

Meeting of Minds XVI
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About the Meeting of Minds: Journal of Undergraduate Research

The *Meeting of Minds Journal of Undergraduate Research* is specifically designed to offer undergraduate students the opportunity to experience the manuscript submission and review process. Students who participate in the Meeting of Minds Conference are invited to submit a written version of their presentation to the Journal Review Board for publication in the volume, which corresponds to the presentation year. The initial volume published in 1998 incorporated submitted papers from the inception of the conference through the past year (i.e. 1993-1998). This volume presents papers from the sixteenth conference held at Oakland University in May 2008.

The articles in this journal represent the work of undergraduate students, with the assistance from a faculty mentor. The authors are all undergraduate students; they are listed in the Table of Contents. The faculty mentors are clearly listed at the beginning of each paper, as are the academic unit and institution.

This journal represents the culmination of many years of experience in the collaboration process among three universities in Michigan that pride themselves on providing a quality undergraduate education. It also represents a strong personal commitment of many individual faculty members to undergraduate research and creative endeavors.

The Meeting of Minds Conference and this journal are a shared responsibility between the University of Michigan-Dearborn, the University of Michigan-Flint, and Oakland University. Each university accepts the responsibility to host the conference and subsequently to publish the journal on a rotating basis. The order of the responsibility follows the subsequent pattern: the University of Michigan-Dearborn in 2006, the University of Michigan-Flint in 2007, and Oakland University in 2008.

Manuscript Guidelines. All papers must be submitted in MS Word format. The text of all manuscripts was to be no more than 5-7 single-spaced pages (including references, images and graphs) typed in a 12 point Times New Roman font with one-inch margins. The instructions for preparing the manuscript are provided by the designated editor of a particular volume. Completed "Permission to Publish" and "Faculty Mentor's Approval" forms must also be included with the manuscript. These forms are available to students with the conference registration materials. The Editorial Board reviews submissions for documentation and compliance with manuscript guidelines. The authors are ultimately responsible for the content, information, and any interpretation within the manuscripts. Manuscripts accepted for publication become the property of the Journal Editorial Board. For each of the accepted manuscripts, a single complementary copy of the published journal is given to each author and faculty sponsor. Additional copies may be obtained from the editor at the host institution.

Foreword

Dear Friends,

Since its founding in 1957, Oakland University distinguished itself as an innovative institution offering the very best undergraduate educational programs in humanities and social sciences, performing and visual arts, and languages. Gradual evolution of the institution was also reflected in the development of programs in the natural sciences and professional schools. Numerous alumni, now leaders in our society and public life, attest to the outstanding value their engagement in undergraduate research or creative works provided in their lives and professions.

Oakland University continues its commitment to providing students an outstanding experience in undergraduate research and launching their future careers in innovation and discovery. While we salute our faculty for sponsoring student research, Meeting of Minds has provided a unique formal platform for students to test their skills and interest and follow their academic passions. The longevity of and commitment to partnership between the three institutions of higher learning is exemplary. The nationwide economic challenges and those of the State of Michigan can be addressed by investment in the creativity and preparation of future leaders. Collectively, we take great pleasure and pride in our faculty-sponsored student projects compiled in this treatise.

Virinder Moudgil
Professor and Provost
Senior Vice President for Academic Affairs

Preface

The 16th *Meeting of Minds Conference* is a continuing tradition based on a shared commitment to student research and creative endeavors at three Michigan public universities: Oakland University, University of Michigan-Dearborn, and University of Michigan-Flint. The *Meeting of Minds Conferences* have provided thousands of students with a unique opportunity to present their research and then publish it in the *MOM* journal. The *Meeting of Minds* celebrates the broad scope and high quality of student research guided by faculty mentors at the sponsoring institutions.

The *Meeting of Minds XVI Journal of Undergraduate Research* provides a fine selection of original student research papers presented at the 2008 conference held at Oakland University. The opportunity for student contributions to the *MoM* conference and its journal encourages mentored research beyond the classroom, which is crucial for learning problem solving, critical thinking, and creativity. The experience of conducting, presenting, and publishing original research shows students what they can achieve, motivates them to further pursue their creative endeavors, and supports their professional development. Publishing a research paper in the *Meeting of Minds Journal* is also a useful demonstration of advanced capabilities for students applying to graduate school.

The contents of this volume represent only a small fraction of the student research conducted at the three sponsoring universities. The published papers attest to the critical importance of creative student research mentored by faculty as a productive paradigm for higher education in the 21st century. Student authors have worked diligently with faculty mentors to conduct their research, present it, and produce the articles in the 2008 *Meeting of Minds* journal. This journal of the *MoM XVI* conference demonstrates the dedication of many of our students to research, creative expression, and scholarship.

The continuing success of *Meeting of Minds* is due to the students who conduct, present, and submit manuscripts on their original research, and the support of their faculty mentors. Our heartfelt thanks to the students, faculty, and support staff from each institution who have worked hard to make the conference and journal such a success. Organizing support at each institution is essential and greatly appreciated (Kathleen Moore and Laura Schovan at Oakland University; Jonathan Smith and Susan Gedert from the University of Michigan-Dearborn; John Callewaert and Andre Louis from the University of Michigan-Flint). The months of planning and organizing the *MoM* conference were well worth the effort, as the student research papers in this journal attest. Special thanks to the Oakland University host committee (Alan Epstein, Andrea Kozak, Cheryl Riley-Doucet, Kellie Hay, Tamara Machmut-Jhashi, Mukesh Bhargava, Aldona Pobutsky, Cindy Sifonis, Charles McGlothlin, Alberto Rojo, Mohammed Zohdy, and Karen Bolak) for their efforts preparing for the conference and editing the journal articles. Finally, special thanks to Tammye Stoves for her expert assistance with the final draft and to student assistant Maia Proulx for other editorial assistance.

Suzanne Spencer-Wood, Editor
Professor of Anthropology
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**Bronzino, Child of the High Renaissance: Emulazio in
Bronzino's "An Allegory with Venus and Cupid"**

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The works of Agnolo Bronzino display the characteristics of the Mannerist movement known as *emulazio*. According to this term, when an artist sought to manifest High Renaissance elements in their works, it was thought to be the “evidence of skill”¹ and resulted in a more beautiful work. Bronzino obviously embodies this admiration fully and was one of the most able Mannerist artists to recreate the height of the High Renaissance. Originally working off patterns literally made by his mentor, Pontormo², who was himself heavily entrenched in examples from the Masters, Bronzino eventually went on to recreate elements of the High Renaissance masters but also managed to transcend them. This extreme manifestation results in paintings that are highly individuated, vibrant, and belong to the highest ranks of Mannerist paintings. However, upon closer inspection, it can be revealed that many of the themes, figural types, and iconographies derive from High Renaissance examples. One of the best paintings to embody this intense amalgamation of High Renaissance techniques and Mannerist innovations is *Allegory with Venus and Cupid* (1540s: Oil on panel: 61 by 56 ¼ inches: National Gallery, London). By analyzing the effects that Leonardo da Vinci, Raphael, and Michelangelo had on Bronzino’s art and the London “Allegory,” it becomes apparent that Bronzino’s work is the child of the High Renaissance. Working under Pontormo, who was a recluse much like Michelangelo³, Bronzino emerged in the Mannerist period as a “suave court artist,”⁴ who produced paintings for an immensely wealthy and well-educated audience. His paintings reflect a High Renaissance influence but go far beyond them in their eccentricity. Rooted in the past and looking towards the future, his works are at the same time nostalgic and innovative. The London “Venus and Allegory” is one of the best examples of Bronzino’s style and is, without a doubt, one of the highlights of the Mannerist art movement in Florence.

The earliest manifestations of Bronzino’s work are heavily reminiscent of his mentor, Pontormo. Pontormo studied in the studio of Leonardo da Vinci as an apprentice⁵ and this association manifested itself greatly in his work. His dissections and levels of attention to the human figure paralleled the work of da Vinci and he was no less dedicated to achieving the most realistic depiction of the human body as da Vinci was. According to Vasari, Bronzino’s early work was so similar to Pontormo’s that it was virtually indistinguishable⁶. Pontormo, no doubt, fostered this, since in order for his young student to properly learn his technique, he supplied drawings that served as templates to early paintings⁷. This is manifested in such early works as *The Holy Family*, which was the result of collaboration between Pontormo and Bronzino. However, early glimpses of Bronzino’s later work can be found. For example, the figure of Christ, which was likely painted by Bronzino, is extremely reminiscent of the Cupid and putti figures from the London “Allegory,” specifically in the bright, rosy cheeks and the intricate ringlets.

The influence of Pontormo’s anatomical drawings can also be found in the Father Time figure. The strong musculature, veins, and sheer power of his arm is extremely reminiscent of

¹ Pilioid, Elizabeth. “The Influence of Michelangelo: Pontormo, Bronzino and Allori.” In *Reactions to the Master: Michelangelo’s Effect on Art and Artists in the Sixteenth Century*. Ed. Ames-Lewis, Francis and Joannides, Paul. UK: Ashgate, 2003. 31.

² Pilioid, Elizabeth. *Pontormo, Bronzino, Allori: A Genealogy of Florentine Art*. New Haven, London: Yale University Press, 2001.53.

³ Pilioid 33.

⁴ Pilioid 33.

⁵ Nigro, Salvatore S. *Pontormo Drawings*. New York: Harry N. Abrams, Inc., 1991. 17.

⁶ Pilioid 53.

⁷ Pilioid 66.

Michelangelo's Sistine Chapel paintings⁸, specifically *The Creation of Adam*. The tension and strain of the outstretched arms of God and Adam are extremely similar to the arm of Father Time and reveal an intense study of the human anatomy in order to duplicate such details. *The Last Judgement* also manifests itself as an influence on the Father Time figure. Saint Bartholomew's baldhead, gray beard, and facial expression are all mirrored in Bronzino's work, and indicate an intense respect for this piece.

The connection is undeniable, considering that Pontormo was commissioned to paint a "Leda and the Swan" figure based on a cartoon by Michelangelo⁹. This figure hearkens back to Praxiteles' *Aphrodite of Knidos* and recalls Vasari's assessment of good art, which states that an artist must display an adherence to Classicism¹⁰. As a result, by depicting a figure recalling an undisputed masterpiece of classical art, Bronzino's piece is praised much more highly. Also, his Venus embodies the grace of Leonardo da Vinci's earlier lost "Leda" painting. This painting likely made a strong impression on Bronzino when he set out to create the London "Allegory." One of the best connections to the High Renaissance in the painting is his Venus figure. The twisting figure, lusciousness of flesh, and dramatic contrapposto is almost a direct copy of Leonardo and Michelangelo's "Leda" interpretations. Additionally, the pale skin color is heavily influenced by Leonardo's work, such as the *Ginevra di Benchi*. The brightness of the background and the rosy cheeks of both the putti and Cupid heighten the depiction of Venus' skin as almost pale as ice¹¹. Petrarchan love, with its death stare and aloofness, certainly rings in this painting as well. Petrarch's poetry was well known by Bronzino. As a result, it is not too far a stretch to suggest that Leonardo and Petrarch manifest themselves in the Venus figure.

Similarities between examples such as Michelangelo's "Doni Tondo" Madonna figure are also numerous. The similarities are so intense that some scholars, such as Maurice Brock, go as far as to claim that Bronzino has "transformed the *Doni Tondo* into 'Venus and Cupid'"¹². While this statement is debatable, the similarities are not. For example, both employ the same raised right arm and are seated in similar manners. The rather small breasts, thick waist, and weighty thighs are common attributes to both as well. However, innovation can be seen in Bronzino's piece because his Venus exhibits womanly curves and soft flesh that lacks the heavy musculature that characterizes Michelangelo's Madonna.

On a side note, Raphael's influence can also be felt here. It can be stated that Raphael's early work had an impact on Bronzino. This manifests itself in the adornment of Venus' head. The pearl circlet contains a small golden image of a nude woman that mirrors Venus' pose¹³. This embodies the same notion of a small figure attached to jewelry that was common in High Renaissance art. For example, Raphael's *Maddalena Doni* wears a necklace with a tiny unicorn that requires the viewer to gaze closely at the painting to even detect its presence. This is a good example of the way that Bronzino was able to take the tools of the High Renaissance and contort them to Mannerist sensibilities because, in the High Renaissance example, a unicorn symbolized the Maddalena Doni's virginity. Conversely, in Bronzino's piece, the small nude woman

⁸ Brock, Maurice. *Bronzino*. Trans. Radzinowicz, David Poole and Schultz-Touge, Christine. Paris: Flammarion Publishing, 2002. 217.

⁹ Pilioid 36.

¹⁰ Cheney, Lina De Girolami. "Vasari's Interpretation of Female Beauty." In *Concepts of Beauty in Renaissance Art*. Ed Ames-Lewis, Francis and Rogers, Mary. Brookfield, Vt., USA: Ashgate, 1998. 179.

¹¹ Hall, Marcia. *After Raphael: Painting in Central Italy in the Sixteenth Century*. Cambridge, UK: Cambridge University Press, 1999. 229.

¹² Brock 230.

¹³ Brock 218.

signified her sensuality. This conversion of the holy into the sexual typifies the Mannerist effort to reform religious art¹⁴ while still playing off High Renaissance precursors.

Another High Renaissance connection can be felt in the amazing sense of color and contrast. The dark shadowing, intense shading, and rosy cheeks are all hallmarks of High Renaissance style. Mannerism, in this tradition, takes these techniques to the next level by intensifying chiaroscuro and adding creative flourishes¹⁵. Additionally, the brightness of the colors in the foreground serves the double purpose of focusing the main characters and also highlighting the elongation of their bodies and the lines of the torso¹⁶. Precedents in the Masters' work include the bright blue of Raphael's *Madonna of the Meadows*, which uses the richness of Raphael's dark blue but reinterprets it into a pale blue that also frames the entire composition of the London "Allegory." Additionally, Leonardo's *Virgin of the Rocks* employs the same intense reds and greens on the sphinx figure that Bronzino uses on his homage to Leonardo's sphinx in the "Venus and Cupid."

Bronzino's work is, no doubt, the result of his mentor Pontormo's close relationship with Michelangelo. He first encountered Michelangelo in 1530 and saw his works in Florence and Rome¹⁷. After this meeting, Pontormo dedicated his life to a "systematic investigation of the body"¹⁸ extremely similar to Michelangelo. Pontormo's admiration for Michelangelo was best manifested in his drawings and cartoons. His extremely vivid, detailed, and muscled figures are reminiscent of Michelangelo's figures, which can be seen in his cartoons of putti (Image 1). Described by Vasari as "natural and lively beyond belief"¹⁹, this figure strongly recalls Michelangelo's John the Baptist²⁰ in the *Tondo Doni* and embodies the same humorous and charming visage that Michelangelo's does. As it was previously noted that Bronzino's early style was typified by literally copying Pontormo's drawings, it becomes obvious that this High Renaissance influence was likely a result of his studies with Pontormo.

Bronzino's literal connection to the High Renaissance can be seen in a letter that he wrote to Michelangelo that stated that he considered himself "created by [him]"²¹. Not only in terms of stylistic similarities, Bronzino's poetry was the lovechild of the High Renaissance and was inspired by the poetry of Michelangelo.²² Bronzino's poetry draws on the High Renaissance intellectual boom and, like Michelangelo, these writings make themselves known in his artwork. However, Bronzino's work takes this poetic demonstration to the extreme. In fact, the entire composition of the London "Venus and Allegory" may be a direct iconographic depiction of poetry. This iconography is a perfect place to discuss the interplay of intellect, poetry and beauty because she rules over the arts, facilitates creation, whether it is literal or the birth of art, and symbolizes both intellectual and physical power²³. The meaning of the painting may be a direct allusion to poetry from High Renaissance and Mannerist authors such as Petrarch. It is known

¹⁴ Nagel, Alexander. *Michelangelo and the Reform of Art*. Cambridge, NY: Cambridge University Press, 2000 144.

¹⁵ Cheney 183.

¹⁶ Fermor, Sharon. "Poetry in Motion: Beauty in Movement and the Renaissance Conception of leggiadria." In *Concepts of Beauty in Renaissance Art*. Ed Ames-Lewis, Francis and Rogers, Mary. Brookfield, Vt., USA: Ashgate, 1998. 130.

¹⁷ Nigro 154.

¹⁸ Nigro 15.

¹⁹ Nigro 31.

²⁰ Brock 230.

²¹ Pilioid 36.

²² Gaston, Robert W. "Love's Sweet Poison: A New Reading of Bronzino's London Allegory." In *Sixteenth Century Italian*. Ed. Cole, Michael W. Carlton, Australia: Blackwell Publishing Ltd., 2006. 64.

²³ Cheney 187.

that both Pontormo and Bronzino were great lovers of the poetry of Petrarch and often compared notes on his prose in the Accademia Fiorentina²⁴. The poetry of Benedetto Varchi, a close friend and lover of Bronzino, and Bronzino's own poetry discussed the despair of not knowing whether love is true or false²⁵ and the contrast of the two sides of human nature²⁶.

This theme manifests itself in many areas of the painting. For example, the shadowed figure behind Venus is either a representation of the deception of love (Fraud) or a sphinx²⁷, which was a standard High Renaissance mythological creature and has strong connections to Classical Greece. The *Odyssey's* central antagonist, the sphinx, presents travelers with a riddle that asked the question of what evil and good truly were²⁸. The man who conquers her eventually ends up marrying his mother. As a result, the sphinx becomes the central figure in this painting and invites viewers to question their beliefs of right and wrong.

Whatever the true interpretation of the figure, the fact remains that they all share identical themes. All three possibilities are embodiments of the deception of love. Based on poetry from the time period, it may be stated that the figure is a personification of the true nature of femininity as an animal who uses sex as a sweet poison that kills slowly²⁹. Similarly, Petrarch's poetry, used in Leonardo da Vinci's work as well, stated that the true nature of a woman was like a venomous serpent³⁰. This, no doubt, is apparent in "Venus and Allegory," as the figure remarkably resembles this poetry. The honeycomb in her hand is an allusion to the sweetness that she offers her lover but, on closer examination, more sinister parts are manifest. A snake grows from the girl's behind and, winding its way around the putti's foot, it ensnares him in its grasp. This is an allusion to the capture of love and the sting it will soon inflict on the victim. In fact, the pain of love is already felt because the putti has been impaled by the girl's claw and is bleeding from a wound on his foot. The girl's association with the snake is found with its hissing tongue's embrace with her arm. Venus is intimately connected with this sphinx because she is literally in her shadow. It has been suggested that Venus is a fallacy disguising the true nature of the sphinx³¹. The association between the two can be found in her twisted S-shaped contrapposto, the black eyes, and the flicking tongue that mirrors the snakes'. Her tongue is the tool that transmits "sweet poison³²" like the sphinx's honeycomb. This addresses the topics discussed in poetry and is a very plausible interpretation of this portion of the painting. As a result, a dual nature reveals her true identity and also forms a strong bond to the poetry of the High Renaissance.

Even more telling than the poetry aspect of Bronzino's work is the intimate connection that Bronzino's sphinx has to Leonardo da Vinci. This similarity in the two figures is not something that is commonly discussed in art historical writings but there are undeniable resemblances between the two. Compared to Leonardo's *Virgin of the Rocks*, it becomes immediately apparent that the two figures are almost identical. In Leonardo's work, however, the clawed foot is much more obscured and almost becomes part of the landscape. In Bronzino's piece, due to the

²⁴ Pilioid 88.

²⁵ Gaston 66.

²⁶ Hall 230.

²⁷ Moffitt, John F. "A Hidden Sphinx by Agnolo Bronzino, 'ex tabula Cebetis Thebani'" In *Renaissance Quarterly*, Vol. 46, No. 2. (Summer, 1993), 289.

²⁸ Moffitt 294.

²⁹ Gaston 70.

³⁰ Gaston 70.

³¹ Gaston 72.

³² Gaston 72.

intensely glazed surface, only the honeycombed hand and hindquarters of the being are in shadow. Her foot is actually highlighted in the Bronzino, which is likely an allusion to the fact that the true nature of femininity has been revealed through his painting.

The notion of disguising one's true identity can be found in other portions of the painting. For instance, in the two theatrical masks in the bottom right corner display, which also elicit a connection to the High Renaissance. The appearance and positioning of the masks is unmistakably similar to Michelangelo's *The Dream of Life*³³ (Image 2). In this painting, the two masks sit underneath a box and signify the masks of Illusion and look nearly identical to Bronzino's in the London "Allegory." While the London "Allegory" strays a bit from this arrangement, the precedent is obviously set by Pontormo. His "Venus and Cupid" (Image 3) arranges the masks in an identical manner and, as a result, can be seen as an homage to Michelangelo's earlier arrangement. Michelangelo's example works perfectly in this painting because the masks work as further assurance that the scene is all about trickery and deception.

One of the masks forms a diagonal line of association with the figure across from Father Time³⁴ and connects it in theme to the fallacy of love. This figure, while appearing to be a complete person, is actually just a face with half of an ear, a neck, and hands. The mask, which is most commonly labeled as Oblivion, is intimately connected to the putti and Cupid because, as an individual struck with love, the only cure is forgetfulness. As the portion of the brain associated with memory in the High Renaissance was considered to be the back of the head, this part of the head is missing and symbolizes the only cure for the disease of love.

The anguished expression on the face of Oblivion is mirrored in the figure underneath it. It brings to mind Raphael's ability to reveal the physical and psychological tendencies of an individual's character through their facial postures³⁵. As a result, the figure at lower left, which is identified as either Jealousy or Despair, is shown either in extreme jealousy of the amorous love affair in the middle or is shown in the throes of an unrequited love³⁶. Bronzino's poetry is relevant here because it discusses the possibility of everyday people falling victim to the trickery of love. If one is not wary, he is subject to always being betrayed or deceived³⁷. This figure can be the victim of love and, as a result, has fallen into despair. This is perhaps the most hotly debated aspect of the entire painting and much scholarly ink has been spilled on the true explanation of its manifestation. The most interesting identity attributed to this androgynous figure is that it may be a syphilitic³⁸. This would be a very intimate connection to Raphael, as he died from the disease, and also reflects the High Renaissance tendency towards addressing issues of the day. Raphael portrayed papal issues in his Stanzae paintings, which revealed political aspirations, hopes, and dreams. Similarly, Bronzino depicted current events but may have chosen a social rather than political aspect. Syphilis reached epidemic proportions at the time³⁹ and the London "Allegory" may be an attempt to depict the moralization of love and show the effects of love on individuals. The physical symptoms that the figure is showing are consistent with mercury treatments for syphilis that were common at the time that caused violent headaches, which may explain the anguished facial expression, inflammation and reddening of

³³ Murray, Linda. *Michelangelo*. London: Thames and Hudson Ltd., 1980. 159.

³⁴ Brock 222.

³⁵ Parker, Deborah. *Bronzino: Renaissance Painter as Poet*. Cambridge: Cambridge University Press, 2000. 4-5.

³⁶ Gaston 74.

³⁷ Gaston 68.

³⁸ Brock 227.

³⁹ Brock 227.

the eyes, hair loss, and pale skin⁴⁰. Also, remembering that syphilis was believed to be transferred by kissing on the mouth⁴¹, featured prominently in the center of the painting, Brock's hypothesis may be correct. This explanation ties together the pricking of the putti's foot with the thorn, the tongue kiss in the center, and the figure at middle left. All suggest the negative effects that love may bring on an individual. As a result, the painting is literally stepping on love, which can be seen by the foot of Cupid that nearly crushes Venus' dove underneath his heel.

In conclusion, it can be said that Bronzino displays great *emulazio* for the High Renaissance. Using the London "Allegory" as a tool for testing this hypothesis, one can see the influence of Michelangelo's anatomical drawings and studies on Pontormo. He, as a result, passed this skill onto his student and Bronzino proceeded to use it extensively in the London "Allegory" in the twisting postures of Cupid, Venus, and the putti. Leonardo's eccentricity and splendid use of color can be felt in the rich blues of the drapery and the presence of a sphinx. Similarly, Raphael played a major role in the development of drapery techniques, bright colors, *chiaroscuro*, the manifestation of emotion, and the depiction of current events. More than anything, the sense conveyed in the London "Allegory" is that a new age of art had arrived. While relied on the High Renaissance, the new use of painting as a tool to convey poetic love language⁴² is quite novel and is unrivaled in the possibilities of iconography. The resulting amalgamation of High Renaissance artistic ability and Mannerist dramatics makes the London "Allegory" a masterpiece of *emulazio*. Bronzino, while certainly a son of the High Renaissance, belongs to the past but, in his artistic and literary reformation, ushered in the future in this painting and birthed an entirely new art movement in his wake.

⁴⁰ Brock 227.

⁴¹ Brock 228.

⁴² Gaston 77.

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Images

Image 1



Pontormo, "Head of a Laughing Child," 1518. University of Michigan Digital Database Image #102189

Image 2



After Michelangelo, "The Dream of Human Life," after 1533.

<http://www.nationalgalleryimages.co.uk/Imagedetails.aspx?q=Jealousy+%26+Envy&mode=Themes&stat=1&num=12&ng=NG8&frm=1>

Image 3



Pontormo, "Venus and Child," 1535. University of Michigan Digital Image Database

Image #363667

**Threshold of the West:
A Study of Timothy O’Sullivan’s Photograph
*Vermillion Creek Canyon***

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Regardless of the composition or techniques used, landscape art has always found its true purpose in evoking emotion from its viewers. The common landscape formula in painting, popularized by French Landscape painter Claude Lorraine, involved an expansive vista that lead the viewer’s eye in a zigzag pattern, but which did not place specific importance on a single object. These scenes gave a general feeling of well-being and tranquility, but failed to motivate or energize the viewer. Certain artists in varying media, however, were able to break away from this convention and provide their viewers with much more powerful images. Expeditionary Photographer, Timothy O’Sullivan was one of these artists. Due to his lack of formal artistic training, O’Sullivan was free to experiment with visual language and succeeded in giving images such as *Vermillion Creek Canyon* (O’Sullivan, fig. 1) a striking presence by a revolutionary use of composition in order to convey a deep sense of adventurism towards the American West.

As a photographer assigned to document the unknown areas and previously unstudied objects of the American West, O’Sullivan had the incredible opportunity to use visual vocabulary in an entirely new way. Although many common landscape objects would be found in the unexplored territories, O’Sullivan would also come across scenes with no representational precedent (Szarkowski, 118). The objects in *Vermillion Creek Canyon* presented O’Sullivan with a compositional challenge. How was he to compose a scene where the two main objects could only serve as a frame for the void between them? Rather than placing the camera at a greater distance to the cliffs, making them fill more of the visual plane than the space between them, O’Sullivan decided to use this geometric conundrum and conventional *faux pas* to his advantage. Refuting typical landscape prototypes, the two cliffs on either side of the canyon give way to the area they frame. This “negative” space then becomes more of a subject than the cliffs themselves.

This change of focus serves to open viewers’ minds to the possibilities that the empty space might hold. O’Sullivan’s portrayal of the West is by no means idyllic, but is, however, hopeful. The harsh realities of the land are displayed side-by-side with its promises of fertility and prosperity. As the sharp cliffs rise on either side of the vast expanse of *Vermillion Creek Canyon* the viewer is comforted by a small stream of water leading the eye out through the canyon and into the ready and waiting vista.

It was hoped that these images would result in strong motivation to industrialize and “civilize” the West. Following the Civil War, the United States government found itself confronted with a war-torn constituency void of a sense of hope or progress. The American West became the solution to that problem. As a pristine land, untouched by the war, the government wanted Americans to embrace the industrial and commercial opportunities of the uncharted land. Paintings of the American West had already met with great success and sentimental response

from the American public. Author William L. Fox describes the “West as a romantic stage which could not fail to inspire acts of heroism (Fox, 83).” The West had already gained an enchanting reputation by the time that the Government decided to send out Surveys to explore and catalog the unexplored land. Rather than employ painters, whose work could take months to complete and carried no guarantee of honesty, the Government turned to the still-novel science of photography. In addition to photographers, the Survey crews included draftsmen and scientists, whose job it was to provide maps and data findings about the lands. Of the four major surveys commissioned, O’Sullivan was employed as a photographer on two of them, The King Expedition (1867-69) and The Wheeler Expedition (1871-75). The Wheeler Expedition, during which *Vermillion Creek Canyon* was taken, was formed to explore the area west of the 100th meridian and make topographical maps of the Southwestern territories. George Montague Wheeler was given fifty thousand dollars by the government and employed no more than forty assistants as topographers, geologists, naturalists, packers, guides, laborers, and a single photographer (Horan, 238).

Although O’Sullivan was the only photographer on the expedition, he was not alone in his responsibilities. Due the extreme amount of equipment needed for photography at that time, O’Sullivan was given his own wagon and a small crew of assistants. The Wet Collodion Photographic Process, although it produced stunning images, was inherently ill-fit for mobile photography due to its necessity for a rapid succession of complicated steps. The glass negative plate had to be coated with a light sensitive solution in a dark tent, transported to the photographer’s camera, exposed, then re-transported to the dark tent to be developed all within a 30 minute period. Despite this, the Wet Collodion Process was used extensively for over 20 years.

In addition to its cumbersome qualities, the Wet Collodion Process was also overly sensitive to blue light. This caused a problem when photographing landscapes since it was impossible to correctly expose the sky and land simultaneously due to the high amount of blue light being reflected by the sky. An image correctly exposed for the land would contain a muddy-looking over-exposed sky. Being aesthetically unpleasing, the over-exposed skies were rarely left un-mediated. O’Sullivan’s image *Cooley’s Park* (O’Sullivan, fig. 2) shows a sky that has not been retouched, in which the virgin expanse can be compared with retouched skies of images such as *Vermillion Creek Canyon*.

Most often, in O’Sullivan’s case, a mask was cut to the exact outline of the sky on the negative plate. Using the mask, when a print was made from the negative, nothing in the area of the sky would be exposed. This resulted in an entirely white area. *Vermillion Creek Canyon* not only implements this masking technique, but also uses it to its advantage. The white sky, void of cloud or tonal differentiation only further emphasizes the sentiment of the wide-open space of the West.

Another way in which photographers attempted to improve Albumen print skies was to super impose a negative of clouds after having masked the sky. O’Sullivan did not use this negative sandwiching extensively, but there are several images of his which do employ this technique, such as his *Distant View of Camp Apache Arizona* (O’Sullivan, fig. 3).

The mediation of the sky was not the only element of this image that was determined by photographic syntax. Syntax (the limitations put on a medium by that medium’s technology) might have also affected the composition of *Vermillion Creek Canyon*. All view-cameras displayed the perspective image to the photographer in an upside-down and laterally reversed orientation. This was due to the Pinhole Principle inherently used in all cameras; when light

travels through a small aperture it will reflect an image upside-down and laterally reversed due to the light rays crossing paths in all directions. Although O'Sullivan would certainly have been accustomed to viewing his subjects in this fashion, it is still interesting to turn *Vermillion Canyon Creek* in the way in which O'Sullivan first saw it during the exposing of the plate. When inverted, it is evident that O'Sullivan's use of the white sky as a subject in itself was not unintentional by any means.

The composition of *Vermillion Creek Canyon*, especially when turned upside down, is a striking study in negative space. Previously ignored in most compositions, negative space is here used as a greater subject than the objects surrounding it. William L. Fox echoes this importance of space in his book View Finder:

“The central fact of the West in the nineteenth century was perceived to be space, a vast and unpeopled territory...The space was presented as both natural and symbolic, a wide-open environment that seemingly required massive feats of human engineering in response, and one that appeared physically to embody a democracy based on an ever-expanding economic horizon (Fox, 85).”

O'Sullivan seems to represent this sense of promise by being more interested in the West's void areas than the objects which encroach upon them.

