English major, working towards certification in secondary education. His particular interests within his major include Victorian literature and literary theory. Matthew seeks out research opportunities in his field—he presented at the National Conference on Undergraduate Research in Ithaca, New York and the Constructing Identity Conference at Macon State University this year. After graduation, Matthew hopes to either teach high school English or attend graduate school for English literature.

Christina Hennecken grew up in Augusta, Georgia, and has spent the last four years at Mercer earning a Bachelor of Arts in Music and English with University Honors. She studied flute with Mr. Kelly Via, British Literature at the University of Oxford, and also completed Mercer’s Great Books Program. Southern Literature became a particular point of interest over the past two years. Recent awards include the Townsend School of Music Academic Excellence Award and a Dean’s Tuition Grant from the Georgetown University Law Center, where she plans to pursue a law degree in the fall.

Chris Scoggins hails from Albany, Georgia and is a senior Psychology major at Mercer University. Chris became interested in research after participating in a research internship under the supervision of Dr. Lee Hyer at the Georgia Neurosurgical Institute. His interest in social science research eventually lead to the undertaking of his Honors Thesis in Psychology, “Relationships between Social Networking, Life Satisfaction, and Cognitive Decline in Older Adults”, printed here. His academic interests include social influences, health efficacy, and gerontology. Chris will be staying at Mercer after graduating in order to pursue a master’s degree in public health from Mercer University School of Medicine. He intends to use this degree to continue his work in gerontology and aging science.

Brittany Vorreiter is a senior in Mercer University’s Stetson School of Business and Economics where she is double majoring in Management and Economics with a minor in Political Science. She studied Environmental Economics and Globalization at Oxford University in the United Kingdom in the spring of 2011, and aspires to continue learning about these topics during her final year at Mercer. As a Mercer Service Scholar, Vorreiter will attempt to apply her research on environmental issues toward a service project. She is still undecided on a post undergraduate action and is considering obtaining an Environmental Law degree, a Master’s in Business Administration, or a Doctorate in Economics.