The entire composition of *Vermillion Creek Canyon* is full of rich formal qualities. The asymmetrical distribution of tones, black to the left, grey on the right, and white in the upper center, helps move the viewer's attention around the image. At first glance, the viewer's eye focuses on the dark cliff façade on the left. Drawn then down into the foreground, the eye next travels up the opposite cliff and into the blank sky before sweeping down into the central open rectangle between the cliffs. The slight diagonal lines of the cliff tops help spill the viewer's eye into the center of the image. The silvery creek in the foreground catches attention and leads it through the canyon, creating a feeling of depth.

Although his composition is revolutionary in its approach to the landscape, O'Sullivan does follow several artistic conventions in *Vermillion Creek Canyon*. The image is relatively symmetrical on a lateral plane, which draws attention to the central area rather than distracting from it. The symmetry adds to the prevalence of a single vanishing point in the very center of the image. This classic technique of showing depth adds a dimension of simplicity to the image. The eye of the viewer is made to move cohesively from the scene's outer edges towards the center by the diagonal leading lines present throughout the scene.

In spite of O'Sullivan's lack of artistic training, he was aware of another artistic convention, namely the aversion to a certain visual phenomenon known as parallax. This phenomenon manifests itself in the inward slanting lines of tall objects when viewed from below. Modern culture is accustomed to examples of parallax, such as the slanting of skyscraper walls when viewed from street-level, and accepts the phenomenon into their aesthetic. Nineteenth century artistic preference, however, frowned upon parallax distortion and dictated that all scenes attempt to be captured in a way so as to maintain the correct angles of lines. It seems impossible that the lack of parallax in *Vermillion Canyon Creek* could be a random result due to the fact that the camera would have needed to be raised up higher than eye level in order to achieve parallel lines on either side of the canyon. Unless the camera was positioned on a hill, O'Sullivan would have needed to extend the height of his tripod. The absence of parallax provides for an increased level of honesty in the image. Rather than pointing the camera upward to capture the canyon and thereby monumentalize the cliffs, O'Sullivan opted to portray the canyon in a more objective light.

This honesty, however, was not always O'Sullivan's preference. As proved by The Rephotographic Survey Project of 1977-78, which attempted to recreate nineteenth century photographs of the American West using conventional camera equipment, many expeditionary photographers bent the objectivity of their images using camera angles and other techniques (Klett, 1-3). An example of Timothy O'Sullivan's mediation discovered by the Rephotographic Survey deals with the image titled *Tertiary Conglomerates, Weber Valley, Utah* (O'Sullivan, fig. 4). The image shows several natural structures which, in O'Sullivan's image, appear to be resting on the top of a hill or mound. Rick Dingus, photographer for the Rephotographic survey, discovered that those specific conglomerates actually rest on the side of a hill. Dingus proves through an image taken at a level angle that O'Sullivan actually tilted his camera in order to improve the composition of his image (Castleberry) (Dingus, fig. 5) (Klett, 20-21). This finding, along with many others, negates the assumed honesty of nineteenth century photography. However, when one considers the propagandistic purpose of such images it makes sense that O'Sullivan may have altered the truth slightly in order to portray the West in as magnanimous a light as possible.

The idea of O'Sullivan's photographs being used as promotional propaganda for the West brings to light to question of the possible interpretations of *Vermillion Creek Canyon*. Although the official purpose of the Surveys was to collect scientific data and make technical representations of the lands discovered, it was no secret that the government's goal was to promote the spread of Americans into the West. O'Sullivan would have known of this agenda and more than likely would have kept it in mind while selecting subjects and compositions to photograph.

Vermillion Creek Canyon would have effectively conveyed to the nineteenth century viewer a sentiment of adventure and progress. O'Sullivan creates a masterful amalgamation of the man-made and natural worlds and thereby creates a feeling of welcome for industrialized Easterners. The setting of the scene is completely rustic. Rough-hewn organic forms altered only by the weather govern the landscape. The canyon, in its geometric rigidity, seems to echo the ever-mounting tall buildings of the East's major cities. Geometric rectangles and triangles dominate the scene. Although the edge between the sky and the land is organic by nature, the sharp edge created by the masking is more similar to a city skyline than a virgin wilderness.

By assimilating the canyon with geometric forms and shapes, O'Sullivan is possibly inferring that the West was made to be industrialized. The classically American idea of Manifest Destiny provided not only the motivation, but also the responsibility for civilization to conquer the West. First coined in reference to the sentiments felt about the Louisiana Purchase of 1803, the idea of Manifest Destiny refers to Americans' mission to spread democracy and industrialization to undeveloped territories. O'Sullivan seems to be inferring through *Vermillion Canyon Creek* that the West was simply waiting for civilization to bring it to its fullest potential. It is as if this wilderness was so ready for industry and progress that it had created its own buildings and streets in the form of rectangular cliffs flanking canyons resembling broad avenues. The cliffs also seem to form a kind of open stage-curtain revealing the promise of the West. The sense of the wide-open West was extremely inviting for Easterners as an opportunity to implement the beloved ideal of progress.

Another popular interpretation of O'Sullivan's Western photography connects him with the modernist movement in art. As described by Robin E. Kelsey in his article *Viewing the Archive: Timothy O'Sullivan's Photographs for the Wheeler Survey, 1871-74* the idea of O'Sullivan as a predecessor of modernism has met with both strong opposition and support in artistic circles

(Kelsey, 21). Contextualists, being those who place the utmost importance of an object upon its chronological, sociological, and political environment, argue that the political agenda of the Surveys played the greatest role in the production of O'Sullivan's photographs. Modernists, however, "suppress the governing circumstances of O'Sullivan's practice (Kelsey, 1)" and focus on the similarities between O'Sullivan's style and the style of other Modernist artists. One of the largest proponents of the modernist tendencies of O'Sullivan, 20th century landscape photographer Ansel Adams, was instrumental in bringing O'Sullivan's expeditionary photography to an exhibition at the Museum of Modern Art in New York City (Kelsey, 1).

One can easily see the similarities to Modernism in the stark contrast of tones and abstraction of shapes within images such as *Vermillion Canyon Creek*. O'Sullivan provides the viewer with such an intimate view of a simple scene, that the objects fade from recognizable structures into simple geometric shapes. This almost mathematic simplicity recalls, to the modern artists' eyes, the works of Dutch painter Piet Mondrian, who simplified scenes into lines and color blocks. Although O'Sullivan never went as far as to totally abstract his subjects, it is easy to see how many Modernist artists were influenced by the unconventional simplicity and geometry of O'Sullivan.

The revolutionary compositional techniques used in *Vermillion Creek Canyon* create a space of foreboding rigidity side by side with a challenging promise for a bright future. O'Sullivan's use of the canyon as a frame for the negative space of sky and his ability to abstract shapes in order to help Easterners relate to the objects in the image proved to be effective strategies to promote the American West in the late 1870s. An intricate example of the power of expeditionary photography, *Vermillion Creek Canyon* is replete with technical and philosophical ideals and questions. Exposing even modern viewers to an almost alien world, Timothy O'Sullivan effectively creates a sense of wonder and a desire for adventure and progress.

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Figures



Fig. 1. Timothy O'Sullivan, *Vermillion Creek Canyon*, 1872. Albumen print, 10 5/8 x 8 in. Library of Congress, Washington D.C.



Fig. 2. Timothy O'Sullivan, *Cooley's Park, Sierra Blanca Range, Arizona*. 1873. Albumen print, 20.4 x 27.6 cm. George Eastman House, Rochester, NY.



Fig. 3. Timothy O'Sullivan, *Distant View of Camp Apache, Arizona*. 1873. Albumen print, 20.4 x 27.5 cm. George Eastman House, Rochester, NY.



Fig. 4. Timothy O'Sullivan, *Tertiary Conglomerates, Weber Valley, Utah*. 1869. Albumen Print, Library of Congress, Washington D.C.



Fig. 5. Rick Dingus, *Witches Rocks, Weber Valley, Utah*. 1978. Gelatin Silver Print, 8 x 20 in. Rephotographic Survey Project, Tempe, Arizona.

Omniscient Fool? Trevor Nunn's Film Portrait of Shakespeare's Twelfth Night

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The word “fool” may be defined in many ways. The definition of a fool often used by William Shakespeare is, “a member of a royal or noble household who provide[s] entertainment, as with jokes or antics; a jester” (Def. 5 “Fool”). Feste, the fool in William Shakespeare’s play, *Twelfth Night*, indeed takes on the part of an entertainer on Olivia’s estate. However, another definition that is often characteristic of a fool is, “deficient in judgment, sense, or understanding.” (Def. 1 “Fool”). Because of this definition, one expects a fool to maintain senselessness. Ironically, Feste the fool actually proves to be one of most intelligent characters in Shakespeare’s play as is apparent through his witty conversations with other characters.

Trevor Nunn, director of a film based on William Shakespeare’s play, *Twelfth Night*, takes Shakespeare’s original character Feste the fool, and assigns him a very unconventional role. Rather than maintaining Feste as a closet character, as he has been formerly portrayed, Nunn establishes the “fool” as the very backbone of the story, allowing everything to be seen through Feste’s point of view. Feste is used by Nunn as a medium through which he portrays the events of the story. This is first evident by Feste’s role as narrator in the story. Feste is the first person heard in the beginning scene of the film while giving the background story, and also takes on the main role in the last scene of the film, acting as a liaison between the audience and the characters in the story. Nunn secondly portrays Feste’s omniscience in the film by deliberately creating scenes in which Feste is viewing events that are meant to be private. Because Feste knows the innermost feelings of all the characters, he is again taking on the role of an all-knowing outsider. Lastly, Nunn endows Feste with an array of strong emotional qualities as seen in his actions, facial expressions, and interactions with other characters. These emotions portrayed by Feste seem to correspond with the overall attitudes that the viewer is lead to feel in regards to the characters in Nunn’s film. Feste’s emotional intelligence also gives him an air of empathy and knowledge of human nature, marking him as a superior being whose part in the story is mainly that of an onlooker and critic, exposing Nunn’s attitudes toward Shakespeare’s original play and its characters.

In the beginning of the film, Nunn adds a shipwreck scene in which Feste narrates the story and gives background information about Viola’s and Sebastian’s close relationship. Nunn afterward presents Feste gazing down at the shipwreck survivors from a cliff, giving the viewers a trace of Feste’s omniscience. In the shipwreck scene, Feste is heard giving a narration of Viola and Sebastian, twins who he says, have no family but each other. When they are involved in the shipwreck, the two are separated after going overboard. After Viola washes up on a foreign shore called Illyria, Feste goes on to state that the shipwreck survivors from Messaline are at war with the natives of Illyria. This not only gives the viewers important information, but this use of Feste’s narration also gives the impression that Feste knows much more than we otherwise would have given him credit for. Feste’s narration in the beginning of the film allows us to see him as an outsider looking in on all of the characters. Because he knows the background

information of the twins as well as the Viola's outcome, we are led to believe that he also has a narrator's knowledge regarding the other characters in the story.

The second scene displays the Duke of Illyria's soldiers on horseback. It is obvious that the soldiers are looking for the survivors from Messaline. Immediately following the image of the soldiers, a low-angle shot captures Feste sitting on a cliff far above the shore. The camera then cuts to a close-up of Feste's face. This cut to Feste makes it obvious that he is watching the manhunt. Next, Feste is seen looking down at the rocky shoreline when the scene cuts directly to Viola, virtually explaining to the viewers that Feste is watching her and knows what is going on. Believing Sebastian to be dead, Viola disguises herself as a man in order to serve Orsino, the Duke of Illyria. Nunn allows the camera to cut directly from Feste, overlooking the fate of the survivors, to Viola, casting down her necklace as she casts away her feminine identity. Feste's viewing of this private occurrence shows that he knows about her transformation from female to male, setting him apart from every other main character in the film and ultimately allowing him to be seen as omniscient. Feste's narration of the background story as well as his knowledge of Viola's private transformation both support the idea that Feste has a high level of awareness of the events of the story, much like the director himself.

The next time we see Feste, he is in a short scene in which he is going into his mistress, Olivia's, house. We again get a glimpse of Feste's knowledge of the other characters in the film when he shows his awareness of Maria's and Sir Toby's chemistry. When Maria first lets Feste into Olivia's house, he is carrying a bag, showing that he is like a traveler because he has been carrying his belongings with him. He is being introduced to the story formally when he enters like a traveler. Maria then reprimands Feste for being out so long. However, Feste, changing the subject, mentions Sir Toby Belch. Maria subsequently tells Feste to hush because she does not want anyone to know of the relationship that she has with Sir Toby. Feste points his finger at her and retains a look on his face as if to say, "I'm keeping my eye on you." We here first see Feste's joking manner as well as his fondness of Maria by joking with her in such a way. However, more importantly, we once again perceive that Feste knows and understands the secrets of the other characters and can perceive them as an all-knowing character.

In the scenes following Feste's arrival to Olivia's house, we get a glimpse of Feste's genius and his sympathy. Through his facial expressions and actions, his views of Olivia and Malvolio are expressed and conveyed to the viewers, portraying Nunn's views of these characters. Later, Nunn visibly illustrates Olivia's confidence in Feste and her comfort in his presence, exposing him as the only person that Olivia looks up to. This once again establishes Feste's superiority in the film. After the funeral of Olivia's brother, Feste is seen on a hill overlooking the exit of the funeral attendees. The camera zooms in on him, and once again, it appears as though Feste is an overseer in the story. The camera then pans to a closer view of the church, where Feste is shown, waiting for Olivia at the bottom of the steps. Olivia appears to be in a very sour mood, not only because she is entirely garbed in black, but also because she seems to be rushed as she walks away from the church. She does not smile, but appears to be very tense. Feste recognizes Olivia's misery as she exits, and sympathizing with her, he tries to cheer her up. To do so, Feste approaches the hurried Olivia and asks if he can prove her to be a fool. She stops and coldly responds, "Can you do it" (1.5.51)? When he answers in the affirmative, Olivia declares, "Make your proof" (1.5.53). While saying this, she stares angrily at Feste. All of her words are sharp and she seems to be accusing Feste for making her suffer the pain of her brother's death. She acts as though she were sick of human contact altogether and we can see she is genuinely aggrieved. As Feste lifts up her veil, Olivia looks to the side as if impatient. Then

she glares up viciously at him while he proceeds to ask her why she is mourning. She replies, “Good fool, for my brother’s death” (1.5.59), as if to sarcastically say, “Why don’t you rub it in some more?” Feste then ventures to say that her brother’s soul has been condemned, but Olivia stoutly tells Feste that it is in heaven. Feste wraps up his claim by declaring, “The more fool, madonna, to mourn for your brother’s soul being in heaven” (1.5.62-63). Nunn makes sure that Feste does not seem insulting as may have previously been the case, but uses this opportunity to show that Feste is a very caring person. Rather than really calling Olivia a fool, Nunn shows that Feste is actually trying to lighten the mood because, after using this humor, it is obvious that Olivia’s demeanor changes significantly. She is no longer the bitter woman that had been walking away from the funeral just a moment before. Rather, she meekly looks at Feste and even offers a hint of a smile, giving the impression that she is a sweet young girl who is only temporarily aggrieved because of the death of her brother. Feste’s sympathy for her is consequently conveyed to the viewers, resulting in the compassion for Olivia and her situation.

It is also very important to note that because Olivia has no immediate family living, she takes on a superior role in her household. By allowing Feste to lift her veil while speaking to her, she is showing her strong respect for him. Feste proves to take on a superior role by removing the veil, and Olivia takes on a passive role by allowing him to do so. This is one of the few times in the film that Olivia fails to take command over another person. Not only does the “lifting of the veil” depict Feste’s superiority in the film, but also strongly suggests that he is very emotionally close to Olivia. After succeeding to cheer Olivia up, Olivia asks Malvolio what he thinks of Feste’s foolery. Malvolio condescendingly voices his disapproval of Feste while Feste glares bitterly at him. Feste enforces his disapproval of Malvolio upon the audience, allowing them too to view Malvolio as an arrogant and pompous old man who only acts in accordance with what he believes will make him favorable in the eyes of his mistress. However, after Malvolio condemns Feste’s foolery, Olivia rebukes Malvolio for being arrogant. Going over to Feste, she puts her hand on his chest while she advises Malvolio that there is nothing wrong with a fool expressing foolery. By placing her hand on Feste’s chest, Olivia appears to be protecting him from Malvolio’s insults, not only with her words, but also with her gestures. Thus, Feste and Olivia again seem to be very emotionally close to one another. Maria suddenly interrupts the dispute between Malvolio and Feste with the news that the duke sent a servant to declare his love to Olivia. Olivia sends Malvolio to the gate to send away the servant, who is actually Viola disguised as the duke’s male servant. Before Malvolio leaves to open the gate, he and Feste both glare at each other with strong disapproval, further emphasizing their dislike of one another. Feste’s sympathy for Olivia and his dislike of Malvolio are consequently projected to the viewers, who then perceive Nunn’s view of these characters portrayed through Feste.

In the next scene, Feste and Olivia are shown together in Olivia’s house. This scene opens with Olivia taking off her black mourning veil. She and Feste are alone in a dimly lit room in her house. After telling Feste that people get tired of his foolery, Olivia turns around with visible tears accumulating in her eyes. Finally, losing her composure, Olivia runs into Feste’s arms. Feste receives her and tries to comfort her, realizing that Olivia had not actually meant to be unkind to him. This instance illustrates Nunn’s portrayal of Olivia’s confidence in Feste. He seems to be the only intelligent person that Olivia can relate to, once again depicting him as a superior being. While Feste tries to comfort Olivia with his embrace, Sir Toby enters the room. The camera pans from the close-up of Olivia and Feste to a long-shot of Sir Toby, who is visibly drunk. After attempting to tell Olivia about the visitor at the door, he catches a glimpse of Feste and yells loudly to him. As Feste smiles at Sir Toby, the two embrace each other joyously. Sir

Toby is seen by the audience as a comical character, and Feste's palpable approval of Sir Toby confirms this view. After Sir Toby exits the room, Olivia looks at Feste and the two burst out in laughter at Sir Toby's state of drunkenness. Feste then goes to sit next to Olivia on a bright red couch. A single ray of light is coming through the window and is shining on the red couch. Ironically, Feste sits on the couch so that the light hits his face, possibly symbolic of the joy that he brings to Olivia. Olivia fingers Feste's scarf, yet again exposing her fondness of him. After Feste gets up to leave, a long-shot captures him looking back at Olivia. His solemn face shows that he is feeling pain for Olivia as she is left on the lonesome couch slumping down under the burden of having to care for her household alone. This scene once again allows the viewers to share Feste's sympathy for Olivia and also share his delight in the comical Sir Toby.

The next major scene in which Feste plays a role involves a plot against Malvolio. In this scene, we can further perceive Feste's fondness of Sir Toby, and his dislike of, as well as his pity for, Malvolio. This scene opens with Sir Toby and Sir Andrew waking Maria up by throwing stones at her window. Feste sneaks up and joins the two men before all three go into the kitchen. Once there, they all settle down to hear a love song by Feste. The lyrics show that Feste has had a past love that he has lost because, after the song, he appears to be suddenly saddened. He looks away while hinting at a laugh as if to say, "but that is all in the past now". Feste's emotionality also gives Feste an air of omniscience because we know that he has experienced love. This gives him an edge over the many other characters in the play that have not yet fully experienced love. Such characters include: Viola, who loves the duke; the duke, who loves Olivia; Olivia, who loves Cesario; and Sir Toby and Maria, who are in love with each other. All of these characters are like teenagers madly in love, while Feste is like a wise, old man, who understands all aspects of life, including love. Sir Toby then breaks the somber mood by gathering and banging on pots and pans. Feste and Sir Andrew join in and the three march around the room as if they are marching in a parade. Feste goes over to the piano and plays a jolly tune while the other two men are dancing. When Malvolio hears the racket of the gentlemen downstairs, he leaves his room. While standing above the others and behind the banister, he condemns their "madness". Sir Toby starts to sing in spite of Malvolio. Feste then places a boater hat on his head and points his arms in Sir Toby's direction as if presenting him to a crowd of people. Feste begins to play the piano and sing with Sir Toby and the two begin to make fun of Malvolio in their song. They think Malvolio's irritation is amusing, and by singing, they are exposing their disapproval of him. After Malvolio leaves, Maria tells Sir Toby and Sir Andrew of her plot to have revenge on Malvolio. Feste can be seen in the background looking solemnly at them, then deciding to leave. Although it is obvious that Feste dislikes Malvolio, it seems as though he also feels sorry for Malvolio and consequently refuses to take direct part in the vengeance being plotted against him.

Feste's views of Malvolio are further sensed when Malvolio is imprisoned. Sir Toby pays Feste to dress up as Sir Topaz, the reverend, and to declare Malvolio mad. This scene commences with Maria putting a hat, cloak, and long beard on Feste. Because Sir Toby is seen in the background with alcohol and a plate of food, it is obvious that he treats this scene as a spectator sport. Malvolio is kept in a prison that lies in the side of a hill. There is a small window that opens from the outside to let bars of light shine in, much like a jail cell does. Feste approaches and proceeds to declare Malvolio mad. Sir Toby watches the incident as Malvolio, sobbing because of his current plight, replies in tremendous agony that he is not mad. However, Sir Topaz refuses to believe it and walks away from Malvolio's lightless prison. Feste approaches and holds out his hand to Sir Toby, who gladly gives him recompense for his troubles. Nunn adds this payment scene to illustrate that Sir Toby is the one behind Malvolio's

suffering and that Feste does not take part in the scheme chiefly to be cruel to Malvolio. Sir Toby and Maria then kiss, after which, Feste nods toward Maria, showing his understanding of her connection with Sir Toby yet again. Once the two leave, Feste takes off his pastor costume and makes his presence known to Malvolio by singing. Malvolio hears Feste and begs him to come over to the prison cell. Malvolio adamantly declares that he is not mad to Feste, who cannot help but bring a joke in. He says, “Nay, I’ll ne’er believe a madman till I see his brains” (4.2.106)! Simultaneously, he smiles and slams the shutters of the window closed, exposing his dislike of Malvolio. However, immediately afterward, Feste removes his smile and says in a cheerless voice that he will fetch Malvolio paper and ink to write a letter to Olivia with. Again we are reminded that although Feste dislikes Malvolio, he still feels sorry for him because of his abuse.

Directly after this, Feste sees two scenes that are meant to be private, revealing his inside knowledge of the other characters. Feste leaves Malvolio’s prison to get the paper and ink. While beginning to sing, he peers around the corner of the church. He sees Olivia and Sebastian kissing after her wedding veil is lifted, which traditionally represents a marriage, and in this case, a secret marriage. After this, Feste peeks into the church window and the camera cuts to the priest inside as he is marrying Sir Toby and Maria. These occurrences demonstrate that Feste knows the inside information on the other characters, and is the only one who does so, once again revealing his supervisory position in the film.

In one of the final scenes of the film, Olivia and the duke meet outside Olivia’s house. Here, Feste shows compassion for Sir Andrew and shares the emotions of the viewers when a “happy ending” takes place. Olivia had just revealed her marriage with Sebastian to the duke when Sir Andrew and Sir Toby enter the scene, both with bleeding foreheads. After Sir Andrew suggests to Sir Toby that the two get their wounds fixed together, Sir Toby rebukes him, calling him an imbecile. Because Sir Andrew had believed beforehand that Sir Toby was his only friend, Sir Andrew is extremely hurt by the criticism. He looks at Sir Toby in utter shock and has a sad look of betrayal in his eyes. As he walks away, the audience feels very sorry for him. Likewise, Feste portrays this sympathy on his face, showing that he too feels sorry for Sir Andrew. Nunn obviously wanted this moment to be depressing, and he uses Feste to convey this intention.

After Sir Andrew leaves, Sebastian enters the picture and confirms his marriage with Olivia. The twins, Viola and Sebastian are then reunited after having previously believed the other to be dead. When the camera turns to Feste, he is tearing up, and while smiling, brings his hand up to his mouth as if to hold in his joy. The duke then proposes to Viola. Feste is shown with his hand close to his heart at this moment, symbolizing that it is an exceptionally emotional one. Nunn thus uses Feste, along with music, to verify the happy ending that the audience perceives.

Next, Feste walks up to Viola and produces the gold necklace that she had cast off in the beginning of the film. He puts it around her neck and we finally get proof that Feste had known of Viola’s feminine identity all along. His overseeing identity as narrator is exposed to all of the characters and reinforced upon the viewers. The happy parties then go inside to an array of applause when Malvolio appears in a completely disheveled state. After Olivia realizes that a prank had been pulled, she is in awe. Feste comes down the stairs while wearing Malvolio’s wig, thus mocking him. Feste declares that he had feigned Sir Topaz and gravely tells Olivia that she had helped to bring about Malvolio’s embarrassment by unconsciously encouraging Malvolio’s love. By telling Olivia this in a dismal tone of voice, he is implying that Malvolio’s deception was actually misfortunate. He shows that he does feel bad for what happened, but through his mockery, he shows that he is rather glad that Malvolio had been taught a lesson. Thus, the

audience sees Feste's emotions regarding Malvolio, and develops similar emotions as Nunn intended.

In the final scene of the film, Feste leaves and once again pursues his travels. While leaving, he sees the fate of all the other characters, taking up again, taking the position as and all-knowing narrator. Feste is heard singing and seen carrying his bag as he leaves Olivia's estate, a traveler, a traveler, leaving as he had come. While still singing, he sees Sir Andrew leaving in a horse and buggy. Then, as he exits Olivia's estate, Sebastian is seen exiting through the front gate. Feste continues to leave by walking up a hill where sees Sir Toby and Maria leaving in a carriage on their honeymoon. He salutes the two, and after continuing on his way, he sees Malvolio leaving Olivia's house with a suitcase. The outcomes of all these characters are not made known in Shakespeare's original play. Feste, seeing the directions that all of these individuals take after leaving Olivia's house, exhibits his upper level of knowledge and his role as overseer in the film.

Feste is thus seen throughout the play as Nunn's proxy. He not only takes on a superior role by narrating the film and overseeing the film's events, but also shares all of his widely ranged emotions with the viewers of the film. Feste seems to take the place of Nunn in the film, exemplifying all of Nunn's views and opinions of Shakespeare's original literary work. This intelligent portrayal of Feste is noticeably contrary to the traditional definition of a fool. Through his wit and knowledge of the other characters in the film, it is evident that Feste is the complete opposite of a fool. He is not deficient in judgment, but forms many strong impressions of the characters, which in turn, are conveyed to the audience. He is not senseless, but wise; he is not ignorant, but omniscient. Feste is, in fact, on a higher level of intelligence than anyone else in the film. His overseeing of the film's events from beginning to end expresses this, making him not only witty as he is in Shakespeare's play, exemplifying his intelligence, allowing him to be all-knowing, and probably the most important character in the film.

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The Mask of the Safehouse in John Sayles' *Lonestar*

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According to Mary Louise Pratt, safe houses are meant to be “social and intellectual spaces where groups can [come together] with high degrees of trust, and shared understandings.” (Pratt) A safe house is meant to be a place where groups can find mutual comfort, relaxation, security, and protection. In John Sayles’ film *Lone Star*, the safe house, a bar fondly referred to as “Big O’s” at first appears to provide African-Americans, Mexicans, and discriminated populations of the small town, Frontera, Texas with a secure and comfortable location. However, as the film progresses, we discover the “safe house” is far more complex and contested than the term suggests. It can also be a place of turmoil and even violence where contact zones are presented and the prejudices of the day are fully exploited. The safe house in the Sayles film clearly depicts three major drawbacks of safe houses: a false sense of security, an environment that potentially breeds violence, and a place that divides instead of unites. Is a safe house really safe? In Sayles film, *Lone Star*, a well-known and popular safe house proves itself to be one of the most violent locations in the film and a place that deals with contact zones the most. The film *Lone Star*’s safe house is, in actuality, the most dangerous place.

In the beginning of the film, the bar, “Big O’s”, is described and portrayed as a safe, hospitable environment and a place where the discriminated Mexican and African-American citizens can be free of white American ridicule. However, the false sense of security that is presented is quickly mutilated by the violence within an in-group. As the scene begins, a young African- American boy walks into the bar and looks around. As he stands there, he slowly reaches into his coat pocket. At this point in the film, Sayles sets up the theme music and environmental setting to persuade the audience to assume and anticipate that this boy pulling out a gun. Instead, the boy pulls out a newspaper article. Sayles cleverly uses film techniques like camera angles, lighting, and sound effects to prove his point about how prejudiced society is.

The scene continues and a gunshot is heard. The once supposed safety of this safe house is suddenly dispersed into a sense of insecurity and terror. The boy with the newspaper walks over to see the victim of the shooting and sees a fellow African-American that had just been shot by a member of his supposed African-American “in-group”. This fact further emphasizes the false sense of security that a safe house implies. Under normal circumstances, a person surrounded by those that are of their same culture and ethnicity should feel safe and at ease. Conversely, and creating a even stronger sense of fear and panic, the violence sustained at the safe house is committed by and against members of the same ethnic group. The shooting of an African-American soldier by another African-American quickly weakens the notion of this place being safe.

This false sense of security amongst the people at the bar shows one of the first flaws that a safe house has. Gloria Anzaldau, an American-Chicano writer, describes the hazards within a safe house. Anzaldau states that “we don’t identify with the Anglo-American cultural values and we don’t totally identify with the Mexican cultural values. We are a synergy of two cultures with

varying degrees of Mexicanness of Angloness.” (Anzaldúa, 50) This twofold identity held by the groups assembled in *Lone Star* creates a turbulent environment where one expects there to be a cohesive atmosphere. Therefore, the safe house creates a false sense of security.

Secondly, Sayles effectively presents an example of a situation in which the safe house generates violence. The film smoothly transitions to the past when Otis Payne and Charlie Wade first meet each other. This time relapse allows the audience to witness an encounter between Otis and Wade. Charlie Wade, prejudiced, stuck-up, and rude, demands that Otis pour his drink along with Hollis’s. As Otis complies and pours the drinks, Wade pulls the glass out from under the beer bottle, and it spills. As Wade harshly looks at Otis, he says, “Aw--look what you done now. Better get something to wipe it up, son.” (Screenplay)

Otis struggling to control his temper replies, “You spilt it, you wipe it up.” (Screenplay)

Enraged, Charlie Wade responds, “I told you to do something. Are you gonna hop to it, or are we gonna have a problem?” (Screenplay) Otis is frightened but not wanting to back down, continues to hold his ground. Then, Wade continues to prod by saying, “Don’t want to turn tail in front of your people. I understand.” (Screenplay) As Wade finishes his sentence, he turns to leave and then suddenly wheels around and hits Otis in the face with the butt of his pistol. Shocked and angry, Otis reacts by picking up a nearby chair to defend himself but is met with the barrel of Charlie Wade’s pistol as Wade says, “Come on, Houston, give it a try! Come to Poppa.” (Screenplay) This scene is a wonderful example of how a place that was considered to be a safe house, is truly a place that harbors many prejudices and breeds violent events.

Finally, the third safe house scene demonstrates the way that the safe house, which is designed to strengthen relationships within the same ethnic groups, only divides the groups further. This final scene demonstrates the most significant act of treachery and malicious hate that occurs in the so-called safe house. Again, the film travels to the past to another encounter between Otis Payne and Charlie Wade. Otis was in the back of the bar “after hours” playing an illegal game of craps, when unexpectedly, Charlie Wade shows up at the door. All of the other players leave and Otis is left alone with Charlie and Hollis. Charlie gives Otis a good beating and then demands money. Otis reluctantly gives the money to Wade. Then, Charlie gestures for Otis to retrieve his gun. As Otis turns to get his gun, Charlie Wade looks back at Hollis and winks. The audience gets a sense of déjà vu at this point in time because this was the same tactic that Charlie Wade used when he murdered Eladio Cruz. As Wade aims, Buddy Deeds enters and shouts out, “Charlie Wade!” Following Buddy’s exclamation, two gunshots are heard. Then, instead of Otis falling over dead, it is Charlie Wade that is shot by Hollis and collapses to the ground.

There are many aspects to the effect that the outcome of this scene has on the portrayal of the safe house. The fact that Hollis, a member of Charlie Wade’s ethnic group and culture, was the one to murder him is a perfect example that encompasses many of the dangers of the safe house. Hollis’s actions demonstrate that the safe house created a false sense of security for Charlie Wade. The safe house had, once again, bred contempt and violence, and in the present time, the safe house is a place where Sam Deeds finally realizes that his friend and fellow ethnic and cultural companion, Hollis, has been hiding his actions for their entire relationship. Ironically, this strengthens the relationship between Sam Deeds and Otis Payne, members of two different ethnic groups, and creates distance between Hollis and Sam Deeds, members of the same ethnic group. In this scene, the goal of the safe house, to bring a group closer, is contradicted as members of different groups are brought closer and members of the same group grow farther apart.

The closing scene puts the final emphasis on the many flaws that the safe house, “Big O’s,” contains. The safety and trust that Charlie Wade had in Hollis was shattered in a place that was supposed to be safe. The betrayal that Hollis made when he shot Wade, occurred in a place that was supposed to be harmless and a place where you were amongst your close friends who were of the same opinion and race as you. This revelation of the past also puts a sense of eternal and indignant danger around “Big O’s” bar. The false safe house that has been portrayed throughout the film is now revealed to have a past of being dangerous. This makes a powerful case and starkly portrays the real perils that lie within the assumed safety of a safe house. This scene puts the definitive emphasis on Sayles’ depiction of the reality of the hazards within the safe house.

The fictitious sense of security, the high rate of violence, and the distancing within in-groups are just a few of the ways that Sayles uses to expose the falsities that safe houses make available. In the film, *Lone Star*, Sayles effectively illustrates the dangers of a safe house and the threat that a safe house permits. The fanciful vision of what a safe house should be is completely disproved by several scenes that are presented in the film: the scene when a soldier in the Army is shot by one of his own race and culture, the scene when Otis and Charlie Wade first meet one another, and the scene when Charlie Wade almost murders Otis, but is instead murdered by his deputy Hollis. The film shows two examples of the same kind of treachery and betrayal of members of the same race, a similar event that occurs in two very different cultural groups, which also implies to the similarity of the so-called enemy groups. Ironically, the film displays the fact that the most dangerous place in that town is the safe house.

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How IT Outsourcing and ERP Affects the Current Global Economy

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Project Abstract:

The growth in the Enterprise Resource Planning (ERP) sector from 1995 to the present has been enormous, and the chief software vendors are multi-billion dollar corporations. This paper details the evolution of the industry and associated companies, highlighting facets such what outsourcing is, and the positive and negative aspects of the decision to outsource.

Description of the project:

The purpose of this paper is to analyze the growth in the ERP (Enterprise Resource Planning) sector and IT industry between 1995 and 2007. The study of the past decade is particularly important for our economic growth because the US has the majority of the software giants and other large IT corporations. Many of these companies have outsourced more than half of their jobs abroad to countries such as India, China, Philippines and several Latin American countries including Mexico.

Outsourcing has become an acceptable and fashionable way of providing services in both public and private sector organizations. Many companies that have traditionally employed their own cleaning, catering and security staff now sub-contract or outsource these to specialist suppliers. Appropriate employees of the organization are usually transferred to these suppliers and hence become employees of the specialist contractor. This contractor then provides an agreed service to the host organization for a specified contract period. At the end of this period the host organization is able to evaluate competing suppliers before placing the next contract. The specialist supplier assumes profit and loss responsibility for the delivery of the service as well as taking on the employment and employment rights of the employees.

This study will use primarily qualitative research methods to interpret theories and data obtained from several sources in the context of business process outsourcing that explores the growth in the ERP and IT sector. The scope of the research is limited to a few sample countries studied.

Literature Review:

Defining Outsourcing in the IT Sector

'Business Week' called the new concept 'transformational outsourcing,' (also labeled by some experts as offshoring). They explain that outsourcing to a foreign country is really about corporate growth and making better use of their skilled American employees

Outsourcing is a significant trend in the delivery of Information Systems (IS) and Services. The principle of outsourcing is that specialists are brought in to provide the supporting functions, allowing the management of the company to concentrate on its core business. This may be to provide insurance as a core service. Here information systems are a facilitating or enabling service. Thus, outsourcing means that the management of the company can focus on its reason for existence, rather than being diverted into time-consuming tactical issues concerning its support services.

Reasons for Outsourcing

A study by Dr Weihua of the National Association of Software and Services Companies (NASSCOM) found that the chief reason for outsourcing to be the ‘aging American population’, which makes the case for offshoring IT and other jobs to locations like India and the China. The report predicts that the US will experience an annual GDP growth of 3.20 percent, which will lead to an increased demand for labor. But the country will see a domestic labor shortage of 5.6 million by 2010, because of an aging population and slow population growth. (IEEE 785 – 789)

Outsourcing Advantage, another IT firm that moved from California to China, located its production offices in Beijing in 2002. They claim that, “We are able to offer very high quality services at very low cost. In fact, our software development rates are often 50% cheaper than most other software design firms. Why is this so? We work with very talented "young techies" with 2-5 years experience. Their labor costs are some 60% less than if we had placed our production offices in the United States.”

One reason companies continue sending tasks overseas is because they are satisfied with the results. Despite the challenges of moving IT, business process and contact center services to overseas locations, companies are satisfied with their offshore outsourcing initiatives, according to a new study by the Weissman Center for International Business at Baruch College and The Paaras Group (Gupta et al 2003).

Abate’s (2007) article was based on surveys and interviews with 38 global companies, mostly based in North America. The survey found that momentum for outsourcing is continuing unabated, especially as companies gain confidence and experience in their ability to manage offshore operations. The survey also found that offshoring delivered significant benefits to pioneers as well as newcomers in 2003, with companies able to improve quality while cutting costs.

When analyzing how outsourcing goes beyond saving dollars, we see that McKinsey’s study (Craig and Wilmott 2005) recounts how a large airline could go beyond leveraging just cost savings in offshoring back-office functions. This article talks about expanding the scope of fare audits, revenue management, and tactical customer relationship management with the cost savings effected. The airline was also looking beyond simply executing business processes to process reengineering, IT automation and consolidation of IT platforms. The savings from lowered labor costs for back office functions could be applied to work it couldn't do before because of costs, priorities and lack of sufficient human resources.

Many companies will share with you their own anecdotes about how, when they added up the costs of travel, coordination, delays and changes, the promised cost savings in outsourcing were always much smaller than originally expected. Looking beyond cost savings in outsourcing is strategically beneficial for both buyers and sellers of outsourcing services.

Limits of Outsourcing

Even though there are the benefits, the cons of outsourcing cannot be ignored either. Pfaffenberger (2000) concluded that the employers see advantages of hiring U.S. engineers with strong communication skills, an understanding of U.S. industry, superior business acumen, strong education or training, strong technical skills, proximity to work centers, lack of cultural issues, and a sense of creativity and desire to challenge the status quo. The key advantage of hiring Chinese entry-level engineers was cost savings, whereas a few respondents cited strong education or training and a willingness to work long hours. Similarly, cost savings were cited as a major advantage of hiring Indian entry-level engineers, whereas other advantages were technical knowledge, English language skills, strong education or training, ability to learn quickly, and a strong work ethic.

Evolution of ERP

There is another crucial aspect in the outsourcing arena – namely Enterprise Resource Planning. (ERP). This is a way to integrate the data and processes of an organization into one single system. Usually ERP systems will have many components including hardware and software, in order to achieve integration. Enterprise resource planning helps companies in many respects. In many cases it has been found that companies would experience a higher rate of success if ERP operations were vested to an external third party person. Hence the need of ERP outsourcing arose.

Analysts see big growth ahead for the ERP outsourcing market. Meta Group analyst Dean Davison expects the market to rise from about \$1 billion this year to between \$6 billion and \$8 billion within the next three to four years.

A few popular ERP vendors and installers are SAP, Oracle, Microsoft, and People Soft, which have helped several businesses in various industries, be it medical, automobile or IT of different sizes (small, medium, large), to gain revenue exponentially over the last five to ten years by letting them use their software (selling/renting).

ERP systems aren't easy to buy, install, deploy or maintain. In fact, some of the biggest horror stories in corporate IT have involved ERP systems. And since they're widely used in large corporations, they provide tools to become more competitive and more profitable by examining the various components of the business, such as human resources, operations management and primarily the accounting side of the business.

Outsourcing ERP

When an ERP is outsourced, an outsourcer charges a monthly fee to host an ERP application and deliver it as a service via a secure network link, which is 70% cheaper if done by the host company themselves. The biggest advantage of outsourcing ERP is that doing so gives you the ability to focus on the company's core mission rather than fiddling with ERP software.

Bryson and Sullivan (2002) discuss the effect of the current ERP models and how to overcome the drawbacks and create a more efficient and cost-savings model, which can in return provide huge turnovers. It is basically a plan, which has not yet been put to practice so the results are not 100% guaranteed as it involves huge costs. It seems promising though with the various statistics cited in the paper from the data of several corporations for the past 5 years. (160 – 276)

But many ERP customers remain skeptical. The key issue is matching up the company's software to the business and making sure the applications are optimized for the company, which they cannot be sure of if a third party miles away are let to handle it.

Conclusions:

In the above explanations I've introduced the principle of modern outsourcing and its effects, together with a brief description of advantages and disadvantages claimed by supporters and opponents of ERP outsourcing. Many of the problems could perhaps be solved by changes within the management and the work force, and procedures such as profit centers and organizational structures. However, companies continue to outsource at an increasing rate, despite reports of organizations disappointed and disillusioned by the process.

Outsourcing of jobs is nothing new, especially in the manufacturing sector. Here in Michigan we've witnessed live examples of the after-effects. But "old economy" jobs, we were told, would be replaced by new ones in the high tech and white-collar information service sector. What happened to the promise of the Information Age? It turned out that information technologies made it possible for companies to outsource those jobs, too.

Perhaps the ultimate goal is "smart sourcing" (Lacity and Hirschheim) where companies retain strategic applications while farming out only those services that vendors can provide more efficiently. There is already evidence that some companies are arriving at smart sourcing, after a few years of trial and error.

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Eastman Kodak Analysis

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Abstract

This report is a summary of an original strategic management analysis of Eastman Kodak (Porter, Manadjian, and Raymundo). The present summary includes analysis of the external environment using Porter's Five Forces Model and analysis of the internal environment using Value Chain Analysis. Ultimately, the goal is to make strategic recommendations to the company using the tools from the field of strategic management.

Background

Eastman Kodak is a Fortune 500 company whose mission states: “We plan to grow more rapidly than our competitors by providing customers with the solutions they need to capture, store, process, output, and communicate images—anywhere, anytime. We will derive our competitive advantage by delivering differentiated, cost-effective solutions—including consumables, hardware, software, systems and services—quickly and with flawless quality. All this is thanks to our diverse team of energetic, results-oriented employees with the world-class talent and skills necessary to sustain Kodak as the world leader in imaging” (“Careers at Kodak”).

Strategic Management Tools

The Porter’s Five Forces model focuses on forces that shape competition within an industry: (1) potential entrants (2) rivals (3) substitutes (4) buyers, and (5) suppliers. The Value Chain analyzes the functions of a company which have a role in lowering the cost structure and increasing the perceived value of the products through differentiation.

Discussion of Findings

Value Chain Analysis

Key company **strengths** have been identified through research of Value Chain subfactors. Some of the most significant are:

Ability of work environment to encourage creativity and innovation:

Kodak has an Office of Innovation to help foster brilliant ideas from in its R&D division (“Kodak Corporate”). The individuals assigned to the creative teams work hard as mediators that help inventors determine the pros and cons of their unorthodox ideas. As facilitators that help

advance the designers or the design teams ideas, The Office of Innovation also alleviates the design teams' bureaucratic process of trying to push ideas through the appropriate corporate channels ("Kodak Corporate"). These facilitators not only encourage and aid in R&D, but they also allow the inventors to focus on their goals instead of being distracted with corporate policy. (Strength)

Public image and corporate citizenship:

Kodak has been building its reputation as an environmentally conscious corporation. Kodak believes that it is fundamental to the success of the corporation to be an active participant in the global community. Argentina Kodak, for example, is in a recycling program that contributes to the needs of the environment ("Kodak Corporate"). (Strength)

Levels of employee motivation and job satisfaction:

As one of the company's goals is to ensure that their employees are satisfied with their job, Kodak has received relevant awards and recognition for their commitment to diversity and equality in their workforce. The company had also been listed in the "Best Places to work for GLBT Equality" by the Human Rights Campaign ever since the Equality Index began in 2002. (Strength)

Promptness of attention to customer complaints:

Paying attention to customer complaints is critical for customer satisfaction. Kodak does that by providing various ways to contact the company if customers need any help with their products. If customers have any questions they can access the Support Center at the Kodak website. There are also the Frequently Asked Questions, e-mail information, and assistance by phone. And if customers want help immediately, they can chat online with a Kodak specialist. (Strength)

Productivity of equipment compared to that of key competitors:

Productivity of equipment compared to that of key competitors has been a very important part of the competitive advantages that Kodak is striving towards. Currently Nikon, Samsung, and Sony are implementing very similar production styles and techniques to be equally competitive with Kodak. Kodak has the advantage of a healthy balance of having globalized production facilities compared to its toughest competitors ("Kodak Corporate"). Production internationally helps bring products to retail distributors with less shipping cost and more efficiency. The globalization approach a company helps focus production in parts of the world that help benefit the company the most. (Strength)

Level of information systems support in making strategic and routine decisions:

Kodak's information systems keep Kodak competitive in this economic environment. Kodak is making an effort to have a technological advantage over its competitors. Kodak has integrated its information system directly with Flextronics, its manufacturing partner, to assure timeliness in its production. Through this joint operation Kodak has been able to remain competitive in a tight market ("Flextronics"). (Strength)

Extent of brand loyalty among customers:

The J. D. Powers and Associates 2006 Digital Camera Satisfaction study awarded the top slot for Kodak in the \$200-\$399 segment, where the majority of cameras are purchased by consumers. Kodak got top ratings for four of the six factors that scores overall customer satisfaction, which

are cost, connectivity, ease of use, and picture quality. As brand loyalty becomes less important to consumers when they buy digital cameras, there is still some preference in Kodak's product due to the company's response to customer service, a great asset in a market of increased product parity ("Dphoto"). (Strength)

The Value Chain also identifies company **Weaknesses**. The analysis revealed that Kodak has much more internal strengths than weaknesses. The following are some of the few weaknesses:

Efficiency of plant layout and work flow design:

Efficiency and plant layout might be an aspect of concern for Kodak. Flextronics, Kodak's digital camera manufacturer is a vertically integrated company. Although they are extraordinarily efficient by timing production through computer automated systems to reduce cost, they accrue extraordinary cost because of their lack of concentration on each business segment. Because its manufacturing partner, Flextronics, utilizes a vertically integrated manufacturing format, costs from each business unit are passed on to the final product and to the consumer ("Flextronics"). Although it is a key strength to have control of an entire production line from resource extraction to final product shipping, there may be costs passed on to the consumer that can be avoided. (Weakness)

Development of criteria for lease-versus-purchase decisions:

Kodak has a Site Contracting Office that works on issues that relate contract workers on all of Kodak's Rochester sites. It also has a Worldwide Purchasing program that relates to its purchasing decisions. Overall, Kodak is reducing its manufacturing facilities due to the declining market. Thus, Kodak is not purchasing or leasing much in recent years. (Weakness)

Using Porter's Five Forces Model

Research of the Porter's Five Forces demonstrated industry **opportunities**. Some key opportunities of the digital camera industry are:

Slow growth in industry:

The growth of the digital camera industry is at its peak. According to Lyra Research, a leading digital imaging research group, shipments of digital cameras worldwide will exceed 130 million by 2010. Despite growing competition from improved camera phones and increased market saturation, this figure represents a compound annual growth rate of more than 10 percent. In 2006 alone, shipments of digital cameras worldwide grew by 21 percent to 98 million cameras ("Eastman"). (Opportunity for industry)

Supplier group is dominated by a few companies and is more concentrated than industry it sells to:

Kodak has a “diverse supplier base,” according to the company website. One supplier, PBMS, was named Supplier of the Year. PBMS was chosen from more than 500 companies that are Kodak suppliers. (Opportunity for Industry).

Capital requirements:

The capital requirements to enter the digital camera industry and the costs of factory development to supply chain creation cost several hundred millions of dollars. “The land for which Kodak uses for production and other facilities are valued at 127 million” (“Kodak Corporate”). As of 2006, Kodak has 219 million dollars worth of equipment, buildings, and land developments in progress (“Form 10-K”). These statistics regarding the companies land values merely reinforce the fact that entering this industry and trying to compete with the likes of Kodak, Konica, and Sony require millions of dollars in capital. Those companies that wish to compete in this industry must purchase research facilities, international distribution channels, and marketing and production facilities which cost several billion dollars. (Opportunity for Industry)

Products purchased from industry are standard or undifferentiated:

Products from the industry may not be unique enough to stand up against other similar products. In this case, digital cameras do have some differentiation that is offered by the companies. These differentiations may be slight, but digital cameras cannot be categorized as standard due to the different needs of the customers. Buyers purchase Kodak’s digital camera because of the innovative technology that the company is known for. These slight differences contribute to the switching costs that buyers must pay to for changing products. (Weak Opportunity for industry).

Porter’s Five Forces model also indicates industry **threats**. The digital camera industry seems to have a close number of opportunities and threats. Some vital threats are:

Substitutes produced by industries earning high profit:

The available substitutes are produced by industries yielding high profits. Companies that produce other cell phone cameras are producing profits in the hundreds of billions. Samsung, Motorola, and Eriksson are some the largest cell phone producers in the world. Samsung and Eriksson have been recording record growth in their cell phone production industry. The expected amount of growth in this industry should create larger than average profits, which should diminish lower expected profit for digital camera producers. (Threat for the Industry)

Numerous competitors or they are roughly equal in size and power:

There are numerous competitors and they roughly equal in size and power. Canon ranks 100 in the FT Global 500, Fuji Film ranks 434, and Sony ranks 154. (Threat for the industry)

Industry is not an important customer of supplier group:

The camera industry is only one of its suppliers’ many customers. For example, PBMS offers its services to numerous other companies (making it the world’s leading provider of mainstream solutions). (Threat to Industry)

Government policy:

Government regulation in consideration to the digital camera industry is non-existent (“Request”). Therefore, this is a threat to the industry. In the United States, there are certain sectors of the economy where government regulation is heavy, such as the banking and power production industries. In the digital camera industry there is no regulation, which can be a threat to this industry. If a potential entrant were to procure the required investment capital needed to begin production, there is no formal regulations that could stop it. The philosophy regarding this market is that greater competition would result in greater utility for the consumer by creating lower prices for a better product. This lack of regulation is definitely a threat for the industry. (Threat for the Industry)

Buyer group is concentrated or purchases in large volume:

In this industry, the number of buyers is large in both size and number; therefore they do dominate the supplying companies. Depending on the type of business the buyers are in, the purchase volumes for the industry’s digital camera can be either high or low. Retail stores like Target and Wal-Mart have numerous stores nationwide, and buy the industry’s product by store need. Online vendors like Amazon and eBay would require high volumes of digital cameras to sell to their customers. Thus, the industry’s buyers are concentrated and purchase various volumes of digital cameras. (Threat to Industry)

Recommendation

The cell phone industry, as of 2005, is measured at 2.5 billion subscribers. This statistic reflects an opportunity for considerable growth with over six billion people in the world. The cell phone industry is ever expanding into diversified product lines, such as PDAs, camera phones, and internet receivable devices all in one product. With the digital camera industry nearing its maturity stage, it is predicted that the next generation of growth for digital cameras will come in the form of camera phones.

Camera phones are a major substitute for and competitor to Kodak’s digital cameras. If Kodak is going to continue to be a vibrant, profitable corporation, it needs to enter the cell phone manufacturing industry, ideally through horizontal integration. This recommendation calls for Kodak to purchase BenQ Mobile.

The Taiwanese company, BenQ, is a “provider of networked digital lifestyle devices” (“BenQ Global”). Its mobile phone division, BenQ Mobile, filed for bankruptcy in 2006. It invested \$760 million into the unit after taking over the mobile phone business from Siemens (Nystedt). Siemens, a German company, paid BenQ \$300 million to take the division off its hands! It is likely that BenQ will accept an offer from Kodak, since it has been unable to gain market share in the mobile phone market and losing money on in this division.

Kodak will acquire BenQ Mobile and innovate the camera phone. Kodak will have to create a R&D division that focuses on mobile phone technology. With its resources, they can

develop products that traditional cell phones producers neither have the resources nor the expertise to implement.

This is strategic because it will change Kodak's focus from merely digital cameras to integrated digital camera devices. With the digital camera market maturing and innovation becoming less apparent, this emerging market will be a source of future capital gains. Reallocating R&D personnel and gathering resources is necessary to produce this product. In addition, a significant portion of Kodak's money will fund this project.

The foreseeable problems with this concept are (1) BenQ refuses to sell to Kodak and/or (2) Kodak is unable to gain significant market share. We believe that both of these possibilities are unlikely in light of our analysis.

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High School Graduation Rates in the Metro-Detroit Area: What Really Affects Public Secondary Education?

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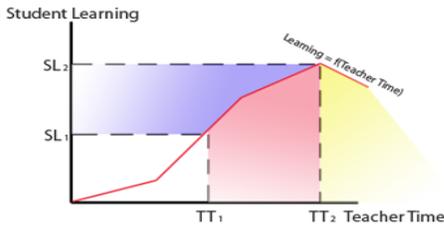
Education is a vital component to the health and growth of our economy and determines our technological skill level and future work force productivity. It is the concern of every parent and business owner, as the young adults in our current school system are the future of our economy. Education is in the forefront of news and politics, especially after the introduction of the No Child Left Behind Act (NCLB) of 2002. It is imperative to find what influences our youth's ability to graduate from high school. Understanding which variables affect high school graduation will enable us to create policies that encourage students to complete their basic education, preparing them for future training. Having an educated workforce is vital to Michigan's ability to diversify its economy and produce sustained economic growth.

Using data from over seventy high schools in forty districts, this paper explores the factors associated with high school graduation rates in the Metro Detroit area. Focusing on this area is vital to the well being of Michigan. Increasing the graduation rate of secondary education will offer solutions to maximize the potential for our human capital and minimize the costs of losing a working base, failing to meet the needs of a high technology economy. Specifically, this analysis estimates the Detroit area high school graduation rate as a function of the level of poverty in the district, city crime rate, student body demographics, student-teacher ratio, local taxes going toward schools, and the pass rate on the Michigan Educational Assessment Program (MEAP) tests in science and math.

Several economists have studied graduation rates. For example, Vartanian (1999) argues that neighborhood characteristics influence student performance and finds evidence that the poverty rate, the percent of female headed households, and the percent of professional and managerial occupations held by student's parents are statistically significant in predicting high school dropout rates. The literature also suggests that school characteristics can influence graduation rates, including teacher time with students, racial and gender make up of the student body, family structure, crime, poverty, school funding, and students' performance on standardized tests.

Following standard economic modeling, I expect factors that increase the benefits of graduation will positively impact graduation rates, while factors that increase the costs of graduation to do the opposite. Specifically, teachers are an important part of a student's education and their time and ability to focus their energy and concentration towards students is limited. Schools that have larger class sizes, or greater student per teacher ratios, provide students with less attention. This reduced attention may adversely impact students' grades as they perceive themselves to be less important and get less help. These poor grades reduce student achievement and motivation, decreasing the likelihood the student will graduate. Graph #1 illustrates the impact of a reduction in teacher time on student learning.

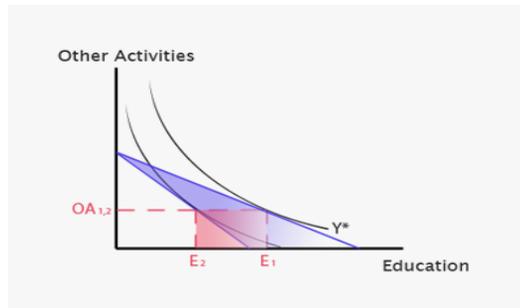
Graph #1: Teacher Time & Student Learning



An increase in a teacher’s time will increase the productivity of a student’s learning to a certain point. Beyond point TT_2 , students are overwhelmed with the advice of their teachers and spend more time consulting with teachers than studying or learning.

Race and ethnicity can play a significant role in high school graduation. Minorities face a greater risk of discrimination, poverty, and living in neighborhoods with more crime and violence. Discrimination can discourage students from working hard or studying. Living in a high crime or financially neglected neighborhood can add stressors and distractions to a student’s life and education. This implies that if a school’s student body has a lower percentage of minorities, fewer students would face such barriers, resulting in a higher graduation rate.

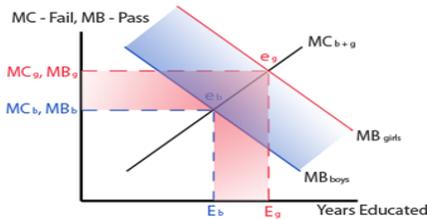
Graph #2: Cost of Education & Divorce



Divorce can play a crucial role in the development in a child’s life. If a student is trying to cope with stressful changes caused by divorce at their home and is unable to put their full attention towards school, their grades will fall. Furthermore, the cost of schooling may rise due to an increase in traveling time between families, coping with added stress, and increased family responsibilities. This theory can be

presented in a cost function of the number of years educated versus other family related activities. Graph #2 presents a budget line analysis of a representative high school student. An increase in the cost of attending school tilts the budget line inward, from BL_1 to BL_2 . The student’s new consumer optimum is at a lower quantity of education ($E_2 \leftarrow E_1$), holding all else constant. This results in a decline in graduation.

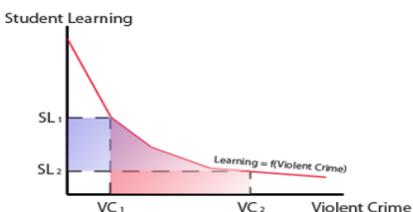
Graph #3: Cost, Benefit of Education & Gender



Women have had a long history of discrimination in the work place. Women, in general, are paid less than their male counterparts and have had to work and study above and beyond the average male worker just to be considered equal. Therefore, women students may strive to achieve higher grades and get accepted to better colleges, to compete against men. Thus, the marginal benefit of graduation may be higher for

women, increasing their likelihood of high school completion. Graph #3 illustrates this theory: a positive shift outward in the marginal benefit of education increase the number of years of education from E_b to E_g , assuming that educational costs are the same for both genders.

Graph #4: Violent Crime & Student Learning



Crime can significantly alter the way a student acts in school, their neighborhood, and at home. Fear of being bullied, shot, or getting assaulted on the way to or from school can have a profound negative impact on a student’s opinion of school. If a student experiences or

fears the possibility of being the victim of a violent crime, especially on or near school property, he/she will view school as a hostile environment and may stop attending school. Thus, we expect students living in higher crime areas will more likely drop out of high school, Graph #4.

Students living in poverty are more likely to value goods of necessity or immediate survival and be cost-averse to items perceived as ‘discretionary,’ such as school supplies, transportation to school, lunches, and related activities. A shortage of school supplies results in a decrease in productivity of the student, decreasing the likelihood of graduating from high school. Lack of food can impair a student’s ability to concentrate and their cognitive development. Students living in poverty are more likely to do poorly in school, decreasing the likelihood of graduating from high school.

Standardized tests offer an indication of a student’s overall ability to learn, comprehension of material, and are prerequisites for admission to higher levels of education. Poor performance on these tests can affect a student’s likelihood of being accepted to a good college and ability to obtain a job that pays more than minimum wage, is not physically intensive, or is considered a desirable profession. Students who wish to succeed in their academic and professional careers have a greater marginal benefit to excel in their standardized test scores than students that have given up hope of success. So, students will work harder to obtain higher MEAP test scores and therefore, increase their likelihood of graduating.

Revenues play an import role for any company or organization to function properly and to become successful. Without properly funded schools, a student’s ability to learn is impeded by derelict, hazardous facilities, inadequate school supplies, and the lack of extra-curricular activities. Schools with more revenue are more likely to provide the tools necessary for a student’s success and thus are expected to produce higher graduation rates.

The equation below represents this theory. If this model is correct, then Teachers, Caucasians, Females, Standardized Tests, and Revenues will positively impact the graduation rate, on average. Divorce, Violent Crime, and Poverty will negatively impact the graduation rate, on average.

$$\text{Grad} = \beta_1 + \beta_2\text{Teachers} + \beta_3\text{Caucasians} - \beta_4\text{Divorce} + \beta_5\text{Females} - \beta_6\text{VCrime} - \beta_7\text{Poverty} + \beta_8\text{Tests} + \beta_9\text{Revenues} + U_i$$

Next, I estimated the theoretical model using data from the Detroit Metro area. Sample schools were selected within a twenty mile radius from the 48230 zip code, including forty school districts and over seventy individual high schools. The high school graduation rate, the dependent variable, is determined by the Department of Education’s Center for Educational Performance and Information (CEPI) yearly report, Michigan Graduation / Dropout Rates. This rate represents the percent of students who graduated at the end of grade 12 in the spring of 2006, excluding students that dropped out of school or obtained a certificate of completion or a General Equivalency Diploma (GED). Based on the data collected, biases may occur due to the double counting of students held back in 9th grade that go into the graduation rate of schools four years later. However in light of NCLB, this bias has decreased as schools are more inclined to graduate students to the next grade in order to keep state and federal funding. The Troy School District had the highest high school graduation rate (99.15%) and Highland Park City Schools had the lowest (54.84%).

The independent variable “Teacher” refers to the number of students per teacher, which is the total number of students enrolled in public high school divided by the total number of teachers. The Ecorse Public School District had the lowest student-teacher ratio (16.7) while Westland Community Schools had the highest (24.7). “White” refers to the percentage of

students enrolled in public high school who are Caucasian. Wyandotte City School District had the highest Caucasian enrollment (95.17%) and Highland Park City Schools had the lowest (0.46%). “Female” refers to the percentage of students enrolled in high school who are female. Lakeview Public Schools had the highest enrollment (52.45%) and Hamtramck Public Schools had the lowest (42.75%). “Free Lunch Rate” refers to the percentage of students enrolled in high school that are eligible to receive free lunches at school for the school year 2005/6. This variable is a proxy for the district’s poverty level. Mt. Clemens Community School District had the highest free lunch rate (89.32%) and Troy School District had the lowest (2.45%).

“Local Rev” refers to the amount of revenue given to the district at the local level per student enrolled in that district for the school year 2005/6. This value is represented in nominal U.S. dollars and excludes revenues generated from the state and federal governments. Lamphere Public Schools had the highest amount of local revenue (\$9,820) and Highland Park City Schools had the lowest (\$989). “VCrime Rate” refers to the percentage of violent crimes reported to the FBI for the school district’s city for the year 2006. Violent crimes as defined by the FBI are murder, rape, and battery. Note that the FBI reports crime data on the city level only and some school districts are within the same city limits. Detroit City School District had the highest violent crime rate (2.42%) and Clawson City School District had the lowest (0.06%). “MEAP Math Sci” refers to the percentage of students enrolled in public school districts that have met or exceeded the MEAP standards for math and science subjects for the class of 2006. Math and Science efficiency demonstrates greater skill to succeed in high school and suggest a greater ability to graduate. Grosse Pointe Public Schools had the highest percent of students passing MEAP tests (77.75%) and Highland Park City Schools had the lowest (4.0%). Appendix A presents the sources and descriptive statistics for all the variables used in this study. The model’s Ordinary Least Squares regression is in Table 1.

If all of the necessary conditions hold, the OLS estimators are BLUE: Best, Linear, Unbiased, Estimator. Best indicates the estimator with the lowest variance and is considered most reliable. Linear indicates the estimator is linear in all the variables. Unbiased estimators produce the correct value on average. Multicollinearity, autocorrelation, and heteroscedasticity violate the assumptions needed for the OLS estimators to be BLUE.

The regression output shows no immediate signs of Classical Limit Regression Model (CLRM) assumption violations (Appendix B). The Variance Inflation Factors (VIF) are all under 10, indicating the regression doesn’t suffer from multicollinearity. Since the data collected are cross sectional data, autocorrelation is probably not an issue. However, heteroscedasticity can be a problem with this type of data. Heteroscedasticity causes biased estimates of the standard errors, making hypothesis testing invalid. To determine formally whether the residuals were homoscedastic, I conducted Park Tests for all independent variables. The null hypothesis (H_0) is that there is no heteroscedasticity and the alternative (H_1) indicates heteroscedasticity. As shown in Appendix B (Teacher Park Test), running a regression of the natural log of the residuals squared as the dependent variable and the natural log of Teacher as the independent variable, we can see that the slope for $\ln\text{Teacher}$ is -1.689. The hypothesis test to see if the slope of $\ln\text{Teacher}$ is statistically significant, meaning there is heteroscedasticity, is as follows:

$$H_0 : \beta_2 = 0 \quad H_1 : \beta_2 \neq 0 \quad t\text{-stat} = -0.529 \quad p\text{-value} = 0.60 > 0.10 > 0.05 > 0.01$$

Since the observed p-value is greater than 10%, we accept the null hypothesis that the slope for $\ln\text{Teacher}$ is not statistically significant. There is no evidence that the model suffers from heteroscedasticity. Repeating this process of all of the other independent variables also produces no evidence of heteroscedasticity.

Measurement error is a possibility within the model as the violent crime rates reflect only crimes reported to the FBI and not the actual number of crimes within the city. Crime statistics are usually underreported and, even though this is a concern, I believe there is no better alternative to collecting crime statistics than through the FBI.

Since there is no evidence of serious CLRM assumption violations with the regression, we can now start hypothesis tests to assess the model's "goodness of fit" and to determine whether the independent variables are associated with graduation rates as the model predicts. The regression explains 73.8% of the variance in the high school graduation rate. We conduct a hypothesis test to ensure statistical significance:

$$H_0 : \bar{R}^2 = 0 \quad H_1 : \bar{R}^2 > 0 \quad \text{F-stat} = 16.7 \quad \text{p-value} = 0.00 < 0.01 < 0.05 < 0.10$$

This regression is highly statistically significant at the 1% level and explains 73.8% of the variance in high school graduation rates. This regression works very well.

The estimate for "Teacher" means that for every additional student per teacher, there is a 0.003 percentage point increase in the high school graduation rate, on average, *ceteris paribus*. To test our theory, we conduct a hypothesis test for a statistically significant positive linear relationship between the two variables:

$$H_0 : \beta_2 \leq 0 \quad H_1 : \beta_2 > 0 \quad \text{t-stat} = 0.511 \quad \text{p-value} = 0.613/2 = 0.3065 > 0.10$$

We accept the null hypothesis, concluding that there is no evidence to of a positive association between the teacher-student ratio and the high school graduation rate at the 10% level.

The estimate for "White" means that for every one percentage point increase in percent of white students, there is a 0.067 percentage point decrease in the high school graduation rate, on average, *ceteris paribus*. In contrast to the theory, the percent of Caucasian students has a weak (10%) significant negative relation with the graduation rate:

$$H_0 : \beta_3 \geq 0 \quad H_1 : \beta_3 < 0 \quad \text{t-stat} = -1.374 \quad \text{p-value} = 0.179/2 = 0.0895 < 0.10, > 0.05$$

The slope for "Female" means that for every one percentage point increase in female students enrolled in high school, there is a 0.646 percentage point decrease in the high school graduation rate, on average, *ceteris paribus*. Hypothesis testing indicated that this negative relationship is statistically significant at the 10% level, contradicting the applied theory:

$$H_0 : \beta_4 \geq 0 \quad H_1 : \beta_4 < 0 \quad \text{t-stat} = -1.373 \quad \text{p-value} = 0.179/2 = 0.0895 < 0.10, > 0.05$$

The "Free Lunch Rate" slope means that for every one percentage point increase in students eligible for free lunch, there is a 0.395 percentage point decrease in the high school graduation rate, on average, *ceteris paribus*. To test our theory, we conduct a hypothesis test for a statistically significant negative linear relationship between the two variables:

$$H_0 : \beta_5 \geq 0 \quad H_1 : \beta_5 < 0 \quad \text{t-stat} = -4.843 \quad \text{p-value} = 0.00/2 = 0.00 < 0.01$$

We reject the null hypothesis, concluding that there is evidence of a strong negative association between the free lunch rate and the high school graduation rate at 1%. This supports the theory.

The estimate for "Local Rev" means that for every one dollar increase in local revenue per student, there is a 3.943E-6 percentage point decrease in the high school graduation rate, on average, *ceteris paribus*. The one-tailed test for this variable indicates that "Local Rev" is doesn't have a statistically significant impact on the average graduation rate:

$$H_0 : \beta_6 \geq 0 \quad H_1 : \beta_6 < 0 \quad \text{t-stat} = -0.648 \quad \text{p-value} = 0.521/2 = 0.2605 > 0.10$$

We accept the null hypothesis, concluding that there is no evidence of a negative association between the amount of local revenue per student and the high school graduation rate at 10%.

The slope of “VCrime Rate” means that for every one percentage point increase in the city’s violent crime rate, there is a 7.005 percentage point decrease in the high school graduation rate, on average, ceteris paribus. The appropriate hypothesis test is:

$$H_0 : \beta_7 \geq 0 \quad H_1 : \beta_7 < 0 \quad t\text{-stat} = -2.753 \quad p\text{-value} = 0.01/2 = 0.005 < 0.01$$

We reject the null hypothesis and conclude that there is evidence of a strong negative association between the violent crime rate of the city and the high school graduation rate at the 1% level. This result supports the theoretical model.

The estimate for “MEAP Math Sci” means that for every one percentage point increase in the percentage of students meeting or exceeding the MEAP standards for math and science, there is a 0.087 percentage point increase in the high school graduation rate, on average, ceteris paribus. To test our theory, we conduct a hypothesis test for a statistically significant positive linear relationship between the two variables:

$$H_0 : \beta_8 \leq 0 \quad H_1 : \beta_8 > 0 \quad t\text{-stat} = 0.943 \quad p\text{-value} = 0.353/2 = 0.1765 > 0.10$$

We accept the null hypothesis and conclude that there is no evidence of a positive association between the percent of students meeting or exceeding the MEAP standards for math and science and the high school graduation rate at the 10% level.

This paper developed a theoretical economic model explaining the differences in graduation rates in high schools across school districts in the Metropolitan Detroit area. This theory was then estimated using SPSS software and Ordinary Least Squares (OLS) regression. Even though this econometric model explains 73.8% of the variance in high school graduation rates, many of the independent variables (Teacher, Local Rev, and MEAP Math Sci) have no statistically significant effect on high school graduation rates. However, the percent of white students and the percent of female students have a statistically weak negative association with average graduation rates, but their signs contradict the model. The only variables in this model that are statistically significant and bear the predicted signs are VCrime Rate and Free Lunch Rate, which is a proxy for poverty in the surrounding area. School districts with more crime and poverty have lower average graduation rates. These results are consistent with the hypothesis that crime and poverty pose serious threats to children’s educational attainment.

The results suggest that policies targeting violence and poverty in high schools and in their surrounding neighborhoods may improve high school graduation rates. In addition, they indicate that allocating resources to certain variables, such as increasing the student-teacher ratio or increasing local school millages, may not improve graduation rates. Even though this model explains a significant portion of the variance in high school graduation rates, the model is limited due to its focus on a particular geographic region. The results may not hold in other areas. In addition, some factors, such as divorce rates, are recorded only at the county level, not by the city or school district. This not only excludes a theoretically relevant variable, but limits the econometric model from fully explaining the variance in high school graduation rates.

With the high school graduation rate in Detroit plummeting below 50% this year, it is imperative that politicians, communities and families completely understand the problems that are faced by our public high schools. Education is the key to future productivity, as the students of today will pave the way to our economy’s future. In order to stabilize and ensure a strong, productive future economy for Detroit and the rest of Michigan, we must educate our high school students by minimizing the effects of violent crime and poverty on our community.

Table I: The Model’s Ordinary Least Squares regression (OLS)

$$\hat{Y}_i = 1.30 + .003Teacher_i - .067White_i - .646Female_i - .395FreeLunch_i - 3.943E - 6Localrev_i - 7.005Vcrime_i + .087MEAPmathsci_i$$

se =	(0.322)	(0.006)	(0.049)	(0.471)	(0.082)	(0.000)	(2.54)	(0.093)
t =	(4.043)	(0.511)	(-1.374)	(-1.373)	(-4.843)	(-0.648)	(-2.753)	(0.943)
sig =	(0.00)	(0.613)	(0.179)	(0.179)	(0.000)	(0.521)	(0.010)	(0.353)

d.f. = 32 r² = 0.785 Adjusted r² = 0.738

Appendix A: Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Grad	40	.5484	.9915	.877603	.1130667
Teacher	40	16.7	24.7	20.298	1.8955
White	40	.0046	.9517	.664658	.2932748
Female	40	.4275	.5245	.489146	.0222691
Free_Lunch_Rate	40	.0245	.8932	.278839	.2111611
Local_Rev	40	989	9820	3621.65	1868.224
vcrime_rate	40	.0006	.0242	.005315	.0052443
MEAP_math_sci	40	.0400	.7775	.416725	.1614550

Graduation rates for public high schools came from Michigan’s Department of Education, Center for Educational Performance and Information. A yearly report called “Public Student Graduation/Dropout Data & Reports” found at www.michigan.gov/cepi/0,1607,7-113-21423_30451_30463---,00.html

Teacher ratio, White, Female and Free Lunch Rate rates for public high schools came from the National Center for Education Statistics, Common Core of Data, Public Schools found at nces.edu.gov/ccd/schoolsearch and Local Rev rates found at nces.edu.gov/ccd/districtsearch under Fiscal data.

VCrime Rate for cities came from the Federal Bureau of Investigation, Crime in the United States, Offenses Known to Law Enforcement Table 8 for Michigan in 2006 found at www.fbi.gov/ucr/cius2006/data/table_08_mi.html

MEAP Math Sci rates for public high schools came from Michigan’s Department of Education, Michigan Education Assessment Program found at www.michigan.gov/mde/0,1607,7-140-22709_31168_31530---,00.html

Appendix B: Park Tests
Teacher Park Test

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.085 ^a	.007	-.019	1.84856

a. Predictors: (Constant), lnTeacher

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.956	1	.956	.280	.600 ^a
	Residual	129.853	38	3.417		
	Total	130.809	39			

a. Predictors: (Constant), lnTeacher

b. Dependent Variable: lnResSq

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.973	9.604		-.205	.838
	lnTeacher	-1.689	3.193	-.085	-.529	.600

a. Dependent Variable: lnResSq

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Figurative Language Comprehension in College Students: Does it Change?

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Abstract

Aphorisms are a type of proverb emphasizing clever, often cynical, ways of looking at the world, e.g., “Little strokes fell great oaks.” Proverb interpretation is related to higher levels of education (Nippold, 1998). The present study examines the effects of age on aphorism interpretation. We hypothesized that aphorism interpretation would become more sophisticated with age. A total of 101 undergraduates completed our nine item aphorism instrument and a vocabulary test. Compared to participants 22 years old or more, those under 20 years old were more likely to rate the off-target interpretations as accurate, and were less accurate when aphorisms included concrete representations. Both age groups showed decreased interpretation ability for abstract aphorisms. We hope our data shed light on the developmental process of aphorism interpretation.

Introduction and Background Literature

Proverbs are short, witty statements that express positive life lessons (i.e. “a used key is always bright” (Temple & Honeck, 1999). Aphorisms are a type of proverb that include a cynical component (i.e. “you are a victim of the rules you live by”). The present study examined aphorism comprehension in college students, an area not addressed in the comprehension literature. Most figurative language comprehension research suggests that comprehension begins in preadolescence and continues into adulthood, with some evidence that performance may peak in the 20s (Nippold & Haq, 1996; Nippold, Uhden, & Schwarz, 1997; Nippold & Duthie, 2003). One explanation offered for the peak in comprehension is the language experience hypothesis that posits more experience with proverbs results in comprehension development (Nippold & Duthie, 2003; Nippold et al., 1997).

Another possible explanation for increased proverb comprehension is the meta-semantic hypothesis. This hypothesis states that figurative language comprehension is achieved through the careful analysis of words (Nippold & Duthie, 2003; Nippold & Haq, 1996; Nippold, Uhden, & Schwarz, 1997). Because this hypothesis emphasizes word analysis, it follows that concrete aphorisms are easier to interpret than abstract aphorisms. The definition of concrete and abstract have been explained and defined by the dual coding hypothesis, which addresses how information is represented mentally. The dual code refers to mental representations for both abstract and concrete information related to a word (Galotti, 2004; Paivio, 1983).

These hypotheses suggest that concrete proverbs or aphorisms should be easier to process and easier to remember than abstract proverbs or aphorisms. Taken together, these hypotheses

suggest that adults over 22 years of age will show increased comprehension of proverbs compared to adults 18-20 years old. In addition, we hypothesized that adults over 22 years of age will show more sophisticated comprehension of proverbs that are abstract.

Method

Participants

A total of 101 undergraduate psychology majors from Oakland University participated in the study: 48 Young 1 adults (18 to 20 years of age) and 53 Young 2 adults (22 – 40 years of age). The sample was recruited through Oakland University's Psychology department's subject-pool. Participants received course credit in Introductory Psychology courses for participating with options provided for students not choosing to participate.

Procedure and Measures

After the research assistants explained the procedure and answered questions participants were asked to read and sign the informed consent form. Participants were then asked to fill out a questionnaire that included an aphorism interpretation task (consisting of nine aphorisms), a demographic section and a vocabulary test. The aphorism questionnaire consisted of nine aphorisms such as "It is impossible to carry the torch of truth through a crowd without singeing someone's beard", and "Better to light a candle than to curse in the darkness". The aphorism interpretation task asked participants to rate response options that differ in accuracy and specificity (specific, generalized, common saying, off-target), and to respond to questions about difficulty, valence, and personal-relevance.

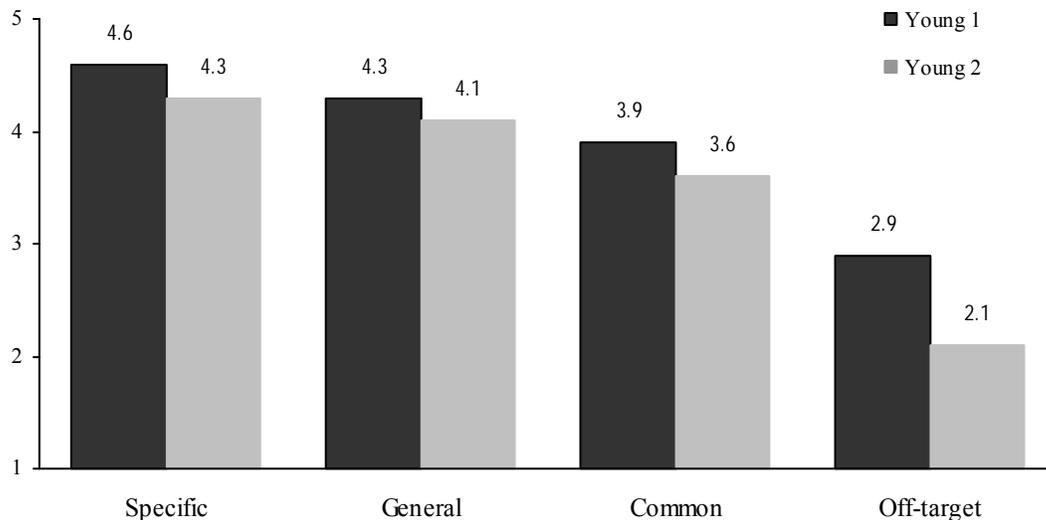
Results and Discussion

Aphorism Interpretation Mean by Age Group

A 2 (Y1: young 1, Y2: young 2) by 4 (specific, generalized, off-target, common saying) Repeated Measures ANOVA assessed the effects of age on aphorism interpretation scores. A significant interaction for age group and interpretation type was observed: $F(3,297) = 3.69, p = .028, \eta^2 = .036$. This interaction reflects the difference between Y1 and Y2 for off-target interpretations: $M_{Y1} = 2.90, SD_{Y1} = 1.10; M_{Y2} = 2.13, SD_{Y2} = 0.97$). Tukey's post-hoc procedures were used to compare these means while controlling experiment-wise alpha. As expected, post-hoc results reveal that the off-target difference was significant $t(99) = 3.74, p = .001, Y1 > Y2$.

These results are depicted in Figure 1.

Figure 1: Aphorism Interpretation Scores by Age Group

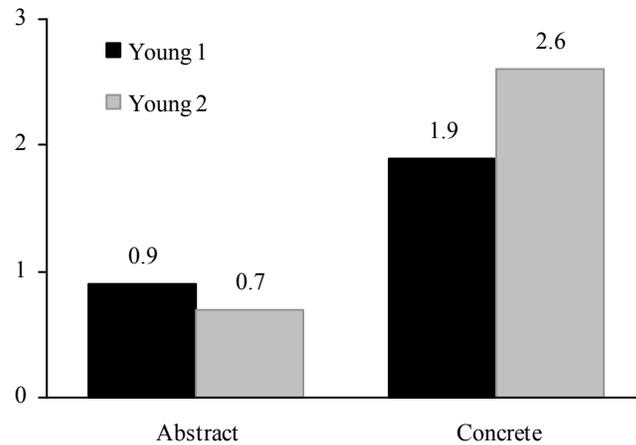


The age differences observed in this analysis are consistent with the Language Experience Hypothesis: older participants (22 years of age and older) rated off-target interpretations lower than younger participants (18-20). This outcome reveals that older participants become more skilled at identifying less accurate interpretations. However, analysis of definition scores reveals that the younger undergraduates were more likely to rate all options (specific, generalized, common saying, and off-target) higher than the older undergraduates. This finding suggests that being able to discriminate well among definitions that vary in terms of accuracy and specificity may improve with age, with older undergraduates showing greater discrimination across all interpretation categories compared to the younger undergraduates.

Abstract and Concrete Means by Age Group

A 2 (Y1, Y2) by 2 (abstract, concrete) Repeated Measures ANOVA was used to evaluate abstract vs. concrete comprehension by age group. Our analyses revealed a significant main effect: $F(1, 99) = 91.47, p < .001, n^2 = .480$; and a significant age group by concreteness interaction: $F(1, 99) = 5.73, p < .019, n^2 = .055$. Age group differences for abstract comprehension were not significant. Our data also yielded a significant effect of age group on concrete comprehension: $t(99) = 2.26, p = .026$, with young 2 greater than young 1. These results have educational implications because it is assumed that individuals in their early 20's have already developed abstract reasoning yet our data contradicts such implications. Please refer to Figure 2.

Figure 2: Abstract and Concreteness Scores by Age Group



Even though we expected the older participants to perform better on aphorisms with abstract concepts compared to the younger participants, we did not obtain this outcome. The older participants did, however, perform better than the younger participants on concrete aphorisms, suggesting that concrete aphorism interpretation skills may continue to improve in this age group. These results also suggest that the development of abstract proverb interpretation may be less common in undergraduates.

The Meta-Semantic and Dual-Coding Hypotheses

Our data are also consistent with the meta-semantic hypothesis and dual coding hypothesis in the processing advantage for concrete information over abstract. Research participants showed better discrimination for concrete aphorisms than abstract aphorisms, reflecting sensitivity to the meanings for concrete aphorisms compared to abstract ones. However, as stated previously, the concrete advantage was greatest for the students aged 21 and older. Improvement in concrete aphorism interpretations amongst older undergraduates suggests a developing stage of figurative language comprehension in this age group that may be associated with increased figurative language skills. Hence, dual coding processes, as these pertain to figurative language, may still be developing in students who are in their twenties.

Formal Operations – Piaget’s Stage Theory of Cognitive Development

According to Piaget's Theory of Cognitive development, pre-adolescents are developing the ability to reason abstractly in the Formal Operations stage, the last stage of cognitive development (Sigelman & Rider, 2006). Piaget hypothesized that through experience and time, pre-adolescents develop these tools of abstract reasoning and use them in adolescence and adulthood. Commons, Richards, and Kuhn (1982) examined Piagetian abstract reasoning processes in undergraduate and graduate students. Their research suggests that most

undergraduates are not as skilled as Piaget proposed. Commons et al. (1982) also found that graduate students were more likely to have abstract reasoning abilities compared to undergraduates, highlighting the possibility that there is continued cognitive development in young adults. According to our data, abstract reasoning abilities may be developing in the third or fourth undergraduate year or when adults are in their early 20s. As such, our data are consistent with the findings reported by Commons et al. (1982).

Conclusions

Our data are preliminary because there have only been a handful of studies addressing the development of figurative language processes in young adulthood. Thus far our data suggest that the most sophisticated of these processes, e.g., interpreting abstract proverbs or aphorisms, may develop in the mid-twenties on average. Further studies of figurative language comprehension in this age group are needed in order to identify more specifically the characteristics of abstract processing and comprehension abilities and the development of these abilities in undergraduates.

Author Note

All student authors contributed equally to this project and to this manuscript. Contributions included weekly research meetings, collecting pilot data (two pilot studies), entering data, coding data for entry, library research, poster preparation, presentation at Meeting of Minds 2008, and manuscript preparation. Dr. Deb McGinnis was the faculty mentor for this project. For additional information, please contact Dr. McGinnis at mcginnis@oakland.edu.

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The Evolution of Woman's Role in Medieval French Literature

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During the Middle Ages religion occupied a crucial place in European society. Thus, the ultimate hope of believers was to be confirmed as a good Christian by faithfully following in Jesus Christ's steps. This implies renouncing temptations in order to preserve body and soul. According to this male-centered Christian view, women, as the daughters of Eve, represented a temptation to men's lust. Consequently, the Christian religion has legitimated men's exclusion and marginalization of women. As a result, men dominated women almost exclusively in medieval society. However, as we shall see, some literary works from the medieval period did more justice to women by representing them on a more equal footing with men. Such representation was an inclination towards a more positive, evolving way of perceiving women. I base my research on the following books which demonstrate how women's roles varied and evolved through time: *La Vie de Saint Alexis*, where marriage must be rejected because women are seen as obstacles to spiritual perfection, Bérout's version of the legend of Tristan and Yseut, which portrays women as crafty, intelligent and more in control than men, Chrétien de Troyes' romance *Erec et Enide*, a work where women and men are seen as equals in marriage, *La Quête du Saint Graal*, where women become spiritual guides, *Le Miracle de Théophile*, a drama extolling the redemptive power of the Virgin Mary, and finally, Christine de Pizan's *Chemin de longue étude*. In the latter work Christine takes the role of women to a higher level by affirming women's right to play intellectual roles in medieval society, such as advisor to King Charles VI. Throughout these works, each one representing a different genre, the Saint's Life, verse and prose romance, a drama and mirror for princes, we see how women improved their status over time.

First, in chronological order, let's take the example of Saint Alexis, an only child raised by aged parents who hope to see their son married with a family of his own. Their hopes are ruined when Alexis decides to leave his bride on his wedding night in order to preserve his virginity as a means of consecrating himself to God. Before leaving, Alexis encourages his bride to do the same, preserving her body and soul by spending the rest of her life celibate as a bride of Christ. Of course by doing so, Alexis does not leave his wife any choice but an enforced widowhood. Such a book is a clear example of victimizing woman by imposing choices on her that might not be hers if she were free to decide for herself.

Medieval literature also sheds light on *fin'amors* or courtly love where the knight-hero must gain his dame's favors by exhibiting ideal qualities through fidelity and chivalry. That ideal, however, indicates a sense of superiority enjoyed by the woman who sees herself as a source of inspiration to her knight. However, such love can lead to disastrous consequences as in Bérout's version of the legend of Tristan and Yseut. The story tells of a love-triangle composed of King Marc, his wife Yseut, and his nephew Tristan. It is a forbidden love where the woman plays the role of manipulator. The two lovers, Tristan and Yseut, decide to abandon the civilized life represented by the royal court and knighthood and live isolated in the forest in order to be able to

enjoy their passion. The role of woman in this work conforms to the one generally perceived in medieval society, negative and unproductive. Similar to *La Vie de Saint Alexis* this work is influenced by the Christian religion. It forbids sexual relations outside of marriage, so consequently, Tristan and Yseut is about fidelity, too, another important Christian value. In other words, Yseut is portrayed as a bad Christian who commits adultery. True, she is not in love with her husband, King Marc, but marriage was not supposed to be about love. Marriage is an institution for reproduction and not passionate love.

Chrétien de Troyes took a more realistic and just approach towards love in general and woman in particular in his book *Erec et Enide*. Chrétien believes that love can exist within marriage and that a woman can be wife, lover, and friend all in one. The book's main character Enide represents the ideal woman: she is educated, beautiful, noble, and wise. Most importantly, she is capable of having a harmonious marriage with her husband Erec. *Erec et Enide* can be thought of to a certain extent as an anti-Tristan. Another important aspect to be noticed in Chrétien's book is the equality between man and woman, an issue still very modern despite the fact that the romance was written in 1170. However, this equality is fragile and disappears when Enide expresses disapproval towards Erec's excessive lack of activity after marriage in what he excels in the most, knighthood. Such an act provokes Erec's anger and he decides to punish Enide by forbidding her to speak. She is no longer allowed to express herself. Furthermore, he decides to take her with him in his knighthood quests, something usually reserved for men. He does this for one purpose, which is to prove to her his chivalry and have her undergo a series of tests in order to redeem herself. One point worthy of being mentioned, though, regarding such a decision is that although Erec at this stage is portrayed as the absolute master of the situation, Enide, to her credit, is still considered the initiator in getting him back to his main occupation. About this matter, Robert Anacker wrote:

The question whether a man can fully give himself to a woman and to his vocation at the same time, is most certainly one of the main sources of conflicts between the sexes. On the other hand, no woman can stand it if a man neglects all the other things for her sake, if he cares for nothing but her and is completely and definitely contented with his domestic happiness, in that case she will get impatient, will try to stimulate, will push him to active life. (295)

If one continues to contemplate medieval literary works where women played important roles, one would see that the book *La Quête du Saint Graal* delivers a perfect example where woman is not only portrayed as a symbol of love and desire, but also as an image of wisdom, represented by Perceval's aunt, the recluse. In this romance, the hero Perceval, who passes through moments of despair and doubts, is saved by a wise woman who advises and guides him. She explains things to him the way they are and not the way he perceives them. In relation to this subject, Meriel Wisotsky wrote: "These female characters adopt unconventional roles as teachers and advisors who help turn mere warriors into the mightiest Knights of the Round Table" (57).

The ultimate image of pure womanhood is represented by the Virgin Mary who is considered by Christians to be the ideal mother, friend, and sister. But above all, she is perceived to be a mediator between humanity and Christ. With her great qualities, her valiance, she can save humanity by pleading in its favor before the Lord. Such an image is reflected in *Le Miracle de Théophile* where Théophile commits a sacrilege out of despair by signing a pact with the devil. Théophile, however, realizes that such a pact only worsened his situation and that his only

hope lies with the Virgin Mary for all the goodness she represents. Of course, she does save his soul and thus helps him redeem himself and become a good Christian and servant of God.

Around the end of the Middle Ages, a feminine figure advanced herself and marked the literary milieu in France: Christine de Pizan. She was born to a cultured family and was encouraged to undertake intellectual pursuits by her father, who was an astrologer to Charles V. Christine followed in her father's footsteps by educating herself and became a writer out of necessity in the beginning. However, her beloved husband passed away suddenly, and she found herself a widow with children to support and no financial resources. Her talent for writing soon enabled her to be perhaps the first female author to earn a living through writing and to enjoy a distinguished place in the literary field. In her book, *Le Chemin de longue étude*, Christine interprets her philosophical reflections through various personifications of human qualities in order to deliver advice to King Charles VI. Hence, she delivers a great philosophical debate through the mouths of Lady Wisdom, Lady Knighthood, Lady Wealth, and Lady Nobility under the command of Lady Reason. These ladies debate using passionate arguments concerning which qualifications the best quality prince should have. This book is a perfect example of the impressive level of education Christine de Pizan had as a female philosopher. About Christine de Pizan, Eric Hicks writes:

Christine is the first woman writer to have lived demonstrably from her trade. Being a female was conducive to a rare kind of authenticity, for there was no authorial type to which Christine could readily conform, no place for a "jeune femme savante" in the clerical order of things. (57)

Christine wonderfully portrayed her role as a porte-parole of women in her society. As Xiang Yun Zhang wrote: "Elle a vraiment préparé le chemin pour emmener les femmes à la gloire. (She really paved the way leading women to glory; translation mine)" (82).

In conclusion, what I have covered in this paper represents some examples of what women had experienced, been subjected to or enjoyed in terms of the roles they played within their society as depicted in medieval literature. It is certain that women did not always choose their destiny and their paths through life; nevertheless, they always strived to advance themselves as best they could, given the social limitations to which they were subjected. Those literary works I covered were either a reflection of how woman was perceived within medieval society or how she tried to impose her just and proper image as Christine de Pizan did. It is ironic to see that such a fight is still current and women keep being the subject of so many controversial studies that try either to confirm the prejudices society has about women or try to change them centuries afterwards.

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**“If they’re going to survive here, they have to know how to work”:
John Sayles’ Interpretation of Hispanic Women’s Stereotypes in
*Lone Star***

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Hispanic women have often been portrayed in a negative light in American films. Their characteristics have been shown as the antitheses to the Caucasian heroines. In Director Fred Zinnemann’s 1955 film *High Noon*, Helen Ramirez, played by Katy Jurado, is portrayed as a sexual object who runs a brothel and is a silent partner controlling another business. She is a prostitute and mercenary who uses men, including the hero, and outdoes them as a shrewd and hardened businesswoman before discarding them casually.

In his 1998 film *Lone Star*, director John Sayles questions the common stereotypes of Hispanic women as traditionally portrayed in American cinema. The Mexican immigrant and businesswoman Mercedes Cruz at first appears to fit into the pattern of Hispanic woman stereotypes. However, Sayles shows these stereotypes in unexpected ways. Forming an imposing figure in the background of the film, Mercedes is not only important to the plot but her story also adds depth and perspective to the conflict in the film. Mercedes is a positive character because although she at first appears angry and resentful, she chooses to be a heroine by helping Enrique and his friends. Her decisions and motivations, slowly revealed, are unexpected at every turn.

Hispanic Business Women

Sayles fits Mercedes to the stereotype of a Hispanic business woman as a demanding employer who routinely mistreats her employees. In Mercedes’ first major appearance, a young man holds a finger to his ear as he speaks rapidly on a telephone in Spanish. He glances back and forth furtively as though suspicious of the pay phone in the cluttered storage area next to the kitchen in the small restaurant. We break in on his conversation as he says, “Sabado por la noche--Is, es el mas seguro--a cruzar por la manana y pues tendremos que esperar—[Saturday night...yes, that's the safest...I'll cross in the morning and then we'll have to wait--]” (*Lone Star*).

Señora Mercedes Cruz, played by actress Miriam Colon, bustles out of the dining area and stalks by with a white-smocked waitress meekly in tow. “Get off the phone, Enrique, we’ve got a big wedding,” (*Lone Star*) she demands. She is not shy and appears self-important as she issues her order. She brushes by her daughter on her way to chastise an employee. “Donde estan sus guantes? Tonta! Quiere matar a mis clientes? [Where are your gloves? Stupid! You want to kill my customers?]” (*Lone Star*) she snaps at the unfortunate girl. “These ones coming up are getting stupider every year,” (*Lone Star* screenplay) she laments. She has an obvious disdain for her employees and treats them poorly.

In the last part of the film, Enrique, the employee whose telephone conversation she interrupted, needs help. His girlfriend Anselma is injured when they cross the Rio Grande illegally and she is unable to walk further. Enrique decides to take her to Mercedes’ river-side

home. “How could you bring them here?” (*Lone Star* screenplay) is Mercedes’ initial response as they come out of the darkness into the pool of light on her patio. She picks up her cordless telephone, preparing to dial... “I’ll call the border patrol. They’ll get her to the hospital,” (*Lone Star* screenplay) she offers against their protests. In the end, she does not report them and obtains medical assistance for Anselma. It is worthwhile to note that Enrique, the employee she appeared to mistreat, knew he could trust her. He took a chance, but his final line is: “Seas tranquila, miya. Estamos en las manos de Senora Cruz. [Just relax, honey. We’re in the hands of Senora Cruz.]” (*Lone Star* screenplay).

Legality of Business Practices

Mercedes’ business is completely legal and Sayles stresses that she is one of the most important businesswomen in her town. “Nobody is illegal in my cafe!” (*Lone Star*) Mercedes insists indignantly as she whirls around to argue. “They’ve got green cards, they’ve got relatives who were born here-if they only had a little common sense I’d be very happy,” (*Lone Star*) Mercedes snaps as her daughter Pilar. Mercedes is very quick to defend the legitimacy of her employees. She is one of the foremost businesswomen in Frontera and has a considerable reputation to uphold. “Maybe if you took a little more time training them...” (*Lone Star*) Pilar begins, but Mercedes turns around again and cuts her off. “Did you come here to teach me how to run my business?” (*Lone Star*) she asks rhetorically, signaling an end to the argument. In one of the opening scenes of the film, the main characters sitting in her restaurant, the Santa Barbara Café, are discussing the renaming of the courthouse. “Hell, it was Mercedes over there who swung the deciding vote for him,” (*Lone Star* screenplay) says Hollis Pogue, the mayor of Frontera. When the memorial at the re-named courthouse is unveiled, it is Mercedes who cuts the ribbon and has her picture taken after being introduced as one of the town’s most outstanding businesswomen. Throughout the movie, Sayles reinforces that Mercedes’ business is completely legitimate and that she is a respected member of the community. Later in the film, Sayles reveals that the café’s seed money was ten-thousand dollars taken from the sheriff after he was killed. Mercedes is not looked down upon for taking the money by this point. “Widow’s benefits” (*Lone Star*) are the words used to describe the money taken from the sheriff who had murdered her husband. The new sheriff needed to launder the extortion money and the widowed Mercedes needed money desperately, so it is difficult to condemn them for their decision.

Hispanic Experiences and Culture

In addition to being harsh toward the employees of the Santa Barbara Café, Sayles also portrays Mercedes as cold toward her daughter, Pilar. As Mercedes storms into the kitchen of her café, Pilar tries to get her mother’s attention, but is completely ignored as Mercedes brushes by. She is irritated by her employees and criticizes every one she passes. Pilar tries to calm her down and reason with her, but she has none of it. “If they’re going to survive here, they have to know how to work,” (*Lone Star*) she retorts vehemently, turning to face her daughter momentarily. Pilar rolls her eyes, trying to find patience to hear what she has obviously heard many times before. “Well, you hire illegals, what do you expect?” (*Lone Star*) Pilar asks, irritating her mother and causing her to forget her disdain for her employees to defend their legality. Throughout the film, the tension between the mother and daughter build towards the film’s finale. There is an increased mystery and anticipation culminating at the end of the story.

When Sayles fully explains Mercedes’ story toward the end of the film, her bitterness and cynicism become understandable and it becomes easy to identify with her character. “Why

would I want to go there?”(*Lone Star*) Asks Mercedes bluntly when her daughter suggests a trip to Mexico. “You want to see Mexicans? Open your eyes and look around you. We’re up to our ears in them.”(*Lone Star*) Pilar, realizing the trip is a lost cause, decides to try to understand why her mother is set against it. “Mommy, how old were you when my father died?”(*Lone Star*) she inquires. “He was killed,” (*Lone Star*) Mercedes states flatly. “A little older than Paloma is now,” (*Lone Star*) she continues, referring to her teenage granddaughter. Toward the end of the film, when she decides to rescue Enrique and Anselma, Mercedes has a flashback of her own “immigration” experience. She was lost in the river, all alone. She could not see her friend. Suddenly, a voice calls out to her from a distance, inviting her to follow it. A man holding a lantern appears on the bank and extends his hand to her. This is a powerful symbol of not only a physical but emotional rescue. We know that Mercedes married the man, Eladio Cruz, and that he was later murdered in cold blood by the sheriff for smuggling friends across the border. Suddenly, it is difficult to see Mercedes simply as a businesswoman. How must it have felt, to lose her true love, to be alone in a new country? How did this cause her to change her view of immigration and Mexican nationals in the United States? In an interview with Dennis West, Sayles explains Mercedes feelings. She “is very closed...because in the culture in which she lives, there’s a certain amount of shame in being a *mojado*, a *wetback*.” (West) “...Very often when people cross those borders they want to slam the door behind them. They may have been banging against that door themselves, but because they have internalized the system and given it value, their attitude changes once they get on the other side of the border.” (West).

Summary

Through the entire film, Mercedes contradicts common stereotypes. Mercedes’ business is completely legal and she is considered a respected businesswoman in her community. She appears harsh and callous toward her employees but it is only because of the hardship she has suffered. Contrary to the belief that Hispanic people cling to their language and refuse to use English more than necessary, Mercedes rarely speaks Spanish and constantly admonishes her employees to use English. Sayles uses her character to break common misconceptions of Hispanic women and show that you cannot judge people based on superficial impressions and he shows that stereotypes are never able to define anyone.

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Creative Rebels: Liberating Women in Latin American Short Stories

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Often times, feminine literature serves as a metaphoric representation of life; inside a world that is dominated by men, women find themselves with few options. Especially in traditional societies, they may feel trapped within their feminine roles, politically and economically limited, or confined to their homes. Furthermore, some suffer physical, sexual, or emotional abuse at the hands of the men in their lives, including their husbands or lovers. Nevertheless, while many women follow the traditional path of conformity and passivity, others attempt to liberate themselves from the oppression imposed upon them by the patriarchal society.

This essay explores woman's position in the highly patriarchal Latin American society, through four short stories written by twentieth-century women writers from Mexico, Argentina, Chile and Puerto Rico. Whereas their common thematic thread proves to be the sense of entrapment in a highly misogynistic society—which invariably relegates women to the inferior, voiceless position—the resolution of this predicament is presented through distinct narrative strategies. While some female protagonists find their escape through insanity and death, others choose sisterhood solidarity (sometimes even with their female rivals), in order to build new alliances that would ultimately strengthen their economic position and make them independent of men. Forging their new space within the already solidified male territory often takes them into the realm of the fantastic, where, through the technique of simultaneous worlds or fairy-tale environment, the stories open up new possibilities for women's self-expression.

The short story "It's the Fault of the Tlaxcaltecas", written by Elena Garro of Mexico, explores the dominant cultural gender patterns of Latin America by using elements of the fantastic to juxtapose the present against Mexico's pre-Columbian past. The protagonist, Laura, literally lives in two different worlds: one in the present, where she resides with Pablo, her current-day Mexican husband, and the other in the past, where, through the means of time-travel, she repeatedly reunites with her indigenous cousin, who is also her husband. There is a sharp contrast in the way Laura is treated by each of these partners: while Pablo mistreats, abuses and threatens her, the indigenous husband of the past loves and protects her. After traveling between the two dimensions, Laura finally decides to escape from Pablo's control, and to remain in the past with the man who truly loves her. Symbolically, this act represents the Mexican woman's return to her people's indigenous roots, and the evasion from the modern-day machismo coming from the Spanish influence (in this case, portrayed by Pablo). In deciding to flee from the present, Laura chooses not only to follow her own path, but to reject the constraints imposed upon her by her oppressive modern-day husband and the patriarchy he represents. In addition to the relationships she has with these two men, throughout the story, we also see the interactions of Laura and her indigenous maid, Nacha, in whom she confides. In the end, Laura's decision to liberate herself from her abusive husband results in Nacha's desire to search for *her* own destiny, as she resigns from her job, now that Laura is no longer there. In this way, the courage of one

woman serves as an inspiration for another. This story explores the inferior position not only of women, but of the indigenous people who, too, have suffered oppression in Latin America.

In keeping with the fantastic genre, "The Punishment", written by Silvina Ocampo of Argentina, also plays with the concept of time, and utilizes the elements of dual realities and fragmented identities. In this case, the protagonist finds herself dominated, objectified and tormented by her lover of three years, Sergio. In referring to his controlling ways and his jealousy, she says of him, "...he devoured me like a tiger devours a lamb" (Ocampo, 277) One day, feeling smothered and emotionally exhausted after having been accused of infidelity and taunted by him, she becomes decidedly introspective, reliving a backwards version of her life story. There is a sudden rupture in the natural laws of life, as time mystically becomes inverted and the protagonist regresses back to the early days of her relationship with Sergio, to her childhood, her infancy, and ultimately to her death. While this surreal metamorphosis is occurring, she begins to see herself from an outside perspective, and to refer to Sergio in the third person. Convinced that she is only trying to distract him from his accusations, he refuses to validate her feelings. However, freed now from the fear she once had of him, she continues to transform, ignoring his condescending comments, and resolutely recounting, in reverse, all the significant moments of her life, even up to the moment before that life began. Just before dying, she comments, "Remembering the past is killing me" (Ocampo, 281) Through the painful but powerful act of introspection and self-examination, she seeks to reclaim her identity that had been lost in her stifling relationship with Sergio. In dying, the protagonist has taken from her lover his ability to subjugate and control her. The liberation of the woman in this story occurs not only through a change in her perspective and the act of searching for her lost self through the recollection and reinterpretation of her past, but through the decision she makes to arrive at her own death.

While some women find innovative ways to escape the oppression of living in a patriarchal society, others choose to unite with other women, forming a system of mutual support among themselves. Because the feminist struggle is based on issues that ultimately affect all women, there is an understanding of the importance of acting of one accord and of recognizing the interdependence that exists among women. This concept of feminine solidarity as a vehicle for social change is seen in the short stories "The Gold of Tomás Vargas" and "Pico Rico Mandorico".

"The Gold of Tomás Vargas", written by Isabel Allende of Chile, deals with a proverbial, small-town macho, who satisfies his own pleasures at the expense of his family. He abuses his wife and ignores his children, refusing to support them or provide for them, while hiding his gold away from their eyes. He goes out frequently in search of other women to conquer; as a womanizer, for him, they are nothing more than objects of pleasure. The body of his own wife, Antonia, is worn down from numerous pregnancies and years of hard work. Furthermore, she has to suffer the humiliation of having her husband's pregnant concubine half her age, Concha, living in her own house. Although at the beginning of the story, there are justified feelings of rivalry and conflict between these two women, with time, an atmosphere of mutual compassion and solidarity begins to develop as they realize that the real culprit is the violent and inconsiderate Tomás. To advance their cause and take revenge on the wicked lover, they trick him when they discover that he needs to dig up his precious gold in order to pay a gambling debt, something considered of the direst nature in their village. Exemplifying and perhaps exaggerating the absurdity of the priorities that exist within the traditional patriarchal mentality is the sacredness placed on the exclusively masculine act of gambling, in comparison with the

insignificance assigned to the abusive treatment of women in this story. In short, Antonia and Concha discreetly remove the gold from the ground, knowing that Tomas' insolvency will put him in serious trouble with his creditor. In this sense, the two women unite in empowering themselves and each other, while overcoming the demeaning force exerted by Tomás, who, in turn, becomes completely powerless.

Another example of sisterhood solidarity is found in the fairy-tale based story, *Pico Rico Mandorico*, by Rosario Ferré of Puerto Rico. Here, the use of the twin sisters Elisa and Alicia serves as a representation of the need for interdependence among women within society. In this story, as long as the two sisters continue to follow the advice of their mother, who had told them to always act in accordance with one another, they are spared the horrible fate of insomnia that has plagued the rest of their village. However, when, despite the warnings of her sister, Elisa falls under the temptation of a strange foreign landowner who offers her exotic fruits to eat, she, too, becomes tormented by the inability to sleep. Like the other villagers, whose unbearable insomnia converts them into the zombies who do nothing other than work endlessly for the stranger, she too resigns herself to working day and night, scouring and scrubbing until her fingers bleed. Seeing that her sister is becoming weaker and closer to death every day from the foreigner's spell, Alicia makes plans to rectify the situation. Following a hunch that a second dose of the enchanted fruit would act as an antidote to the spell, she sets out to find the stranger with the fruit basket. Upon discovering him asleep, Alicia sneaks up on him, and a violent struggle ensues, as he attempts to force her to eat the fruit. Defending herself, Alicia cuts off the stranger's nose, and runs home to find her sister lying on her deathbed. Fortunately, as Alicia leans over to kiss her, some of the fruit juice that had been spilled on her during the struggle, reaches the lips of Elisa, curing her of the curse of insomnia. The twins promise each other that, from that day forward, they will always act in accordance with one another. Furthermore, this alliance has inspired others: the entire village realizes that they, too, had been tricked, and they henceforth refuse to work day and night for the stranger, ultimately regaining their ability to sleep. In this richly symbolic story that has serious implications of Puerto Rico's political and economic dependence on the United States, we also see how the reclamation of power and the uniting of forces among women function as a means of salvation, not only for themselves and for one another, but for the community as a whole.

Although the feminine struggle against the patriarchy is making strides in many aspects of Latin American life from the domestic sphere to the political arena, ultimately it is the propagation of feminist ideology through various forms of art and entertainment that will generate a true change in the attitude of the people. In this sense, literature serves as a means of education and inspiration, as it causes us to consider life not only as it is, but how it ideally could be. Through the use of a variety of creative narrative styles, Elena Garro, Silvina Ocampo, Isabel Allende and Rosario Ferré have incorporated into their works a message that bestows power upon the women of their society, giving them a voice that might not otherwise be heard. Women, who are portrayed here as the victims of the patriarchy, can overcome oppression by means of fantasy, escape in death, or solidarity and cooperation with other marginalized individuals, be they the indigenous population or other women. In this way, the written word has the ability not only to call attention to injustice, but to act as a catalyst for personal empowerment and social change.

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Winogrand on Women: Documenting Preference

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If an artist attempted to reproduce the style of Garry Winogrand (1928-1984) today it would not hold up to scrutiny. Not just because we would have to leaf through volume after volume of photographs to get the point (although that is part of it) but because his photography represents an ideal that we no longer have the patience for. It is the ideal that characterized the nature of his photographs and the kind of man he was. It was an ideal that belonged to the sixties, but the sixties according to Winogrand. The ideal drove the style of his picture taking, because while it could be evident in one photograph, it was evidenced in a more expansive study. Winogrand sought his ideal like Plato's fictitious cave dwellers staring at shadows but longing for the real thing. What was this ideal? Was it "person-ness"? Was it "society-ness"? At one point or another throughout his career, maybe it was all of this above. However, in the case of Winogrand's 1975 book *Women are Beautiful* the ideal pursued seems to be more like woman-ness. There is a sheer and sometimes insulting assumptive quality about these photographs, a categorization, a limited definition implied by them as to what a woman is or should be. Winogrand gets away with it, but only because he is considered something from an earlier time; we let it go because it's old and that's how people used to think. At best, this assessment is lazy; at worst, it is acceptance. Winogrand may have been the product of an era, even the product of a certain type of upbringing, but it is one that should be actively challenged and identified more readily for what it is: direct photographic evidence of one man's gaze.

The existence of the male gaze within art history is now something so thoroughly documented and often referenced it seems almost ludicrous to bother with a discussion of it. If anything, it has become an idea so overused that it has lost all sincerity and has simply become a term that implies some sort of anti-male Femi-Nazism. When the photographer is the man doing the gazing and his subject is the objectified female, the territory is somewhat uncharted. In the past, this idea of the male gaze has been traditionally defined by situations where male artists were engaged in something like painting or sculpture. Their intent was easier to document because it was present in every brush stroke or chisel mark, not to mention a cache of preliminary drawings. With photography one can often forget that the photographer is equally responsible for his actions. Winogrand is often credited as making history in the way his photographs document the feel of a period (Winogrand 9), but the way his perspective influenced the way he photographed is something rarely discussed.

In trying to understand where this man's gaze may have derived, it may be useful to look at the situation that produced him: his middle-class, Jewish, New York childhood. Winogrand grew up in the thirties and forties under the thumb of a dramatic, opinionated, and attention needy mother (Bishop, 37-38). No doubt, from the very beginning of his life, his feelings about women were somewhat skewed by this relationship.

Winogrand and his mother were often at odds. Young Garry was unruly, independent and often in trouble. Even in adulthood, Mrs. Winogrand never did understand her son or his profession

and was often critical of him long after he had become successful. While he must have inherited some of her tendencies and certainly her documented energy, in the end he must have felt somewhat antagonized by her and left doubting her ability to be a rational or even an emotionally consistent person. While it seems a little too conveniently Freudian to assume all of Winogrand's opinions were shaped by his difficult mother, the situation definitely deserves some credit. In some way this relationship must have left a residual impact on his perception of women.

After a stint in the army and a few years in art school at Columbia, Winogrand found his niche in photography and lost his GI scholarship because he stopped attending class and spent all night in the darkroom. Not long after, he fell in love for the first time with Adrienne, a then fifteen year old ballerina Winogrand would spend three years convincing to marry him (Bishop, 40). Winogrand was young and somewhat impulsive in his desire for the young dancer despite the long courtship. He knew what he wanted, not what was best for both of them and Adrienne, the less dependent of the two, who held off for years because she did not want to be just a wife, but also a woman with a life of her own. Eventually, the marriage failed. The pressure to perform as a wife, mother and provider was intense for Adrienne and she eventually left taking their two small children with her (Bishop, 40).

This period in Winogrand's life has been called the most influential in his development (Winogrand and Papageorge, 12) and is also credited as the time when most of the photographs for the book, *Women are Beautiful* were taken (Sherer, 22). That these two go hand in hand speaks volumes about how Winogrand's perception of the world affected the kind of photographer he was becoming. On the one hand, Winogrand would not be the first to have an emotional upheaval shape the kind of artist he became, on the other, the way the upheaval affected his work is difficult to empathize with from a feminist standpoint. The photographs that characterize *Women are Beautiful* are singular in the sense that they depict only variations on one version of what a woman could be. All of the women in *Women are Beautiful* are, in fact, beautiful; but only in a superficial sense that has more to do with Winogrand's own feelings about the defining characteristics of beauty or women's roles than any insight into the subject of beauty or the subjects themselves. Very few of them are not in their twenties and of those who are, there is generally some emphasis on their sexuality in a very "here's to you Mrs. Robinson" way. The number of breasts and thighs as center of interest is like a constant inside joke. At best, these are the caricatures of assumptions about a made-up standard of female beauty as it relates to sexuality or behavior. Tod Papageorge spoke to this condition when he said:

He was desperate, and with a wild logic photographed over and over again those women he was attracted to on the street. As he thought of it he was engaged in a project, a speculative investigation, an attempt to define and control a photographic method. But the work he produced in the service of this idea was also an open, repetitive description of his confinement (Winogrand and Papageorge, 12).

The confinement Papageorge is referring to could be identified as Winogrand's predisposition toward capturing something superficial. His statement, however, becomes more powerful when combined with something Ben Lifson noted in an essay on Winogrand in which he comments: "[Woman] appears everywhere, in three of her incarnations: nymph, mother, hag. He was faithful to each, and kept them distinct, accepted" (Winogrand, 155). Accepted is such an interesting and accurate word. Looking at these women does not take much from the viewer. They do not invite investigation or any sort of analysis; they just are.

The combination of these two quotes about Winogrand's state of mind and final product speak readily to his limitations. This idea of seeking to photograph some ideal woman could explain why Winogrand's collection of photographs only offers a repetition of the same ideas about women. The avatars of this nymph emphasize what could be described as different types of what Winogrand finds beautiful, ranging from overtly sexual to more demure. The problem with calling them art, however, is that these women all read like a young man's first look at porno magazines: all perky breasts, supple figures, the variants of a sexually charged ideal. Once this universal criterion is established, the variations on it are a way of dividing women into different subcategories based on certain similar physical or situational attributes. What could at first be considered their individual personalities is revealed as a motif used to emphasize or outline the attributes Winogrand desires in a woman.

As suggested before, all of the women in *Women are Beautiful* could be considered sexual in some way; however, the way sexuality is defined certain women speak very directly to the male gaze. This comes in many forms, but one of the most memorable is the depiction of her curvaceous blond figure sauntering down a city street. This woman is like an everyday pin-up girl; she is almost too perfect to be real. Her expression is detached, aloof and decidedly unengaged, which only makes her more desirable because she cannot disagree or defend herself. The viewer confronts this woman head



on. It is a straight stare despite the angling of the camera. The author of the photograph is clearly unashamed of his interest. This is a common theme throughout Winogrand's observations of so-called beautiful women. He may be voyeuristic and at times even a downright peeping tom, but he is never ashamed. Much like Ingres in painting his *Odalisque*, Winogrand is direct in his objectification.



Other examples of the sextop genre include a more obvious fixation on breasts such as in the photograph of a young woman at a party. Her pretty blond hair sways one way while her low cut shirt is cut tight against her chest, almost revealing the contents to an eager young man next to her. The young man dips his gaze to focus on her chest line which is the obvious focus of the composition. This example of a nearly naked top half is a motif that continues throughout *Women are Beautiful* in less tame versions, such as a dramatic scene in which a crowd made up almost entirely of men stares intently at a woman's naked breasts in the street.



In taking another approach to the idea of Winogrand's gaze, it is interesting to note that many of the photographs within *Women are Beautiful* offer some commentary about the role of the female in society. While the previous physical ideals of emphasized sexuality still stand as a general rule of thumb, the women in some photographs seem to be identified by their behavior as well. They fulfill an ideal that again represent one man's limited vision of how a woman should or does behave. What is striking about the behavior of all of these women is its superficiality. The ideal woman Winogrand is searching for is not very complex. She is made up of the categorical stereotypes often asserted about women as opposed to being based on any one actual person. These women are never doing anything that suggests intelligence or capability and are often in a situation that makes it easy to objectify them.

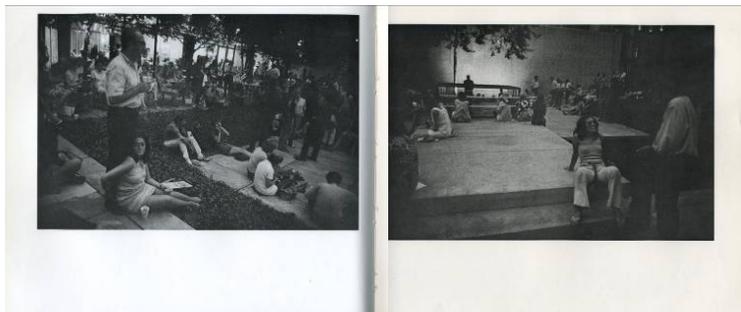


about women as opposed to being based on any one actual person. These women are never doing anything that suggests intelligence or capability and are often in a situation that makes it easy to objectify them.

The best example of this is portrayed in Winogrand's often reproduced photograph of the gossiping girls on a bench. This photograph single-handedly sums up nearly every stereotype ever put forth about women. The girls in the center whisper secrets to each other, the bonding experience emphasized by the close contact and cradling of the third girl's head. The girls to the right of the central group muss with their hair, smooth their dresses, and look off into the distance at something that captures their fluttering interest. Their youth is emphasized by the older, more fatherly man at the edge of the photograph. The woman to the left of the group is flirting with an African American man. He leans in toward her and she pantomimes shock possibly at something he has just said. Her pose is such a perfect expression of this surprise that it seems practiced and unreal. Her potential suitor stares admiring at either her chest or the legs of the center group of girls (his gaze is unclear), his demeanor suggesting that it's possible her shock is at something in his attempt to hit on her. This flutter of activity represents Winogrand documenting something he considers a worthy observation of the way women interact, without professing to understand what goes on inside it. Its very inclusion in this book, however, passes a judgment over the actions contained here. Since this is a book about women who are beautiful, this photograph exists as a document of what beautiful women must behave like or even just women in general. By that logic, women are fluttery, flirtatious and gossipy; nothing more.



In the most allegorical and poignant display of Winogrand's assumed prowess as depicter of ideal female value are two facing pages in *Women are Beautiful* that seem to have been taken at the same event. The way they are presented makes it hard not to see a relationship between them. The full spread acts visually as a metaphor for two sides of the same coin; the focus of each photograph at the opposite edge of each page. On the left, is a woman who reaches back to wrap her arm around to the legs of her standing male counterpart. She rests her head against his leg and seems to have an internal focus as though intent on being near him, focused on holding him up; her face is the picture of relaxed contentment. The rest of her body sits comfortably on some sort of outdoor fixture. The



The man she holds onto pays no attention to her, but instead stares off at something outside of the frame of the shot. This woman is the picture of loyalty and dependence in her actions toward her companion.

In the photograph on the opposite page in the far right corner sits a slightly younger figure who faces the viewer, but the object of her bodily direction and gaze is a man in the far right corner who leans in ever so slightly in conversation with her. This woman leans back on her hands which are spread out behind her in a pose that forces her chest outward, further constricting her tight and revealing tube top, her legs spread wide apart. In this pose, she is presenting herself to the man she is talking to in a way that is so dramatically sexual it cannot be overlooked or dismissed as anything else. Whether or not she intended to present herself this way, Winogrand certainly did.

The potential for an intended message in either of these two photographs is underscored and recontextualized by their layout. The scene becomes the personification of allegory about a

woman's value. On the one hand we have the loyal and committed women, content with her man and acting as his support while he is free to do (or in this case gaze at) whatever he wishes. This part of the allegory is helped by the fact that this couple is older and dressed more conservatively. The second pairing emphasizes a woman's role as sexual being, offering herself up as something physical and available for consumption. This scene is helped along by the young woman's youthful exuberance as well as her counterpart's shadowy depiction. His profile makes him appear young but he is undefined and therefore could be any man. What matters more than his identity is her presentation. Both photographs are further linked by their surroundings. Each is in the same public park, and it is possible that they could even be on the same plane, but it seems more likely that the photograph on the right was taken a little further back due to the placement of the background structure. Both photographs present their figures in the same crowd but the figures at the forefront of the composition take up all the visual weight and leave nothing else worth looking at; they are like statues and everyone else is the musing crowd. The presence of the crowd and misty night and park serve only to further unite them as two parts of the same scene and thus two parts of the same allegory. When read this way, the superficiality of the implied meaning is just a little depressing.

One of the most interesting situations surrounding Winogrand's style of photographing is the relationship he creates between himself and his subjects. All of the evidentiary photographs presented thus far as documents of Winogrand's personal views of women are compounded by the fact that he is revered as someone who tried to photograph things as he saw them (Westerbeck and Meyerowitz, 380). Others have characterized his approach in the terms that "Each picture was a formal translation of 'Look at that!'" (Wilner-Stack 276). Winogrand also saw photography as a means to a certain end. He is said to have photographed things "to see what they would look like as photographs" (Bann 39). This implies that he recognizes that there is a difference between a photograph and the way the real world looks, but also acknowledges his own hand in making the visual decision on what is in his photographs. As Stephen Bann put it,

This may appear an innocent enough aim, but its implications are significant, when measured against the classic strategies of pictorial composition. For his is asserting that the type of knowledge offered by photography is simply not to be obtained from the phenomenal world: it demands that special effect of distancing which is obtained by the instantaneous click of the shutter (Bann 39).

Put more simply, Winogrand recognized that photography changed the way things look, that it could not be relied upon to capture the world exactly as it truly was, and that he used the camera to portray his own decisions about the world. This is especially important to remember when considering *Women are Beautiful*, because without this understanding it is easy to dismiss the judgments made there as a product of simple documentation.

When this insight to his methodology is applied to *Women are Beautiful*, there are certain photographs that become especially disturbing for the distinctive voyeurism they imply on his part. The direction of what one may assume is Winogrand's sight gives him away once and for all as a heterosexual man over an artist. There is the woman in the phone booth who leans absently against the corner of the booth and puts her foot up against the diagonal corner. The mistake here is that this woman is wearing a skirt. Winogrand uses the squares made by the metal sides of the phone booth and the angle of his camera to create a viewfinder to the area under the woman's upturned skirt. In what is arguably the best



example of the male gaze in the entire book is the photograph of the woman in the act of pulling off her pants to go skinny-dipping. Framed perfectly by two trees, the viewer looks down at her from above in a way that could be interpreted as dominance. All three women are anonymous and all three are oblivious to Winogrand's uninvited gaze. Arguing that this constitutes more than one man's vision is arguing that the work of any peeping tom is art photography.

Returning to the discussion of *Women are Beautiful*, one thing that does shed some light on the situation of this particular collection is the question of editing. Winogrand was famous for his refusal to edit his own work (Troy, 84). While he is still the author of all of the photographs that are found within *Women are Beautiful* (and all of their individual value judgments on women), the question of who was responsible for the selection and juxtaposition of



images is not as certain. Winogrand may not have chosen these specific photographs to be included in this book or at the very least he may not have been the one who arranged them. There is some suggestion that the author of the introductory essay to *Women are Beautiful*, Helen Gary-Bishop, may have had something to do with the curation ("Back Matter" 954). This is an important footnote because it implies that layouts like the one discussed earlier, which represent allegory in the juxtaposition of pages, is not something Winogrand may have consciously intended. Further evidence that Gary-Bishop may have had a hand in the layout resides in her essay, which is really more like short story, discussing the somewhat depressing plight of a woman through various stages of her life and ending in the woman's eventual abandonment and focusing on her loneliness. Following the essay is a note from Gary-Bishop herself on the connection she perceives between the essay and the photographs: "There is a Winogrand Woman in all of us" (Winogrand and Gary Bishop, 7). It is unlikely, however, that Winogrand disapproved of the layout since his name is on the work, as well as a statement from him reiterating his assertions about female beauty (Winogrand and Bishop, 7). There is also a dedication to his third wife Eileen and his two daughters on the title page that is particularly interesting given the contents of the book (Winogrand and Bishop, title page). It either reiterates that Winogrand saw these depictions as respectable, accurate representations of women, or that he simply wasn't aware of what the contents of the book were. The former seems to be the most likely but either way, it impossible to be certain whether or not Winogrand was not responsible for editing the book.

However Winogrand sought out his ideal or what he intended to capture, there is no doubt that his photographs are engaging. Through this essay it is not my desire to undermine his abilities as a photographer, or to degrade the women who have characteristics as those Winogrand idealized. I simply strive to shed light on this depiction as something that offers a limited and small-minded assessment, one tiny part of what any woman is or what is beautiful. Beauty is rightfully in the eye of the beholder, but a conjectural depiction of beauty is a shortsighted one and while no one can truly argue that physical appearance does not effect the way a person is viewed or treated, it is also equally true that any person, beautiful or not, deserves to be regarded as more than superficial.

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Facing an Uncertain Future: Images of Nationalism in Nineteenth Century Germany

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Throughout Western Europe nationalist enthusiasm flourished during the nineteenth century. Opposition to absolutism encouraged experimentation with different forms of government, such as democracy. As new styles of national government were being considered and implemented throughout the world, social unrest grew. German nationalism was sparked by continental Europe's move toward greater national identity. Germany traditionally held individualism and absolutism in an uneasy balance. Revolution in France, followed by occupation by Napoleon threatened this fragile equilibrium. These events jeopardized the hoped for unification. The German Romantics – the poets, writers, musicians, and artists – used their influence to further the goals of German national unity and distinctiveness. They sought a national identity that would reflect the German people. Artists, specifically Caspar David Friedrich (1774 - 1840), depicted true “Germanness,” the idea of a unique German legacy, synthesizing culture, religion, and politics into paintings that became national images. Throughout German history the idea of ‘Germanness’ had long been discussed. *Deutschheit* – or ‘Germanness’ – the idea of German nationalism, can be traced back to the latter part of the eighteenth century. Germany's long history of fragmented politics and culture, which were firmly interwoven, effectively denied the sought after unity, in both the art and political arena (Forster-Hahn, 19-20).

The German-speaking people traditionally found expression for their Germanness in music and literature. In the visual arts, it was much different. Without a national cultural center, the visual arts developed regionally, lacking a cohesive national style. Within the fragmented German states of the early nineteenth century, the need for a national style arose, and an image depicting the psyche of the entire German people. Caspar David Friedrich embraced the ideas of true “Germanness”, confronting contemporary issues in an entirely new and bold way: through the unorthodox use of the landscape.

While the sublime is associated with many works produced in the early nineteenth century, awareness of other issues, including the religious, cultural, and political conditions in Germany is necessary to understand the Romantic image. The sublime is but one aspect of a much larger narrative. This paper does not intend to consider every element associated with Romanticism. What will be briefly considered are the religious, cultural, and political conditions contributing to the Romantic imagery as invented by the German painter, Caspar David Friedrich.

Invention is a key design element in Friedrich's compositions. While his landscapes appear topographical and contain a draughtsman's precision, they were in reality born out of his own imagination. He would spend hours sketching out of doors objects such as trees, ruins, and dolmens, with exacting precision. He would then produce stunning sepia drawings for the market. In his oil paintings he would use the same precise technique for the preliminary drawing. While some of his compositions are specific locations, such as the *Chalk Cliffs*, many are

imagined places, such as *Mountains in the Mist*. While this is not in itself an unusual characteristic, it is the idea of invention combined with his mystical Christian belief that created an entirely new meaning for landscape painting.

Scholars have firmly established the relationship between German Romanticism and Christian mysticism. Religion, whether Protestantism in the north or Catholicism in the south, was strongly embedded into the German psyche. One reading of Friedrich's work begins and ends with religion. But, like the sublime, it is one part of a greater scheme. Religious practices began changing along with the cultural and political customs. A movement grew toward mystical Christianity and away from the traditional religious forums in favor of individual religious experience still within the framework of Christian theology, creating a new form of religious landscape painting.

Friedrich chose motifs from nature for a variety of reasons. The first and most obvious reason was the ability to use nature to convey what Charles Sala calls "the tangible with the invisible natural phenomena" (Sala 85). By combining nature with symbolism he creates a kind of allegory. This becomes key to understanding his political works of the 1810s. Before considering the issue of politics it is necessary to understand the cultural issues facing society.

German Romanticism struggled with the ideas of preserving "individual freedom while pursuing collective aims" (Cardinal 27). Coexisting within German culture was a strange tension between individualism and absolutism. The French revolution and its goal of democracy fostered the hope of German unity. Yet its failure to achieve its purpose led the Romantic thinkers to reject "reason and man-made institutions". The result was the distrust of change and authority of any kind. Long established institutions and traditions were overturned so quickly that society became unsure, desperately seeking stability.

Friedrich's images suggest the inevitability of change. While the future may seem uncertain, foggy, unreal, it is inevitable, just like the passage of time.

Both Phillip Otto Rünge and Friedrich explored these issues in their paintings and drawings. Friedrich produced a series of sepia drawings, based on the passage of time, where he explored the forward motion of life. Friedrich's portrayal of life and time emphasizes the cultural changes occurring throughout Germany. He illustrates the relentless movement of time. The series records the human life cycle, as well as the natural development of civilization. *Spring* (fig 1) depicts newly budding trees and two childish figures grasping at the world around them, without any reference

to society outside of the two young people (fig 3). Perhaps without external influences these two innocents can grow up unscathed. Two young lovers set amid lush trees, a type of arcadia, allude to the next phase of the life cycle, *Summer* (fig 2). They seem to represent a hopeful future, again without foreign influence. Autumn presents a couple, more mature, walking

toward a developed city (fig 3). These two people must contend with a developed society, and its associated problems. They pass mature trees and a cemetery, possibly contemplating the passing of time. Finally, winter comes, and now the couple must grapple with mortality (fig 4). The progression of time cannot be thwarted, and they sit together at the end of life. The march of time was certain in Friedrich's mind, for the individual as well as for the nation. Napoleon's invasion forced the German people to



Fig 1



Fig 2



Fig 3



Fig 4

consider their precarious future as a people.

Napoleon's occupation of German lands renewed the desire for a unified nation. According to Albert Boime, "Artists in response to Napoleon's incursion began framing their work with a view toward political nationalism" (Boime 320) The time had come for Germany to emerge as an independent national culture. Artists rejected the French style of classicism in favor of what was seen as a true German style, the medieval gothic style. Unfortunately, the defeat of Napoleon led not to a national government, but back to regional rule within a very loose confederation of German states. The regional princes, fearing revolution, banned or censored any group associated with nationalist goals. In response, people turned to the sciences, philosophy, and the visual arts for expression of political change (Cardinal 10-11). Romanticism in art and culture became the vehicle for the "growth of a national consciousness and political unity" (Cardinal 10-11).

The art historian Frank Mitchell states, "Many artists of the day felt that art must change to meet the changing society" (414). Just how art should change was left to the artists. Friedrich and other European Romantics created a new kind of artistic expression, challenging the conventional teachings of the academies. Friedrich's criticism of academic training was that it disrupted artistic creativity. In an often-quoted statement, Friedrich asserted, "Close your bodily eye so that you can see with your mind's eye." In his opinion, the academy's insistence on copying classic models impeded the students' creative process, producing copyists rather than artists. Viewing nineteenth century art of any subject through twenty first century eyes, it is difficult to accept that these artists were indeed radical. Friedrich, like so many before and since, was simultaneously applauded and loathed, then quietly forgotten and eventually resurrected. In Friedrich's own words, "every age bears its own character" (Harrison 52).

Friedrich's work is full of uncertainty for the future of and love for his homeland. These concerns were essential to the growth of nationalism. Friedrich produced images that left viewers feeling unsettled. His work only presented the situation without obvious resolution. A compelling subject debated by artists, philosophers, and writers was the combining of art, knowledge, and nationhood (Schuster 27). Linda Siegel has stated that:

Philosophers such as Schelling, Novalis, Tieck, and the Schlegel brothers explored the relationship between art/philosophy/religion at the end of the 18th century while they were in the University town of Jena. They proposed a fusion of these thoughts with the ideas of the inner man and his outer life and the finite/infinite. To achieve these goals in art, Schelling called for a symbolic art that could synthesize all of these ideas (Siegel 27).

Romantic artists developed a German style through referring to their own national heritage. They looked back to the works of Dürer and Gothic architecture as being true reflections of Germanness. Through looking at the past, Friedrich devised symbolic language to express his ideals (Forster-Hahn 21). Frank stated, "the issues that define the Romantic canon revolve around landscape painting, pantheism, and personal symbolism" (143).

Friedrich embraced landscape as a means to express his thoughts. Contemporary viewers, however, more readily understood his symbolism (Frank 143). In the painting *A Man and Woman Contemplating the Moon* (fig 5), the human figures are frozen, passive observers, contemplating the changes of nature and changes in history. He synthesized mysticism and symbolism into landscape in an effort to understand and draw attention to the national crisis (Boime 321). In addition to the obvious religious readings of his



Fig 5

works, there is another reading, that of the patriot. Understanding Friedrich’s deep love for his homeland is necessary to comprehend his work. Eugene Anderson refers to Novalis when he states that the Romantics were deeply concerned with the cultural crisis that enveloped them (Anderson 302). This forced them to consider all areas of life and culture, rather than focusing explicitly on localized issues. The concern with broader issues affected how they chose subject matter and created art. When a united Germany was still a much hoped for, but future event, “Friedrich pictured his ‘German’ landscapes with a national and cultural identity that was both highly emotive and patriotic” (Forster-Hahn 23-24). Friedrich, as well as others, used common symbols understood by his viewer’s to convey pressing questions that needed to be addressed. The three symbols of nationalism used most often by Friedrich were oak trees, ruins, and dolmens (ancient grave markers). Börsch-Supan has noted “to use natural objects as if they were words—admittedly comprehensible only to the initiated – made particular sense in the period immediately prior to the Wars of Liberation. Nature was seen as the secret language of those opposed to Napoleon; religious and patriotic impulses mingled. In this way art recruited support for the rebirth of Germany”(277).

One such nature symbol used by Friedrich was the oak tree, found in many of his paintings, drawings, and sepias. In *The Solitary Oak* (fig 6), the oak tree was associated with Germany (Forster-Hahn 23). The central image, an aged oak tree, provides shade and protection for the shepherd beneath it. In the same way, a unified Germany, born of an ancient culture, would protect her people from belligerent nations that surrounded the country. Friedrich’s message was made clear through the use of well-known objects combined with his invented views proclaiming the necessity of political unification.

Ruins were also a popular motif during the nineteenth century throughout Europe. Many such sites could be found throughout the German countryside. Friedrich used ruins as a reminder of Germany’s past greatness, as seen in *Ruins in the Reisingebirge* (fig 7). Here, two people dressed in altdeutsch costume, stand in a field before a well-kept farmhouse, in the shadow of a ruined church or monastery. German nationalists wore the altdeutsch clothing, which consisted of a dark cape or overcoat and a floppy hat. It would have been easy to spot someone with nationalist sentiment by his or her clothing. The decaying church casts a shadow of its previous grandeur, while the farmhouse suggests the continued German culture. The ancient race continues in the form of the contemporary men sharing a moment. It is the past and the present merged, able to move forward to the future.

Friedrich frequently went to the island of Rügen for drawing walks. Here he encountered ancient dolmens or grave markers (fig 8). The ancient dolmen marks an unknown grave, surrounded by towering oaks. Both objects, the oak and the dolmen, suggest Germany’s ancient heritage. The snows of winter allow the trees time to sleep, in preparation for awakening in the spring. And so it was hoped, Germany had come through the winter and was ready to awaken to new life, and new unity.

Friedrich, as a supporter of the German freedom fighters, welcomed many anti-French nationalists to his Dresden studio (Siegel 71). The Napoleonic wars profoundly affected Friedrich, as reflected in his paintings from 1806 to 1814. The depth of his anti-French sentiment and activity is revealed through the paintings of his native land (Biome 583).



Fig 6



Fig 7



Fig 8

Friedrich, universally described as a melancholic, produced two works during these troubled times that indicate an increased sense of unrest: *Abbey in the Oakwood*, 1810 and *Monk at Sea*, 1809 (Siegel 72). These two works were created as pendant pieces, and were sent to the Prussian Royal Academy in 1810 for the annual exhibition. So taken was the Prussian Crown

Prince with these paintings, that he convinced his father, Frederick William III, to buy both works (Hoffman 53). Considering the economic condition of the region as Prince Frederick William scrambled to pay his war reparations to the French, this was a curious purchase.

Siegel points out that to understand *Abbey in the Oakwood* an understanding of the political climate of the day is necessary (fig 9) (Siegel 75). The Prussian army had recently suffered a devastating defeat by the French army at Jena and Auerstedt in October of 1806. As a result the Germans were forced to pay large reparations to France (Hoffman 53). Using a monochromatic palette, Friedrich combined several motifs imaginatively, to create a meaning embedded with nationalistic sentiment. The absence of color adds to the desolate and indeed desperate mood of the composition. Some scholars interpret the oak trees as a reminder of the strength of the German people, both past and present. The iron cross refers to the medal of bravery awarded to soldiers and also as a hoped for salvation from foreign occupation. This is an image of both death and life simultaneously. Friedrich's scene creates a new paradigm: the romanticized image of death and decay (Siegel 74). Everywhere the viewer looks these two images are at the forefront – in the funeral procession, in the bare trees, and in the ruins. One has to look very carefully to find any possible escape from decay. But, according to Siegel, there is hope through the “strong nationalistic spirit which refused to bend to the French troops [represented by the bare oaks]” (Siegel 76). Another source of hope lies in the cross in the right foreground. New grass sprouts around the cross, alluding to the possibilities of the future. Friedrich seems to be confronting and comforting at the same time.



Fig 9

Monk by the Sea (1809) offers another viewpoint in a rapidly changing world (fig 10). Using a palette of cool colors --gray, blue, and green-- adds to the overall feeling of hopelessness. The horizontal composition enhances the endless expanse reaching into eternity. The lone



Fig 10

monk grapples with his finite being in the context of an infinite and perhaps hostile environment. There is no rest, no comfort for this isolated man.

Friedrich illustrates the need for individuals to consider their part in Germany's future. The contrast between the individual and the communal presents a contrast between the two pendant pieces.

In the companion pieces, *Abbey in the Oakwood* and *Monk by the Sea*, Friedrich confronted two coinciding issues emerging in the early part of the century. First, German culture was decaying. The *Abbey in the Oakwood*, which was based on the ruins at Eldena, a real location, was the scene for the funeral of the culture. A fragmented culture could not move into the future successfully. As a culture, they would risk losing their Germanness as change swept through Europe. The French invasion was the final deathblow to an already splintered people. The oak trees stand as watchmen over the ritual taking place. The abbey, now in ruins, refers to the

gothic tradition that Goethe had pronounced as truly German. No longer lofty and proud, it is a murky shadow of what was. The monks go about their tasks, tiny, barely visible, few in numbers. This image reflects society as a whole – the culture, the religion, the politics. It is a moment of communal mourning.

In contrast, *Monk by the Sea* reflects the personal reaction to inevitable change. The monk, alone, looking toward the sea is compelled to contemplate the infinite unknown. In Friedrich's image, the monk has nowhere to rest his eyes – the emptiness is vast and overwhelming. Originally Friedrich had placed boats on the horizon, and then painted over them. Perhaps the boats cast hope for salvation that he didn't see in the future. Friedrich was concerned for his future and that of his country. His images presented invented circumstances that caused viewers to consider the tentative future of Germany, but he leaves the viewer alone to answer. Friedrich creates unresolved tension. When these two images were exhibited, a woman, who had admired Friedrich's work, recorded her thoughts in a letter:

I also saw a large painting in oils which did not appeal to me at all. It shows a wide, endless expanse of sky, under it a stormy sea, and in the foreground a strip of white sand, along which the darkly shrouded figure of a hermit is seen creeping. The sky is clear and indifferently calm. There is no storm, no sun, no moon and no thunder. Yes, even a thunderstorm would be consolation and pleasure, for then one would at least see some kind of movement and life. For there is no boat or ship, indeed not even a sea monster to be seen on the endless ocean. And in the sand there is not even a blade of grass. Nothing but a few seagulls flitting around, which makes the loneliness of the scene all the more grim and desolate (Boime 582)

Friedrich was successful in causing his viewer to feel an intensity of emotion, in this case foreboding and loneliness. The future in his eyes was uncertain.

Political landscapes were a new genre in the history of art. During 1813-1814 Friedrich's works "celebrate the ousting of the French army, and allude to desire for German unification" (Cardinal 68). Oppression by the French and the corresponding resistance was greatest in Northern Germany, Friedrich's home. Using symbolism that would be understood by viewers in *The Chasseur in the Forest* (fig 11), Friedrich devises an image echoing the anticipated defeat of the French. Here, the tall oaks towering over the French soldier point to Germany's past majesty. The raven acts as a prophet of doom, suggesting the future defeat of the French (Siegel 86-87). The symbolism used by Friedrich draws inspiration from Heinrich von Kleist's play, which was well known at the time, "Die Hermannsschlacht" act V scene 3, when the Roman leader, Quintilius Varus, wanders into a strange fir forest, where he meets an old sorceress who predicts his death. This was Friedrich's most explicit patriotic work to date (Vaughn 149).



Fig 11

Friedrich again created two companion pieces in 1814 for a patriotic art festival, *Hermann's Grave* and *Tombs of the Fallen Heroes* (Siegel 88). In both works he juxtaposed personal and communal hope and loss, death and salvation. In *Hermann's Grave* (fig 12), Hermann, which is the German form of Arminius, he recalls the Germanic chief who defeated the Roman army in 9 CE. Here the individual becomes active, unlike the contemplative monk, leading the fight for freedom from a foreign occupation. Friedrich chose to position the two roles people must play: the self and the



Fig 12

civic. In *Tombs of the Fallen Heroes* (fig 13), Friedrich reminds viewers of the realities of conflict, the death of friends and family. While Friedrich didn't join the army, he knew and financially supported friends who did. Of those men, three died. It was out of their deaths that his political landscapes became so poignant (Siegel 88). Set in the landscape are three grave markers, the broken gravestone has the inscription 'ARMINIUS'; the obelisk reads 'Nobel youth, Saviour of the Fatherland'; and on the central panel of the sarcophagus are the words 'Peace be on your grave/Saviour in time of need' (Hoffman 92). Wandering through the cemetery are two French Chasseurs. Vaughan remarks that the foreigners appear to be swallowed up by the German land that they came to conquer (Vaughn 144). The long desired unity of the German states seemed at an end with the Congress of Vienna of 1815. Allying themselves with Russia, the Prussian and Austrian states appeared as the most powerful of the German states (Vaughn 155).



Fig 13

The freedom fighters, turned political dissenters, continued to pursue the dream of a united nation. Friedrich was among them. In response to the radicals, in 1819 the governing bodies banned all political groups. Many of Friedrich's political acquaintances were arrested. One friend, Ernst Moritz Arndt, lost his position as university professor. Friedrich was well aware of the political climate when he produced the northern landscape, *Two Men Contemplating the Moon* (1819-1820). German nationalists wore this specific clothing (fig 14). It brought to mind the wars of liberation and the desire for political unity and true Germanness. It was a deliberate choice on the artist's part, knowing that this image would be politically incorrect. The figures wear the freedom fighter regalia, known as *altdeutsch*, almost in defiance of the new governing body. This painting did not win acclaim for Friedrich. From this point on both he and his work began fading into obscurity. His desire for a unified nation never left him, even as public sentiment changed. His work became outmoded; he was considered an old eccentric.



Fig 14

The Romantics early in the nineteenth century raised questions concerning Germany's identity – both as individuals within the community and as a larger social organism. The vision of the Romantics centered on unity, cultural and political. After the defeat of Napoleon's forces and a return to the princely rule of the separate German states, these issues were to be quietly ignored, except by a few radicals who were censored. Fear of more violence and upheaval quelled the desire for change. But the problems of unity did not meekly go away. The early twentieth century Expressionists explored the question of German culture and politics as the Romantics had a century earlier, in a sense picking up where the Romantics ended.

"The root of Romanticism is found in the chasm between the reality and the imagined. 'The romantic faces a reality which is chaotic, fragmented, without meaning'" (Cardinal 28). This was certainly true for those living at the beginning of the nineteenth century. The effort to move through the chaos to create a new political situation was difficult. Those who did imagine a unified culture and a German nation were few in number. In memory of the tenth anniversary of the French defeat Friedrich composed *Hutten's Tomb* (1823-24). This image combines a German man wearing the *altdeutsch* hat, leaning over a tomb set



Fig 15

within a church ruin (fig 15). Inscribed on the grave are the names of GJD Scharnhorst, Joseph von Görres, Ernst Moritz Arndt, and Friedrich Ludwig Jahn, friends of Friedrich's as well as freedom fighters, who died opposing the French military

(Koerner 244). Ulrich von Hutten was a nationalist from some 300 years earlier, who also agitated for German nationalism. He, like Friedrich and his friends, did not live to see unification. Friedrich's painting was created in honor of fallen comrades, past and present, and to the cause for which they died.

Of the minority willing to agitate for unity, Friedrich was bold in his action. In his images Friedrich unflinchingly confronted both the individual and the community, reflecting a people at a crossroads. His desires for political unity were evident in many of his paintings. His own appraisal of the German psyche led him to create images that mirrored the nation's plight.

From his early days as an artist in Dresden Friedrich produced work that was related to social concerns. Friedrich's refusal to give up the ideas of national unity in the end left him alone and without support. He held fast to his ideals, even as the tide of public opinion changed. Friedrich's images mirrored the German people's quest for unity. Using German scenery in imaginative compositions, he produced imagery that continues to reflect the struggles of nineteenth century Germany.

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The Diary of a Country Priest by Georges Bernanos: Introduction and Translation

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Introduction

Born in Paris in 1888, Georges Bernanos would become one of the most original Catholic writers of twentieth century France. Highly influenced by Léon Bloy, his most celebrated work is *Journal d'un curé de campagne*, or "The Diary of a Country Priest," which was awarded the *Grand prix du roman de l'Académie Française*, and was later made into a film by Robert Bresson, in 1951. The premise of the story is what the title would suggest; recounting a priest's experiences in Northern France as he struggles to overcome the grief and ennui that has settled over his parish like thickening dust.

While translating the *Diary*, I encountered a number of problems upon which I will elaborate. In French, pronouns are used quite differently than in English. Because French nouns are either masculine or feminine, it is possible to attach gender to an image. As this is not the case in English, a great deal can be lost in translation; one is generally forced to use "it." In the *Diary*, Bernanos specifically refers to the parish as "her" because, in French, it is *la paroisse* (feminine). The use of "her" in English, however, would have been totally inappropriate, and thus the allusion to femininity is regrettably lost.

Another example of the difficulties I had while translating was the vocabulary itself. Bernanos uses the word *ennui* extensively in the first part of the chapter, and I chose to leave it as such. While it does mean "boredom," *ennui* is more of an umbrella term, conveying much more than the literal meaning. English has borrowed the word, maybe because there is no equivalent that so wonderfully describes the sort of meaninglessness brought on by weariness of life itself.

Another example of vocabulary is the phrase *tortillements auriculaires*, which I have ultimately translated as "auricular writhings." The word *auriculaire* in French is the same as in English and equally as erudite, meaning "of or related to the sense of hearing." It was *tortillements*, however, that I found problematic. Meaning "squirmings," related words I had considered were the more literal "twistings" and the more liberal "weavings." I quickly decided against the literal translation, as well as against the use of "twistings," which seemed to imply dishonesty (as in one twists one's words). The latter particularly struck me, though, recalling the phrase "to weave a tale," and even implying a craft or skill. But, "writhings" seems to me to be the best choice, being a very closely related word and much better suited to the text than the other options I might have contrived. It must also be noted that the alliterative quality produced when paired with "auricular" is very pleasing to the ear – an important component to take into consideration when translating the French language.

The last, and possibly most puzzling, example of difficulties with the vocabulary was Bernanos' use of the word *poilu* – literally, "hairy." While the literal translation provided some very interesting imagery, an extensive online search yielded the true meaning of the word – slang

referring to French infantrymen, particularly those of World War I. This is a perfect example of why cultural literacy is so important for the translator, and probably the reader, as well.

Similarly, Bernanos refers to a M. Anatole France, an allusion which is undoubtedly lost on the majority of the English-speaking population. M. France was a Frenchman who had won the Nobel Prize, died in 1924, and was considered to be the ideal man of letters. A Francophone reader of Bernanos would recognize this reference, just as an Anglophone would be able to grasp a reference to Yeats or Shaw. Incidents in translation, such as this and the preceding example *poilu*, prompt me to want to include foot- or endnotes to better inform the reader.

In the end, translating the *Diary* was a labor, though admittedly not always of love. Easily the most difficult work I have endeavored, there is a complexity present in Bernanos' text that compels one to read and re-read it; "It cannot be immediately understood." But, the more I worked with the text, with the words themselves, the more I found I enjoyed it. I have a deep appreciation for not only Bernanos' poignant prose, but the precision with which he chose his words, his ability to create the very real presence of the country priest, and the powerful emotions which he so skillfully inspired.

Translation

My parish is a parish like any other. All parishes appear alike. The parishes of today, of course. I was saying this just yesterday to the priest of Norenfontes: the good and the bad must balance each other out; it's just that the center of gravity is placed low, very low. Or, if you'd rather, one is superimposed upon the other without mixing, like two liquids of different densities. The priest scoffed at me. He's a good priest, very kind, very paternal, and who is even perceived by the archbishopric as a strong mind, perhaps even a bit dangerous. His witticisms are the joy of the presbyteries, and he reinforces them with glances that are meant to be stern but that I found so worn-out, so weary that it makes me want to cry.

My parish is devoured by ennui – that's the word! Just like every parish! Ennui devours them all right before our very eyes, and we can do nothing about it. One day, maybe this disease will spread to us, and we will discover this cancer within ourselves. One can live with it for a very long time.

The idea came to me yesterday while I was on the road. One of those fine rains was falling that goes straight into your lungs and down into your stomach. On the side of Saint-Vaast, the village appeared quickly in front of me, cramped and miserable under the hideous November sky. The water misted everywhere, and the village seemed to be sleeping there, in the streaming grass, like a poor exhausted beast. My, but how small, this village is! And this village was my parish. It was *my* parish, but I could do nothing for it, I regarded it sadly, disappearing in the darkness, despairing... Several moments later, I could no longer see it. I had never felt so cruelly its solitude and mine. I thought of those beasts of burden that I would hear cough in the fog, and the little cowherd on his way back from school, his satchel in his arms, just now crossing the soaked pastures around the hot, stinking cowsheds. And the village, it seemed to be waiting, too – without much hope – after having spent so many other nights in the mud, a master following around some improbable, some unimaginable refuge.

Oh! I know all too well that these are foolish thoughts, dreams that even I don't take seriously... The villages don't respond to the voice of a little school boy like the animals do. It doesn't matter! Yesterday night, I believed a saint could have called it.

I was saying to myself, then, that the world is devoured by ennui. Naturally, it's necessary to reflect a little to realize it; it cannot be immediately understood. It is a kind of dust. You

come and go without seeing it, you breathe it, you consume it, you drink it, and it's so fine, so imperceptible that it doesn't even crunch between your teeth. But, you stop yourself for a second, and there it is covering your face, your hands. You have to move constantly to rid yourself of this ashen rain. Therefore, the world fidgets a lot.

It will be said maybe that the world has been familiar with ennui for a long time; that ennui is the veritable condition of Man. Maybe the seed is spread everywhere and it germinates here and there, in a favorable soil. But, I wonder if men never knew of this contagion of ennui, this leprosy? A failed despair, a despicable form of despair that is undoubtedly like the fermentation of rotting Christianity.

Of course, these are thoughts I keep to myself. I am not ashamed of them. I believe even that I could make myself understand very well, too well maybe for my peace of mind – I want to say the peace of my conscience. The optimism of superiors is long dead. Those who profess it still teach it by habit, without believing it. At the least objection, they lavish on you knowing smiles, asking forgiveness. The old priests don't make mistakes. In spite of appearances and if one remains faithful to a certain vocabulary, rather unchanging, the themes of official eloquence are not the same, our elders no longer recognize them. In the past, for example, a secular tradition wanted that an Episcopal discourse would never end without a prudent allusion – convincing, of course, but prudent – to the next persecution and to the blood of martyrs. These predictions are much rarer today. Probably because the realization of them appeared less certain.

Alas! There is a word that is beginning to run through the presbyteries, one of these awful words from trenches that, I don't know how or why, appeared funny to our elders, but that the boys of my age find so ugly, so sad. (It is rather surprising how the slang of the trenches could succeed in expressing sordid ideas in lugubrious images, but is it really the slang of the trenches?) Therefore, one willingly repeats that "it is not necessary to search for understanding." My God! We're there to understand! I understand that there are superiors. Only, who informs the superiors? We do. When we boast obedience, and the simplicity of monks, no matter what I do, the argument doesn't affect me much...

We are all capable of peeling potatoes or caring for pigs provided that a master of novices gives us the order. But with a parish it is not so easy to regale acts of virtue as in one simple community. Others will always ignore them, and, what's more, they would never understand.

Since he retired, the archbishop of Baillœil constantly frequents the home of RR. PP., Carthusian monks in Verchocq. *What I Saw at Verchocq* is the title of one of his lectures that the father superior obliged us to attend. There, we heard things that were very interesting, even passionate, in close tones, because this charming old man guarded these little innocent manias of the former professor of letters, and looks after his diction like his hands. It is said that he both hoped and feared the unlikely presence of M. Anatole France among his cassocked audience, and he asked for the grace of God in the name of humanity, with subtle looks, knowing smiles, and auricular writhings. Finally, it appears that this sort of ecclesiastic coquetry was in style in 1900 and we welcome warmly these cut and dry words that meant nothing at all. (I am probably of too coarse a nature, too rough, but I vow that the well-read priest always horrified me. To visit the *beaux esprits* basically meant dinner in town– and one doesn't dine in town in the face of people who are starving to death.)

In short, the archbishop told us many anecdotes that he calls, according to his usage, "traits." I believe I understood. Unfortunately, I did not feel the same emotion that I had hoped. The monks are incomparable masters of interior life, no one doubts it, but the majority of these

well-known “traits,” like wines of the region, must be consumed on the spot. They do not travel well.

And, yes, perhaps...must I say it? Perhaps this small number of assembled men, living side by side day and night, creates without their knowledge a favorable atmosphere... I, too, know something of monasteries. There, I saw the monks humbly receive, face to the ground and without flinching, the unjust reprimand of a superior determined to break their pride. But in these houses that no outside noises trouble, the silence reaches a quality, an extraordinary, veritable perfection; there, the least quivering is perceived by ears with a sensitivity that has become exquisite... And the silences of the chapter room are worthy of an ovation.

(As well as an Episcopal warning.)

A Cross-Linguistic Comparison of Clark and Chase Sentence-Verification Task

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Abstract

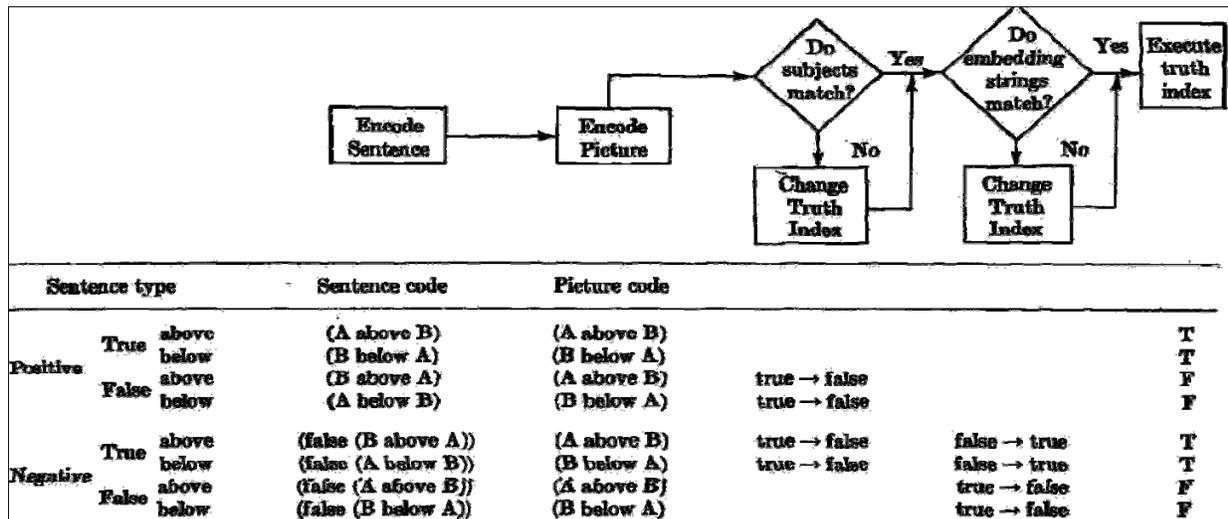
This experiment assessed the applicability of Clark and Chase's Independent-Stage Model to other sentence-verification tasks and other languages. The task involved comparing sentences against pictures and making decisions. Clark and Chase's classic experiment was modified by substituting "right" and "left" for "above" and "below". Additionally, the test was given in English and Arabic, considering the subject's primary language. The measured reaction times were analyzed for statistical significance. The English results supported the model. However, in Arabic, one interesting finding was observed which the model could not explain: a significant interaction between word & sentence type. The difference between positive and negative sentences was much smaller in the left condition compared to the right condition. Additionally, it was expected that English and Arabic would produce different results respecting "left" vs. "right" because English is a left-to-right language while Arabic is a right-to-left language. This interaction between word & language, however, was absent.

Introduction

People might find comparing sentences against pictures an easy task; however, research studies have shown that the mental process is far more complex than was once imagined. Understanding the process of sentence-picture comparison is a central part of many psychological and psycholinguistic studies, including concept formation, problem solving, language development as well as many cognitive tasks.

According to Clark and Chase (1972), comparing information from a pictorial source against information from a linguistic source requires that they both be represented, ultimately in the same mental format. This common format is an interpretation of the sentence and the picture encoded in terms of their elementary propositions. Based on these two assumptions, Clark and Chase constructed the Independent-Stage Model, which outlines a theory of how people compare sentences against pictures. The model consists of four identifiable stages: at stage (1), the sentence, such as *the star is not above the plus* is encoded; at stage (2) the picture, such as a picture of *a star above a plus*, is encoded; at stage (3) the two representations are compared; and at stage (4) a response is produced. The subject encodes the sentence in its prepositional form (*star above plus* and *it is false*) at stage (1), and at stage (2), the picture is encoded in this same general format (*star above plus*). At stage (3), when comparing the two representations, the subjects (*star/plus*) are compared first, followed by comparing the embedding strings (negatives). The comparison operations are to keep track of the truth index initially set to *true*, and changes to *false* whenever a mismatch is found. These extra operations of changing the truth index consume time, and the final truth index (*true/false*) is carried out to stage (4). Clark and Chase assumed that the times the four stages consume are additive.

Clark and Chase's Independent-Stage Model



Clark and Chase's model was designed to account mainly for sentence-verification tasks similar to that which was described above. To evaluate the validity of their model, Clark and Chase conducted experiments during which the subjects compared English sentences against pictures and made decisions. Their data supported the Independent-Stage Model.

The present experiment modified Clark and Chase's classic experiment using "left" and "right" instead of "above" and "below". Also, given the differences in linguistic characteristics and sentence complexity across languages (Akiyama), the test was given in English and Arabic to find out if the model holds true across different languages.

Methods

Participants: Twenty-six UMD undergraduate students completed the task, half of which were given the English version of the test while the rest took the Arabic version, depending on the participant's primary language.

Design: The instructor, Dan Swift, designed the computer program on which the test was accessible. The participants sat a comfortable distance from 15-inch LCD monitors to run the test. The level of brightness and contrast of the monitors were not preset. The participants were tested individually and at different times over the span of three days. All subjects participated in both the practice trials and the actual test. Only test scores of 75% correct or higher were included in the analysis.

Procedure: During the test, the participants were presented with displays each containing an Arabic or English sentence, such as *the star is left of the plus*, and a picture such as *a picture of a plus right of a star* appearing successively on the screen. On each trial, the participants were supposed to read the sentence and compare it against the picture, then decide if the sentence was true or false of the picture. Each display remained on the screen until the participant responded. The participants were instructed to press "1" if the sentence and the picture matched and "2" if they did not match. The participants were asked to make their decisions as quickly as possible while maintaining their accuracy. The participants' reaction times were automatically recorded by the computer.

The test consisted of 5 blocks of 16 trials each, for a total of 80 trials. Within each block, all possible combinations of left/right, positive/negative sentences, and true/false responses were completed. All participants were asked to run a few practice trials to become familiar with the task before completing the actual test.

Results

Table 1: Table of all mean reaction times (in ms).

	Arabic				English		
	Left	Right	Mean		Left	Right	Mean
Positive Sentences	3035	2598	2817		2960	3033	2996
Negative Sentences	3355	3845	3600		3798	3745	3772
Congruent	3172	3407	3172		3303	3297	3300
Incongruent	3245	3373	3245		3455	3482	3468
Mean	3195	3221	----		3379	3389	----

For both Arabic and English, the ANOVA results showed no significant main effect for word ($F(1,12) = .066, p > .05$) and ($F(1, 12) = 0.007, p > 0.05$), respectively. However, the main effect for sentence type was statistically significant in both Arabic and English, with the positive sentences being, on average, the faster ones, ($F(1,12) = 35.305, p < .001$) and ($F(1,12) = 41.632, p < 0.001$), respectively. Also, in both Arabic and English, the interaction between sentence type & congruency (true/false responses) was statistically significant ($F(1,12) = 5.133, p < .05$) and ($F(1,12) = 5.703, p < .05$), respectively. As can be seen in Figure 1, the difference between the means of the positive and negative sentences was significantly larger in the congruent condition relative to incongruent condition.

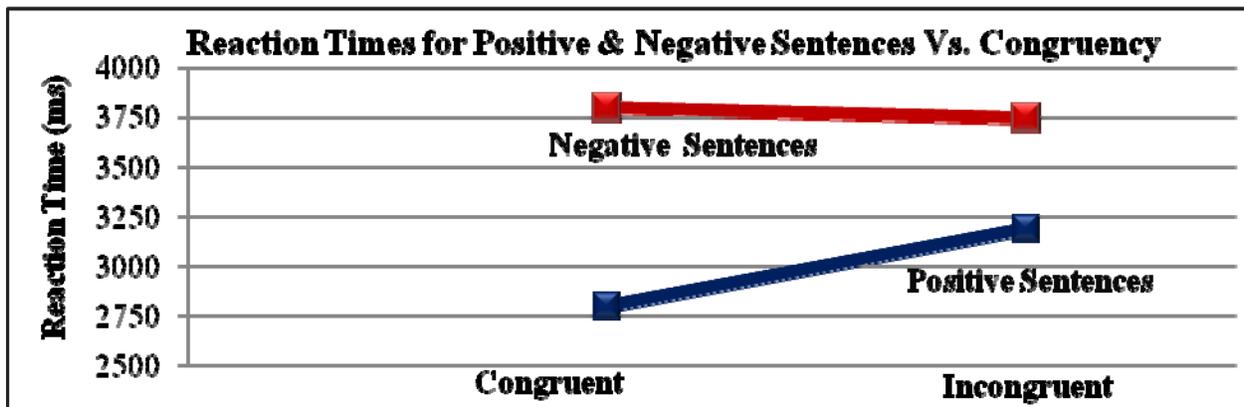


Figure 1: Plots of mean reaction times for positive and negative sentences vs. congruency in the English condition.

In the group results, the interaction between word & language was not statistically significant ($F(1,24) = .009, p > .05$). As can be seen in Figure 2, the difference between the English and the Arabic means in the right condition (168 ms) was very close to that of the left condition (184 ms), and the two plots are almost parallel.

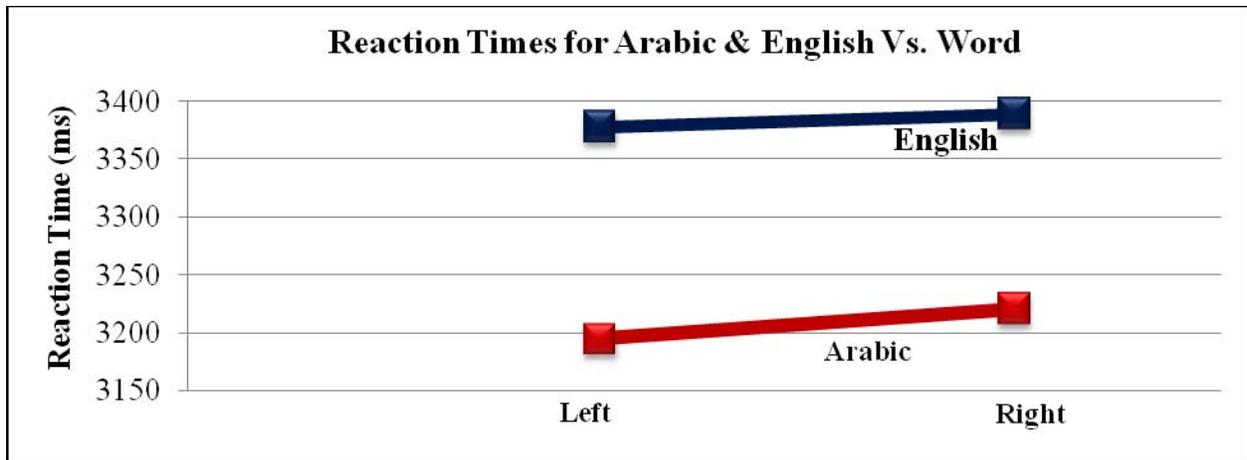


Figure 2: Plots of mean reaction times for Arabic and English vs. left and right.

Only in the Arabic condition was the two-way interaction between sentence type & word statistically significant ($F(1,12)= 10.846, p<.01$). Figure 3 illustrates this finding graphically, showing that the difference between the positive and negative means was much larger in the right condition (1247 ms) relative to the left condition (320 ms).

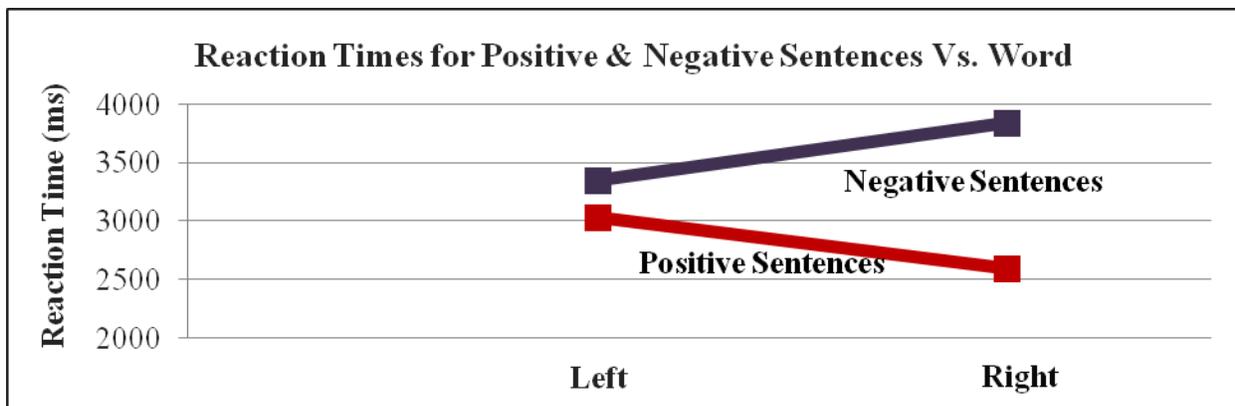


Figure 3: Plots of mean reaction times for Positive and Negative sentences vs. Word in the Arabic condition.

Discussion

The results from Clark and Chase's original experiment supported their theory on how people compare information from sentential and pictorial sources. Clark and Chase predicted latency differences resulting from stage (1). They noted that the coding speeds of positive and negative sentences would be different because positive sentences are linguistically simpler than negative sentences, and therefore, their mental codes are less complex. Consequently, positive sentences are encoded faster than negative sentences. Similarly, the current experiment predicted a significant main effect for sentence type in both the Arabic and the English versions. The results confirmed this assumption; the main effect for sentence type was statistically significant in both languages, with positive sentences being, on average, faster than negative sentences, supporting Clark and Chase's theory.

Based on their model, Clark and Chase also predicted a significant interaction between sentence type & congruency. The model shows that in the negative-congruent trials, the participants have to reverse the truth index twice when comparing the sentences against the pictures at stage (3), resulting in the longest reaction times before making decisions. On the other end, positive-congruent trials don't require changing the truth index at all, resulting in the shortest reaction times. This causes a large gap between the means of the positive and negative sentences in the congruent condition. The incongruent trials require reversing the truth index only once, resulting in mean reaction times falling between the highest and lowest means of the congruent condition. The results of the current experiment also supported this assumption. The interaction between sentence type & congruency, as shown in Figure 1, was statistically significant in the English condition. Similar plots showing a significant interaction between these two variables in Arabic were generated as well (figure not included), confirming the model.

Taking another linguistic characteristic into consideration, Clark and Chase predicted that the participants would encode sentences containing the word "above" faster than those containing the word "below". This is because English normally describes verticality using a reference point that is at the bottom of the described dimension. Extending Clark and Chase's theory to the current experiment, it was predicted that, in the English condition, the subjects would be faster in the left condition relative to the right condition. This is because English is a left-to-right language, and horizontality is normally described such that the point of reference is at the right of the described dimension. So *the star is left of the plus* is the normal description of a star left of a plus and is encoded faster. Consequently, encoding *the plus is right of the star* would require extra time because it is linguistically the more complex description of the same situation. On the contrary, in the Arabic condition, subjects should be faster in the right condition because Arabic is a right-to-left language and horizontality is normally described such that the reference point is at the right. So *the star is right of the plus* is the normal description while *the plus is left of the star* is the abnormal description of a star right of a plus. Given these linguistic characteristics about English and Arabic regarding "left" vs. "right", it was also predicted that the group results would show a significant interaction between word & language.

However, the current experiment found no significant main effect for word; the left and the right means were very close in both Arabic and English. Nor was the expected interaction between word & language statistically significant. This absence of effect for Word and lack of interaction between word & language (see Figure 2) probably resulted from the participants' lack of extensive practice before completing the actual task. Additionally, in the Arabic condition, the fact that the majority of the subjects, though spoke Arabic as their primary language, were bilingual (also spoke English fluently) might have been a confounding factor that added variability to the data.

Finally, one interesting finding resulted from the present experiment: a significant interaction between sentence type & word in Arabic. The difference between the means of the positive and negative sentences was much larger in the right condition compared to the left condition (see Figure 3). Clark and Chase's theory fails to predict or explain this finding, which was absent in the English condition. Perhaps this unexpected finding is the result of linguistic characteristics unique to the Arabic language, which Clark and Chase did not account for in their model.

In summary, the basic results of the current experiment supported Clark and Chase's theory on how people compare sentences against pictures. With certain modifications that account for differences in linguistic properties across languages, Clark and Chase's Independent-

Stage Model might be extendable to other sentence-verification tasks and other languages, such as Arabic. Confounding factors, such as bilingualism, and lack of extensive practice might have lead to some variability in the collected data. Future experiments can look at the applicability of the model to other languages and study possible ways to amend it.

Acknowledgment

Special thanks to Professor Dan Swift at the University of Michigan Dearborn for designing the computer program on which the test used in this experiment was accessible.

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Translation of Les identités meurtrières (Murderous Identities) by Amin Maalouf

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The present translation is an excerpt from Les identités meurtrières (1998) by the Lebanese writer, Amin Maalouf. Mr. Maalouf, who was born in Beirut in 1949, emigrated to France in 1976, where he has spent his adult life. Mr. Maalouf has been inspired by his own experience of growing up in a country that was ravaged by civil war, but what he says can apply to anyone who lives in a country that has multiple ethnicities. I was attracted to Les identités meurtrières because of its timeless nature and current relevance. He writes in French and Arabic, and his works have been translated into many languages.

The process of translation presents many problems to be solved and choices to be made by the translator. In her 2000 translation of this book, Barbara Bray has translated the title as the following: “In the Name of Identity: Violence and the Need to Belong”.⁴³ Her translation also serves as an introduction to the book, because of Ms. Bray’s decision to interpret as well as translate the title. Translation always involves interpretation because of the multiple meanings inherent in the words themselves. However, for my translation, I have stayed closer to the original French by translating the title as “Murderous Identities” because ‘murder’ is such a strong word. Murder is violent, of course, but murder suggests killing, which Ms. Bray’s word ‘violence’ stops short of doing.

Mr. Maalouf’s book is about identity, and his title is very evocative. Identities can kill, but whom do they kill? The title is vague, and the ambiguity fades throughout the pages of the book as his story unfolds. By leaving the title vague, I hope to impose no limitations on the meanings that will be revealed.

As another example of the choices that the translator must make, I will point to a sentence that uses the French word ‘tendu’: “C’est un dessin sur une peau tendue.” (36). The sentence seems simple enough. Literally, it means “It is a drawing on a skin that is ‘tendue.’” However, the word ‘tendu’ in French has multiple meanings that will be conveyed to the French reader, of which several are applicable to ‘skin.’ For instance, ‘tendu’ could mean ‘taut’, or ‘tense’, ‘strained’, ‘stretched’, ‘outstretched’, or ‘covered’. In my translation, I chose to use the word ‘taut’ because that word does suggest both stretched out tight, but to a tension so that it could break: “It is a drawing on a skin that is taut.” But in making this choice, I have had to sacrifice the sense of ‘covered’ (as with wallpaper), which is a wonderful image to connect to our bodies, since our skin is to our bodies as wallpaper is to walls, and is a fundamental aspect of our personal identities. Also, I have lost the sense of ‘outstretched’, which is a word associated with our hands and someone reaching out to other people. Mr. Maalouf’s simple sentence conveys multiple meanings through his use of the word ‘tendu,’ but the translation involves choices that limit.

⁴³ Bray, Barbara. *In the Name of Identity: Violence and the Need to Belong*. New York: Arcade, 2000.

One final example involves capitalization. Mr. Maalouf refers to racial identity, first using small letters on the words 'black' and 'white,' but then shortly after in the text, he switches to capital letters on these words (34). Capital letters on the words 'black' and 'white' are not normally used in English as they are with nationalities, but I retained his capitalization because of the emphasis that these letters place on the importance of racial identities in the United States, which is his reference.

The translation (chapter 3) is as follows:

One's identity is not given once and for all. It takes time to be constructed and to be transformed throughout one's entire existence. Many books have already said so, and abundantly explained this. However it is not without merit to emphasize it once again: The elements of our identities that are born in us are not that numerous- some physical characteristics, gender, color- and even then, for that matter, not everything is innate. Even though it is obviously not the social environment that determines gender, it is nevertheless this that determines the sense of belonging; being born as a girl in Kabul or in Oslo, does not have the same significance; a woman does not live her femininity the same way nor does she live any other aspect of her identity...

In terms of color, one could formulate a similar observation. Being born black in New York, Lagos, Pretoria or Luanda, does not have the same significance. One could almost say it is not the same color, in terms of identity. For a child born in Nigeria, the most determining element for his identity, is not the fact of being black as opposed to white, but rather being Yoruba, for example as opposed to being Haoussa. In South Africa, being black or white remains a significant element of identity. However ethnic belonging, -Zoulou, Xhosa, etc. - is at least as significant. In the United States, being a descendant of a Yoruba ancestor rather than that of a Haoussa is quite irrelevant. It is only for the whites - Italians, British, Irish or others- that ethnic origin is a determining factor for identity. Furthermore, a person with White and Black ancestors would be considered as "Black" in the United States, while he/she would be considered as a "metisse", or mixed race in South Africa or Angola.

Why the notion of mixed race is taken into consideration in some countries and not in some others? Why is ethnic belonging more determining in some societies and not in some others? One could, advance, for each case, various explanations which are more or less convincing.

However this is not what troubles me at this stage. I am only mentioning these examples in order to emphasize the fact that even gender and color are not "absolute" elements of identity. All the more reasons, all of the other elements are even more related.

In order to be able to measure what is in reality innate, there is an eminently revealing mental game: Imagine a baby taken out of his natural milieu immediately after being born, and being placed in a different environment. Let's compare then the diverse "identities" he/she could have acquired, the battles he would have to fight, and those he would have been spared.

Is there a need to say he would have no memory of "his" original religion, or neither of "his" country, nor of "his" language and that he might even see himself fiercely battling those who should have been his relatives?

It is so true that what determines the belonging of a person to a given group is essentially the influence of other people; the influence of those close to him, parents, compatriots, co-religionists- who try to make him theirs -, and on the other side the influence of those who have for a mission, to exclude him.

Each one of us must work his way between paths he is pushed into, and others that are either forbidden to him, or full of obstacles. He is not what he is right away. He does not content

himself with “becoming aware” of what he is, he gradually becomes what he is. He does not content himself with “becoming aware” of his identity, he acquires it step by step.

The learning starts at a very young age. Voluntarily or not, his surroundings, mould him, shape him, inculcate in him family’s beliefs, rituals, attitudes, understandings, their native language, of course, but also inculcate in him their fears, aspirations, prejudices, resentments, as well as diverse feelings of belonging as well as non- belonging.

Very early too, at home as well as at school or in a neighboring street, the first frictions arise. The “Others” make him feel through their words, their looks, that he is poor, or that he limps, or he is short, or swarthy, or too blond, or circumcised, or an orphan- those countless differences- whether they are minimal or major- which trace the outlines of each personality. They form the behaviors, the opinions, the fears, the ambitions, which often end up being eminently educational but can sometimes create everlasting pains. It is those pains that determine at every step of one’s life, the attitude of human beings towards their sense of belonging and the hierarchy within it. When one is brought down because of his religion, when one is humiliated or mocked at because of his skin color, or his accent, or his poor clothing, he can never forget that.

I have always insisted up till now on the fact that identity is made of multiple memberships, but it is absolutely crucial to insist on the fact that it is one entity and that we live it as a whole. The identity of a person is not a juxtaposition of autonomous “belongings,” it is not a patchwork. It is a drawing on a taut skin; if even one belonging is affected, it will cause the entire person to be shaken.

Often we have the tendency to identify ourselves however; through the belonging that is the most attacked. Sometimes, we do not have the power to defend it; instead we would conceal it deep inside, hidden away in the obscurity, waiting to take its revenge. Nevertheless, whether we assume this belonging, or whether we hide it, whether we secretly or loudly claim it, we still identify ourselves with it. And the most attacked belonging- skin color, religion, language, social class...- invades then the entire identity. Those who share it, are supportive to each other, similar to each other, they mobilize each other; they encourage each other and take it out on those “on the other side.”

As far as they are concerned, “maintaining their identity” naturally becomes an act of courage, and an act of liberation.

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Dickens' Narrative of Narrative: Narrative Desire and Futility in *Great Expectations*

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Great Expectations, more than any other novel in Dickens' corpus, is intimately concerned with the *act* of narration. In fact, I would go so far as to claim that the act of narrating (and the problems that come with it) has primacy over the narrative proper— that is, the story itself. To properly understand the novel, we must diligently attend to the comments made by the narrator, comments that lie wholly outside the act of mere story-telling. These comments reveal *Great Expectations* to be a narrative attempt to both expiate guilt and to give lucidity to a story that is in many respects incomprehensible and wholly incapable of being adequately depicted. Recognizing this, *Great Expectations* can be read as a representation of the futility of narrative—the futility of the narrator to properly express and convey the narrative to the narratee.

It is, incidentally, appropriate that we begin near the end of the novel, at the point in which we come closest to a convergence between character Pip and narrator Pip. As Pip is convalescing he grows increasingly desirous of relating to his father-figure Joe the whole of his narrative. Pip begins “If you would like to hear, Joe— ,” only to be quickly cut off by Joe who questions “why go into subjects, old chap, which as betwixt two sech must be onnecessary?” (347). It is this scene, I would argue, that marks the provenance of Pip's narrative. As Peter Brooks argues in his seminal work on narrative desire *Reading for the Plot*, “the need to tell [is] a primary human drive” (61). This scene vividly portrays this drive, the desire of Pip for an interlocutor, for someone to help to provide meaning to his story. His narrative, though, has been deemed by Joe as unnecessary, as having no value. Rejected by Joe, Pip must then look elsewhere to discharge the desire to tell, he must find an interlocutor. We can recognize the intense desire to tell in the fact that Pip does not accept this rejection, but continues to seek a listener; it is not a mere whim but rather an insistent drive. It is because Pip cannot fully comprehend his own story that he continues in his pursuit for an interlocutor.

I have alluded to Peter Brooks' *Reading for the Plot*; this work will be of central importance to my argumentation throughout. Brooks defines the narrative as always propelled by desire— specifically, the desire to reach the end. If in the beginning of the narrative we have desire, the narrative can only properly end when that desire has been discharged. The main interest for this study is the way in which Brooks applies the dynamics of desire driving plot to the act of narrating, what he terms “transaction and transference” between the narrator and the narratee. To Brooks “the motivation of plotting is intimately connected to the desire of narrating, the desire to tell... the need for an interlocutor” (Brooks 216).

In addition to Brooks, this work is also heavily grounded in the structuralist work propounded by Gerard Genette, whose *Narrative Discourse* seeks to establish those common and definable aspects that are a part of any narrative. Of specific importance to this study, is the “narrative situation.” According to Genette, the narrating situation has “two protagonists...the narratee— present, absent, or implied— and the narrator.” Accordingly, the narrating situation

can be defined as “the narrator’s orientation toward the narratee— his care in establishing or maintaining with the narratee a contact, indeed, a dialogue...” (Genette 255). In other words, it is the part of a narrative which recognizes its role as a story-teller, that acknowledges the story and freely interjects into that story. Genette terms this the ideological function, which is “an authorized commentary on the action” (256). Understanding both Genette and Brooks’ theoretical groundwork can help us to understand the defining relationship of narrator and narratee in *Great Expectations*.

There is in every narrator, according to Brooks, an essential fear of “the buried utterance...the tale entombed without listener” (221). It is the fear that their story will not be told that propels the narrator. The desire to tell corresponds with the fear of narrative entombment. This is certainly apparent in Pip’s narrative, no more so than when he states that “far more terrible than death, was the dread of being misremembered after death” (317). Pip’s narrative is thus a guarantee that he will not be misremembered— or at least that he will be remembered in the way that he chooses. The narratee is Pip’s assurance that his narrative will not be entombed. But it seems we can also derive an interesting extension to Brooks’ idea: that it is not simply a fear of entombment, but also a fear an improper burial, if you will. Not only does he fear his story going untold, but he also fears it being told improperly. If there is to be a narrative, it must be narrated by himself. It is his story and, therefore, it can only be properly told by himself; any other narrative of Pip is likewise an entombment. The telling of his story necessarily gives him access to the narratee, the analyst, whose distinct role is to reconcile the narrative. The narrator, first and foremost, must convince the narratee that it is worthwhile to listen to his narrative (where Pip has failed with Joe).

I will take an example from the beginning portion of the novel, to identify what I would term the narrator/narratee courtship. In a tremendous example of this dynamic relationship, narrator Pip directly instructs the narratee, “pause you who read this, and think for a moment of the long chain...that would never have bound you, but for the formation of the first link on one memorable day” (60). In other words, it is an assertion that his narrative has value, that it can be applied. It is not merely an interesting and diverting tale, but it is also something that we can use to make meaning of our own lives. It has the ideological effect of positioning the narrator and narratee as peers, capable and prone to the same types of experiences and emotions. Desire, for the narratee, as narrator Pip seems well aware, lies in the guarantee of the application of meaning-making. And this, I would contend, is what compels the reader to engage not *solely* in the reading of the narrative, but in the *active* analysis of the narrator through his story. Perhaps more than the narratee needs the narrator, the narrator needs the narratee.

But we should not assume that this relationship is a completely innocuous one. In fact, Brooks describes it as a “forcing of attention, a violation of the listener” (236). Even further than a violation, he contends, there is a narrative “desire to implicate one’s listeners in a taint one can’t live alone with” (261). It is narrator Pip’s attempt to expiate his own guilt that leads to this forcing upon, this violation, and this tainting of the narratee. Musing upon his own personal sense of shame and guilt, narrator Pip boldly asserts that “throughout life, our worst weaknesses and meannesses are usually committed for the sake of the people whom we most despise” (169). Narrator Pip, as before, assumes that the narratee is like him. Narrator Pip sees human nature through the lens of his own experience. His own experience dictates this axiom, but he imposes it upon the narratee. Again, it is an instance in which he assumes himself as the standard for human nature. We must recognize the ideological function in play here, in which the narrator subtly excuses his own faults by characterizing them as a natural part of human nature. It is an

attempt to expiate his guilt by regarding his faults as essentially inevitable, not just inevitable for him but for every human being. This seems to be a fitting example of the narrative desire to taint, particularly in the way that it subtly assumes upon the narratee Pip's own wretched state. This "bad side of human nature" (117) that character Pip attributes to Biddy and the wiser narrator Pip is able to recognize in himself, is the taint that narrator Pip forces upon the narratee.

It is here a central function of the narrator to attempt to relieve and expiate his own guilt and shame by forcing it upon the narratee. It is the narratee who becomes infected, who now is able to discern this bad side of human nature, the bad side of human nature which narrator Pip is forced to regularly live with. It is the release of an energy, an energy that is then transferred upon the narratee. The burden, thus, shifts from the narrator to the narratee; the taint is now for the narratee to deal with.

Throughout the novel there are metanarrative assertions and admissions by narrator Pip that he is wholly incapable of adequately expressing his narrative, particularly in sense-making. There is, throughout *Great Expectations*, an overwhelming sense of the inexpressible. Narrator Pip displays a narrative trait that Brooks describes as "constant reference to the inadequacy of the orders of meaning" (238). To return to the idea of transference, this means that the narrator must seek out the narratee in order to make meaning of their own story. One rather striking and dramatic example is narrator Pip's somewhat frantic address to the narratee in attempting to justify his undying desire for Estella: "why I hoarded up this last wretched little rag of the robe of hope that was rent and given to the winds, how do I know! Why did you who read this, commit that not dissimilar inconsistency of your own, last year, last month, last week?" (285). It is particularly compelling in the way that narrator Pip seems to recognize the futility of his own attempts at making meaning, as seen in the exasperated and exclamatory "how do I know." In frustration, narrator Pip, rather than directly seeking interpretation, regresses back to tainting the narratee, again attributing his own actions to the narratee. But the singularity of individual experience prevents any sufficient connection to a general human experience. The frustration and regression back to tainting reveals narrator Pip's growing awareness of this fact. It is, what I would term his narrative anagnorisis, his realization of the narrative inability to connect with the narratee. The result of this recognition is an almost spiteful recoil from it. It vividly reflects his frustration with his own narrative ability, a stubborn denial of what has become evident to him.

This is just one example among so many of what I would label metanarrative admissions of incompetency (and one that we shall return to in concluding). It reveals the narrator's demand for transference, a frustrated admission that his telling is not enough, but that it is essential for the listener to play the role of analyst. It is a relationship that Brooks describes as the "dynamics of transference in which the reader is solicited not only to understand the story but to complete it" (260). Narrator Pip cannot reconcile himself to his story precisely because he can not make sense of the story on his own. There is no meaning in narrator Pip's telling, it is a mere summing-up of the events; it is thus up to the narratee to make this meaning.

In another instance of metanarrative commentary narrator Pip refers to his "slight narrative" (335). In terms of the amount of pages and bulk of narration, it is difficult to assert that the narrative is slight in content. What then can we make of this metanarrative reference to his narrative as slight? It seems evident that the connotations of the word must be qualitative rather than quantitative. This seems to reveal the extent to which narrator Pip feels he has been able to effectively express his narrative. It represents his ultimate dissatisfaction with his narrative attempt. The narrative could conceivably take on four-hundred more pages and it would still be slight to narrator Pip. The narrative is slight because it has failed to develop a necessary

connection with the narratee. Narrator Pip has failed in his attempt to reconcile himself to his own history as well as to create an understanding between himself and the narratee.

Pip significantly tells Biddy that he has “forgotten nothing in [his] life that ever had a foremost place there, and little that ever had any place there”(356). Here we should pay attention to what Pip (a Pip proximate to narrator Pip) does not say. While he remembers the events and that they must be significant, he does not know what meaning and significance to attach to them. He knows the events, but not the sense of them. This is why transference and transmission is so significant for the narrator in this narrative. The narratee must do for narrator Pip what he has been unable to do, to understand and reconcile him to his narrative. So from this we may assert that, in *Great Expectations*, the desire to tell is intimately connected with the desire to be ‘cured.’

And so it seems, rather significantly, that we have come right back to where we began this analysis: Pip recovering from his illness, his gradual convalescence. It seems to be of great import that this desire to tell should take place precisely as Pip attempts to convalesce from his illness, for this Pip (again very near to merging with narrator Pip) realizes that only through the telling of his narrative (with an interlocutor) can he ultimately be cured. It is in the hands of the narratee to finally bring sense and lucidity to the bewildering narrative.

But if the narratee can make meaning, it cannot reach narrator Pip. We should return to Pip’s frustrated admission of narrative incompetency (“how do I know”) and subsequent tainting (“why do you”). This quote, I would argue, shows the frustration of having a detached interlocutor, a narratee who can interact with the narrative but not with the narrator. It is a recognition of the futility of his narrative. Perhaps we may extend Brooks’ idea of desire for an interlocutor to the desire for the *ideal* interlocutor, for the interlocutor that Pip most desired—Joe— has rejected the value of his narration and has consequently stifled Pip’s ability to reconcile himself to his narrative. Thus it is necessarily an inadequate narrative for Pip, it is not the narrative he wanted it to be. If the act of narrating has alleviated the desire to tell, it seems to have failed in the desire to cure. Ultimately, the taint is shared but not alleviated.

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Villain or Victim: The Role of Shylock in Shakespeare's *The Merchant of Venice*

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During the Renaissance time period, Jewish and Christian relationships were incredibly strained. William Shakespeare's play, *The Merchant of Venice*, is set during this time and deals with the complexities of this intense contact zone. Feelings of anti-Semitism were so great during the Renaissance that all Jews were forcefully banished from England. They were forced to a few regions across Europe, one of these places being Venice, Italy; thus, the reason for setting the play in Venice. Jews were forced into becoming moneylenders and bankers all throughout Europe; this is because Christians were forbidden by their religious beliefs to take interest on money that they loaned out, making banking an unprofitable profession for Christians. Jews became the bankers and lenders because they were not forbidden by their religion to do so, and it was the only really profitable occupation that they were allowed to have. Since they were the only lenders and financiers, they invested into a lot of Christian enterprises. While the Christians did accept loans from Jewish financiers, that did little to improve relations between the two groups. Christians attacked Jews for taking interest on loans, even as they took loans from them. However, this was the only way many Jews could make a living at the time; they had no choice but to charge interest in order to survive.

The historically complex relationships between Christians and Jews are accurately portrayed in Shakespeare's play, *The Merchant of Venice*. The character of Shylock, a Jewish moneylender, is seen as an outsider who has suffered an incredible amount of pain and humiliation at the hands of Christians. In response to this Shylock plots to obtain vengeance; his response escalates after suffering the mental strain of his daughter's betrayal and flight. Though Shylock is certainly spiteful, and villainous in his own right, he is not without some justification of his actions. In his villainy there is still a great level of humanity in his pleas to be recognized as a human being, one with whom readers cannot help but sympathize. While the other characters in the play view Shylock as cunning, treacherous, and villainous; he is in fact, just a misguided man seeking fair and equal treatment.

While Shylock is certainly the villain in this play, he in no way starts out as villainous. He is at first a very reasonable businessman who is the victim of bigotry. "Three thousand ducats for three months; and Antonio bound," (1.3.9-10). Here Shylock is looking over a proposal from Bassanio to borrow money for a trip he plans to take. Shylock and Antonio have a long history of bitterness toward one another, but even in this Shylock only questions the proposal from a purely business aspect. "Yet his means are in supposition: he hath an argosy bound to Tripolis, another to the Indies [...] and other ventures he hath squandered abroad," (1.3.15-9). Shylock's questions are because all of Antonio's wealth is invested in ships that are all out at sea. This causes concern because if all his wealth were lost to sea, Shylock would have no way to get paid. Even in spite of this fact Shylock agrees that he can take the bond, because despite his hard feelings toward Antonio, he knows that he is a good and reliable businessman, "The man,

notwithstanding, sufficient. Three thousand ducats- I think I may take his bond,” (1.3.22-4). Shylock only asks that he be allowed to speak with Antonio first.

Shylock’s harsh feelings to Antonio reciprocate the feelings of Antonio towards him. Shylock is a complex man but with simple motives to treat others as they treat him. “He hates our sacred nation, and he rails, even there where merchants most do congregate, on me, my bargains, and my well-won thrift, which he calls interest. Cursed my tribe, if I forgive him!” (1.3.43-7). These feelings of bitterness are seen in a much more rational light, when Shylock further explains his reasoning behind such feelings, he confronts Antonio, “You call me misbeliever, cut-throat dog, and spit upon my Jewish gabardine, and all for use of that which is mine own” (1.3.109-11). Antonio dislikes Shylock, because he is a Jew and charges interest on his loans. However, in these times that is the only way for Shylock to earn a living to make money and support his family. Though Antonio hates the idea of borrowing and lending money with interest he is more than willing to compromise this morals to help his friend.

When faced with these accusations, instead of recognizing the fallacies of his logic, an unapologetic Antonio continues to berate Shylock. He even goes so far as to challenge him, saying not to lend the money to him as a friend but rather as an enemy, so he will feel no guilt in exacting the penalty for failure to uphold the bond. It is here that Shylock sees his opportunity to finally get his revenge. Shylock proposes that, on failure to repay the loan, he would be due one pound of Antonio’s flesh. This is obviously a ludicrous proposition, it is meant to put more fear and doubt into Antonio than to be taken in its literal sense. He even states that he would gain nothing by actually taking the flesh, “If he should break his day, what should I gain by the extraction of the forfeiture?” (1.3.160-1).

Shylock’s motives were at first just a twisted joke to toy with his longstanding rival. However, after the betrayal of his daughter, his revenge for Antonio was all he had left; it is here that we see a dramatic shift in the motives of Shylock. When Shylock leaves to a business dinner with Antonio and Bassanio, his daughter Jessica elopes with Lorenzo, another friend of Antonio, running away and taking a good portion of Shylock’s wealth. When Shylock returns to discover this, he becomes drunk with rage, traveling the streets in an uproar shouting, “My own flesh and blood to rebel” (3.1.29). It is in this moment of wrath in which we see the definitive change in his motivations. He holds closer to his bond with Antonio than ever before, for he sees that his revenge is all he has left. “Let him look to his bond! He was wont to call me usurer, let him look to his bond! He was wont to lend money for a Christian curtsy, let him look to his bond!” (3.1.39-41). The bond now becomes more than simply a twisted joke, it becomes Shylock’s last avenue to return the wickedness of the Christian’s actions against his people back onto them. The upholding of this bond would become retribution for the entirety of his people against the injustices suffered at the hands of the Christians. It was at this point that the bond was now truly filled with murderous intent.

Even in this rush of malice, we can still see the evidence of Shylock’s humanity. Shylock in an impassioned speech cries out for equality among the Christians. He professes his humanity and wish to be treated the same, free from the pains of hypocrisy. “If you prick us, do we not bleed? If you tickle us, do we not laugh? If you poison us, do we not die? And if you wrong us, shall we not seek revenge? If we are like you in the rest, we will resemble you in that” (3.1.53-6). It is in this speech that we truly see all the intricacies of the psychology driving Shylock. “Revenge. If a Christian wrong a Jew, what should his sufferance be by Christian example? Why, revenge. The villainy you teach me, I will execute, and it shall go hard but I will better the

instruction” (3.1.57-61). In this moment of passion we see his simplistic but logical outlook on human relationships, to give back that which he has for so long received.

While Shylock in his rage definitely becomes a villain near the end of the play, that in no way implies that he is without justification. Shylock’s true motive or goal from the very beginning has been to be seen as a human being, to be treated as an equal. Shylock is victim to much the same discrimination that was commonplace in those days towards Jews. Jews were immensely criticized for their usury of money; usury being the loaning of money with the taking or taxing of interest, so that the lender could make a profit. Christian doctrine taught that usury was a sin, thus preventing Christians from becoming bankers and moneylenders, whose sole source of income was profit from the interest on loans. Seeing that Christians could not do the job, the Jews—having nothing in their doctrine to forbid them—became bankers and moneylenders, because it was the only really profitable job the Christians allowed them to have.

Shylock’s original plan for vengeance was to simply put fear and discomfort in his rival, Antonio. Shylock experienced a dramatic mental breakdown that caused his entire perspective on his strained relationship with Antonio to magnify. He went from victim to victimizer. Shylock, though being a complex man, is one who has simple motives. He wants to do unto others whatever it is they do unto him. He was victimized by Antonio in the form of name calling and being spit on, and so he tries to take revenge—revenge that goes too far and gets carried away. Shylock is someone deeply misunderstood, most view him as cunning, treacherous, and evil, but at the core he is someone who just wants to be treated fairly. Shylock, villain or victim? You decide.

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The Dynamics of Responsibility and Irresponsibility in Goethe's *Faust*

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Finally completed in 1832, *Faust* is the lifework of Johann Wolfgang von Goethe. The basic plot of this drama originated from the *Faust Volksbuch* (1587) and street theater performances and is now a prominent piece of world literature, studied in most college-level survey courses on world literature. While *Faust Part One* focuses on Faust's soul, his relationship with Mephisto and Gretchen, and the various interactions he has with minor characters, *Faust Part Two* was certainly more provocative for his time and highlights political and social dilemmas.

Responsibility and irresponsibility, along with their consequences, both play an important role in Goethe's *Faust*. Popular topics that Goethe researchers have covered include patterns and structure in Goethe's writing (Jantz), science (Shafer) and philosophy (Hendel). However, none have delved into the roles that responsibility, or the lack thereof, play in the lives of humans. This paper argues that an intricate dynamic between responsibility and irresponsibility exists and functions as the underlying cause for death and destruction as well as resurrection in the first part of Goethe's tragedy. Mephisto and Faust divert the responsibility for their actions to each other, whereas Gretchen and her brother assume responsibility for their own deeds and those of others. In several dramatic dialogues, the question of responsibility appears ambiguous and different arguments for assigning responsibility to one character or another can be made. This paper takes a fresh look at the religious, philosophical and ethical dilemmas presented in *Faust* based on the analysis of the dynamics of responsibility and irresponsibility.

It begins with God, but not the God of the Bible, even though "Goethe's Prologue in Heaven is modeled on the first two chapters of the Book of Job" (Kaufmann 23). Faust's God, however, does not seem overly concerned with the welfare of his creation. When Mephisto, Goethe's devil figure, wants to make a bet with God that he can derail Faust from his virtuous path, God gives Mephisto only one condition: that he does not kill Faust. God says, "As long as [Faust] may be alive,/ So long you shall not be prevented,/ Man errs as long as he will strive" (88). It seems God does not care about the quality of Faust's life as long as Faust chooses him at the end of it. But what about the consequences for Faust's sins? And is it fair when Mephisto lies to and cheats Faust? God, as Faust's creator and judge, is responsible for providing guidance. When God gives Mephisto free license to misguide Faust, does that then leave God and Faust blameless?

Mephisto is extremely shrewd. Through his bet with God, he has taken responsibility for Faust, but he has a plan that will place all blame on Faust in the end. Having no respect for God or man, he desires only to play with them, while taking no blame for his actions. After his conversation with God, Mephisto says, "I like to see the Old Man now and then /And try to be not too uncivil. It's charming in a noble squire when, /He speaks humanely with the very Devil" (90). When introducing himself to Faust, Mephisto never says exactly who he is, but Faust

knows and somehow reasons that because Mephisto has not directly said his name and business, it is not quite so bad to converse with the devil. That Faust recognizes him, without his having to tell him, is what Mephisto expects. Mephisto uses all of Faust's weaknesses to his advantage. He uses Faust's vanity and leads him to believe that he has control of the situation. He tells Faust that he cannot leave without Faust's permission, but when he wants to leave Faust he simply calls a spirit who sings Faust to sleep, and leaves. When Mephisto returns, he uses the truth that he cannot enter without Faust saying "Come in" three times (172) to give Faust the feeling of control again. While true, because the devil cannot come in without invitation, Mephisto uses whatever means necessary to manipulate Faust. Faust begins to give his permission the very first time he meets Mephisto. At first he does not want Mephisto to go away, because he is curious to hear what he has to say. Mephisto succeeds in capturing Faust's interest in his power and magic. Every word he speaks has a goal and is according to his plan. Mephisto says, "Omniscient I am not, but there is much I see" (176). When they make the pact Faust says, "And in return, what do you hope to take?" To this Mephisto replies, "There's so much time—so why insist?" (180). When they come to an agreement, Mephisto urges Faust to sign in blood, and though Faust assures him that his word is enough, though there is ambiguity, it would seem that Mephisto gets his way and has Faust's signature in blood. Mephisto believes that he will get Faust's soul in the end, while Faust rationalizes that he will never experience the moment of happiness he has bargained for and, therefore, will never be held responsible for his end of the bargain. This contract in blood strongly proves Mephisto's desire for finality in their deal, yet Faust rationalizes his pact with the devil as a game, as something outside the realm of actions with consequences. The reader recognizes Mephisto's experience and the likely possibility that he has done this before.

In a later scene, when Mephisto disguises himself as Faust and plays with the mind of a student seeking Faust's advice, he reveals his perspective on humans: they are pawns in his game of chess. When making his deal with God, Mephisto even goes so far as to say, "I feel as does the cat about the mouse" (88) in reference to mankind. For Mephisto it is not about blame or consequences, or if it is: the more guilt and blame, the better and the more people whose lives are destroyed, the better. It is merely a game to him and his triumph comes with every false step and every decision against God. Though to him it is all a game, does it really mean that he is blameless? Is there something for which he should be held responsible or are there consequences that he alone should bear? Mephisto believes not, rationalizing that it is his job and though he persuades and manipulates, he does not make the decisions for people.

Faust has studied long and hard in his lifetime and has much knowledge, but not as much life experience. He begins to believe he is only just as smart as he was when he began his studies. He speaks of two souls in his breast (88). And the conflict between these two is his greatest weakness. He says, "Two souls, alas, are dwelling in my breast, /And one is striving to forsake its brother./Unto the world in grossly loving zest, /With clinging tendrils, one adheres; /The other rises forcibly in quest" (145). He is familiar with books, but knows little of love and matters of the spirit. He recognizes that he would rather die than live without experience and emotion. These "two souls" cause dangerous turmoil. He is ready to experience new things without giving thought to the consequences. With so much in his heart and mind, he makes the bet with Mephisto. His eagerness turns to greed as he fails to remember that one day he will have to pay with his soul. One of the less ambiguous events in *Faust* is when Faust knowingly makes this deal with the Devil and, though doubting the consequences, he is unquestionably the one responsible for his decision.

The person who suffers most from Faust's actions is Margaret, who is also known as Gretchen. When she first meets Faust, she is called Margaret. She is a caring woman who looks after her aging mother and attends church regularly. Upon first meeting Faust, she proudly dismisses him when he asks to escort her home. Faust says, "Fair lady, may I be so free, /To offer my arm and company?" To this she replies, "I'm neither a lady nor am I fair, /And can go home without your care" (256). Then, Mephisto assures Faust that it will not be long before she accepts Faust's gifts and attention. Even though Mephisto tells Faust that he has no power over such a virtuous creature, Faust demands that Mephisto use his powers to seduce Margaret into falling in love with Faust. Sure enough, Margaret is soon in love with Faust. Coincidentally she also begins to go by the name Gretchen, a diminutive form of Margaret. From the very beginning, Gretchen dislikes Mephisto. She sees that he has influence over Faust and notices that her own emotions are affected when he is near. In a conversation with Faust about it, she says, "...Alas, my heart and feelings are choked when he comes, too" and, "when he only comes our way, /I feel I do not love you any more; /And where he is, I cannot pray. /It eats into my heart. Oh you, /Dear Heinrich, must feel that way, too" (330). She sees through Mephisto's facade and his bad influence on Faust disturbs her. She sees that Faust has lost his respect for God and Christianity and believes that this is a result of Mephisto's influence (324-332). The rules and traditions of society support her opinion. Her mother is strict and raised her with rules and moral standards that she must follow. Meanwhile, Faust believes he does not need to believe in anyone or anything. In the beginning he wanted to believe in God, and even studies theology, but the longer he is with Mephisto, the less he believes in or cares about anything. Gretchen fears that Faust will be lost and feels a duty to lead him back to Christianity. She wants him to accept God and respect the holy sacraments. Thus, she follows her mother's example, who, when Gretchen receives jewelry from Faust, takes it and gives it to the Church saying, "We'll give it to the Mother of the Lord, /And later get a heavenly reward" (272). Thus, Gretchen's mother takes responsibility for her. Until this point, Gretchen has never concerned herself with responsibility, because her mother has always assumed it for her.

In spite of her inner turmoil over Faust's lack of faith, she trusts Faust much more than she distrusts Mephisto. The more she trusts Faust, the more she disregards her upbringing. When Faust gives her drops and says, "Here is a bottle. /Merely shake, /Three drops into her cup, /And she won't easily wake up" (330), she is so distracted in her love for Faust that she believes the drops will simply cause her mother to sleep deeply. She trusts Faust, as she does not know where the drops came from. But Faust knows that Margaret's mother must die from the drops. Though Mephisto bears the responsibility of providing the idea and the poison, Faust is responsible for going along with it, and Gretchen is responsible for blindly trusting Faust's motives. The plot thickens. After her mother's death, Margaret discovers that she is pregnant. When her brother finds out that she is pregnant, he is ashamed of her. In spite of his disappointment, he takes responsibility for her and challenges Faust, holding the latter responsible for his sister's downfall. He is mortally wounded and as he is dying and Margaret finds him he tells her, "I tell you, do not bawl at me. /When you threw honor overboard, /You pierced my heart more than the sword. /Now I shall cross death's sleeping span /To God, a soldier and an honest man" (352). Other than Faust, Margaret now has no one. The irony is that *because* of Faust, everyone in her family and whom she loves is dead. When Faust does not even consider marrying her, she is hopeless and lost. With no hope for her own future and the survival of her child, she kills her own child. Due to these events, Margaret goes insane with the

realization of all that she has done. She fully accepts responsibility for her actions as well as Faust's, bearing the consequences, while forgiving and still loving Faust.

Black magic is only as powerful as people allow. When people remain free of guilt, black magic can not come near. When people chose to do wrong, they invite Mephisto and his magic into their souls. When presented with the choice, Faust made the decision without realizing that it would affect others' lives as well. Margaret is given the same choice and follows Faust because of her love for him. In the end, she does not cast blame, but accepts her guilt and punishment. When she surrenders to God's judgement, she is saved. Faust, however, as much he regrets his actions, does not repent. And yet, he is also saved. "No one can deny that Faust ultimately arrives in Heaven—that is not an issue—but how he gets there (speaking figuratively, of course), and whether he deserves to get there, and what lies behind the problematic ambiguities attaching to these issues remain fascinating and largely elusive points of inquiry" (Hoelzel 1). Of course, we can not be completely sure what Goethe meant when he wrote that Faust was saved without repentance. As for God and Mephisto, much remains ambiguous in the consequences of their actions. One can discern that they each manipulate their own rules to get the results they desire. This is illustrated in Mephisto's usage of the rules about his coming and going to manipulate Faust into a binding contract. This comes as no surprise. However, in God's case, He allows Faust to be saved even though he does not repent as Margaret does. Are God and Mephisto to be held responsible for the circumvention of their own rules, or applauded for their shrewd navigation of them? What we are presented with is the idea that mankind chooses how to respond to given laws, whether to disregard or obey them, and what final consequences should result from those choices.

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Mixed Metaphors: Synesthesia in Nineteenth Century French Poetry

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Although currently classified by psychologists as a neurological phenomenon, synesthesia was a concept used extensively in the 19th century literary works of poets Charles Baudelaire and Arthur Rimbaud. This historical precedent brings to light the universality of synesthesia in the human mind. Although synesthesia is a rare psychological phenomenon in theory, the adaptation of this phenomenon as a literary device is by no means foreign upon further examination. According to Ihab H. Hassan, professor of literature at Wesleyan University, “[Synesthesia] levels conventional barriers between our senses and permits a purposive commerce between the various areas of our perception.” (Hassan). Examples of synesthesia found in literature include hybrid metaphors that take two, or more, sensations from different sensory faculties and combine them with each other to create complex symbols. By creating liaisons between the emotions suggested by different sensations such as the taste of colors and the smell of sounds, synesthesia converts abstract and mediocre literary pieces into ones filled with rich symbolism and interest for the reader.

The literary period of Romanticism during the nineteenth century was an open door for writers and artists to freely experiment with the powers of emotions and sensations within their works. It was inevitable, therefore, that they should establish a new way to express the ideas that they wished to emphasize. This new way became known as the Symbolist tradition, within which synesthesia found a home (Hertz). By using synesthesia, writers were able to employ all the mental faculties of their audiences with the purpose of creating a more complete effect.

In his article entitled *Synesthetic Art – An Imaginary Number?*, Paul Hertz describes Charles Baudelaire’s *Correspondences* as being one of the most important works incorporating the concept of synesthesia as a literary device (Hertz). The poem combines the sensations of sight, touch, sound, and smell in a personification of Nature. The title itself announces to the reader from the very beginning that synesthesia will play a major role in the piece. As is described in the anthology *Poèmes Pièces Prose*, on the subject of *Correspondences*, “This title does not make an allusion to a letter or correspondence between two people, but rather signifies the relationship between things and places as a personification of Nature, like a “Temple in which living pillars give voice to confused words” (Schofer, 82). The title may also imply a conversation, like a letter, between the faculties of Nature personified. Baudelaire writes:

*“Like prolonged echoes mingling in the distance
In a deep and tenebrous unity,
Vast as the dark of night and as the light of day,
Smells, sounds, and colors correspond.” (Schofer, 82)*

Evident again in this bit of the poem are an abundant number of examples of synesthesia. In reality, smells, colors, and sounds are not alive and therefore are incapable of corresponding with each other as is suggested in the poem. Consequently, these sensations become symbols. Paul

Hertz insists however, that it cannot be assumed that Baudelaire had thought that nature was endowed with any type of spiritual power. In fact, writes Hertz, Baudelaire showed a strong belief that nature was indifferent to the human condition in his works *Elévation* and *Spleen II*. (Hertz)

Another poet famous for his use of synesthesia was Arthur Rimbaud. Although present in his most famous work *Le Bateau Ivre* (*The Drunken Boat*), in verses referring to a milky sea infused with stars, suns of silver, waves of pearl, and skies of red-hot coals, synesthesia is used most prevalently in his poem, *Voyelles* (*Vowels*.) Here, Rimbaud assigns each vowel in the alphabet a respective color. “A” is black, “E” white, “I” red, “U” green, and “O” blue. Rimbaud then elaborates upon his reason for giving each vowel its respective color. For example the stanza concerning the letter “U” reads:

*“U, waves, divine shudderings of viridian seas,
the peace of pastures dotted with animals, the peace of the furrows
which alchemy prints on broad studious foreheads”*

It is as if each letter has its own story for Rimbaud. Although the reasons for these associations were never noted, the importance that Rimbaud places upon each letter shows an almost fanatical love for language. If each letter, being the smallest element within a language, has a history full of its own symbolism, how much therefore must words, or sentences hold within themselves?

It is impossible to know whether or not Rimbaud in reality had synesthesia in the medical sense of the word, or if his associations were arbitrarily invented for this poem. The type of synesthesia present in the poem, wherein letters are attributed respective colors, would be scientifically referred to as grapheme-color synesthesia (American Synesthesia Association). One fact which causes doubt as to the validity of Rimbaud’s synesthesia is that, in modern studies, the majority of those with grapheme-color synesthesia associate the letter “A” with the color red; Rimbaud, however, assigned black as “A’s” color. This is not conclusive evidence since no two people with synesthesia are alike in their experiences, but it does call into question the level of honesty within which Rimbaud was weaving his symbolism.

Although we can never know if Baudelaire or Rimbaud were in reality affected by clinical synesthesia, their utilization of it within their works is far too evident to ignore as coincidence. From Baudelaire’s use of complex images created by the combination of different senses to the poems of Rimbaud wherein abstract traits are assigned to mundane objects and ideas, these 19th century uses of synesthesia show that, although the theory of this phenomenon seems abstract, synesthesia is, and has always been, an omnipresent concept in our communal imagination.

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Creative Therapy in Treating Adolescent Obsessive-Compulsive Disorder: A Proposed Therapeutic Treatment

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Adolescent Obsessive Compulsive Disorder (OCD) has attracted a great deal of attention in recent years as a persistent and ever increasing problem amongst today's youth. OCD is an anxiety disorder which may include obsessions, compulsions, or both (Greene, Nevid, & Rathus, 2006). Obsessions are characterized as intrusive thoughts, ideas, or desires that reoccur frequently within a person. Recently conducted research involving OCD symptomology has found that 25 percent of adolescents report having some excessive and uncontrollable worry (Freeston, Gosselin, Laberge, Ladouceur, Langlois, & Lemay, 2007). Compulsions are the ritualized behaviors an individual feels they must carry out in attempt to alleviate the effects of obsessions and are often performed in response to obsessive thoughts. Both obsessions and compulsions may interfere with day-to-day functioning of the individual, causing them to feel stressed and tormented.

Current treatments for OCD include Cognitive-Behavioral therapy and pharmacological treatments. Pharmacological treatments are the most common though alternatives are sought because of the mounting concerns of practitioners over the use of pharmacotherapies. Many of these medications have not been on the market for long and their long-term effects on a patient have not yet been fully tested. Researchers therefore emphasize the importance of developing new and different treatment strategies. Abramowitz (1997) conducted a study that found that increases in efficacy due to therapist-guided exposure therapy were greater than the efficacy of pharmacological treatments. An important finding was that Cognitive-Behavioral techniques were just as effective with the assistance as they were without the assistance of pharmacotherapy (Abramowitz, Bux, Feeny, & Franklin, 2002). What follows is a description of a proposed non-pharmacological therapy treatment for OCD that uses some of the same techniques that are so effective in Cognitive-Behavioral therapy

Proposed Theory and Practice in OCD Treatment

It is hereby proposed that adolescent OCD is the result of being "trapped" in a concrete operational way of thinking. Concrete operations (in a Piagetian framework) is defined as the stage in cognitive development where logical reasoning may be used as long as there is a very specific example from which to reference (Santrock, 2007). Those in the concrete operational stage lack the ability to solve hypothetical, more abstract sorts of problems that are easily solved by individuals who have moved into the formal operational stage of thinking (Rider & Sigelman, 2006). I theorize that adolescents with OCD never reach formal operational thought. Instead, they think in a concrete way where thought processes are always of a negative nature. This negative, concrete thinking style is schematic in nature. A schema is defined as a basic knowledge structure that organizes previous experiences, thoughts, and reactions (Galotti, 2004).

These schemas are used to understand and react to in a stereotypical way to schema-relevant situations. For example, a compulsive hand washer may wash their hands after reading each page of a book because they understand each page of the book to be dirty and by flipping pages they are constantly contaminating their hands. In this instance, positive alternatives are not processed (such as the knowledge acquired by reading the book) because the negative schema only allows negative interpretations. Therefore, the same negative impulse will always be returned out the schematic machine because the input stimulus is similar to the requirements for matching the negative schema. This negative impulse, in turn, will cause the adolescent a great deal of worry and anxiety. These negative feelings are the direct result of the formation of an obsessive loop of thought whereby information is always processed the same way. A conclusion, at least one that provides some sort of comfort, is therefore never reached.

OCD adolescent's schemas are concrete, allowing for very little to no abstraction or ability to generalize across instances to form a generalized, flexible representation of their current situation. These negative schemas are concrete in that they don't allow for the assimilation of positive experience. Positive experience is "filtered out" when environmental stimulus is passed through the negative schematic machine. This effectively rules out half of the perceived experience, limiting an individual's views of a situation, and preventing any successful abstraction. Consequently, I propose that more experiences, especially positive experiences, of thinking about the schema-relevant situation would allow the individual more response options to those situations.

Many studies have shown adolescents using a multitude of negative coping strategies that result from negative schemas to remove the harmful feelings associated with worry. Freeston et. al. (2007) found that increased levels of worry led to adolescents having more erroneous beliefs about the effectiveness of worry, more use of avoidance strategies, avoiding unpleasant and thought provoking stimuli, thought substitution, erroneous beliefs, and cognitive avoidance strategies. This increase in coping strategies may stem from the environment providing a concrete operational example for the adolescent to follow. However, thinking patterns still follow a negative trend making cognition concrete. Freeston et. al.'s (2007) study exemplifies how concrete, negative, and obsessive schemas result in negative compulsions. Exploration of only the negative half of individual's thoughts does not consider the other positive half of thoughts. These two halves together are integral in successful thought abstraction as is illustrated by Pennebaker (1997). His studies demonstrate how mental health is related to thinking styles. Students were characterized on a continuum as being between a chronic low level to high-level thinkers. He then compared writing samples to how many visits students made to the on campus health center. Results indicated that students who visited the health center the most, tended to be the most finite and superficial in their writing whereas those who didn't visit the health center, wrote about topics that were broader and deeper (Pennebaker, 1997). For example Pennebaker cites a high-level thinker's writing sample,

"I've been thinking about my parents. We recently had a fight about the car. It's not just the car, though. They won't accept that I'm 18, and that I can think on my own. When I talk to them on the phone, I feel these powerful emotions of anger and love overpowering me. Have they forgotten their college years? I AM WORTHY. I AM WORTHY. 'Another identity crisis,' I can hear the experimenter say when she reads this" (Pennebaker 1997).

Here, we can see that this person is obviously thinking deeply about their issue with their parents. Thoughts are of a high level but still focus only on negative emotions. Obsessive loops may occur since there are no positive alternatives to break up the monotony of considering only negative alternatives. An abstracting adolescent would consider both positive and negative

alternatives and entertain thoughts such as, “My parents may recognize the fact that I can think on my own, they are just trying to help me and offer me support, which is why they have rules about using the car.” A low-level thinker is characterized by a completely different writing style, “Let’s see. The wall is brown. The floor is dirty gray. Hmm, matches my shoes. Have to get them cleaned. As soon as this study is over, go to my room, sort the laundry, go to the Laundromat. Don’t forget the shoes. Where will I get change for the machines? Maybe Jeannie (roomie). Got to get back by 4:30. Go to dinner at 5:00. Wonder what they’ll serve for dinner tonight” (Pennebaker 1997).

The stream-of-consciousness for this individual revolves around finite and superficial thoughts where no real issues are dealt with. The participant uses cognitive avoidance strategies, focusing on more generic aspects of their day in order to avoid their emotions. Either one of these strategies alone has been shown to lead to an increase in health problems as well as an increased consumption of alcohol and aspirin (Pennebaker 1997). Therefore, Pennebaker says that a combination of both strategies is the healthiest path. Low-level thinkers tend to be lost in the vagueness of the cognitive avoidance strategy they use and therefore are unable to exercise control over their stressor. High-level thinkers become too emotionally involved to rationalize the stressor and therefore are unable to exercise control over the stressor. High-level thinking places the individual at a heightened state of emotional awareness to the stressor.

As Pennebaker’s (1997) research demonstrates, adolescents already have negative thoughts and attributions to their problem obviating the need to further explore their negative thoughts. Instead, by exploring more positive thoughts, adolescents may gain a clearer picture of their problem, allowing them to be more flexible in their thinking. Being in control of the stressor will alleviate their symptoms and allow them with a better coping strategy for future situations.

With adolescent OCD, only the negative alternatives are fully processed due to the negative “schematic machine.” Positive alternatives are selected out in the machine since they are not compatible with the machine’s template. This is also what makes OCD so concrete. Since only negative alternatives fit through the schematic machine, by forcing positive alternatives through the machine, it can be “broken,” thus breaking the obsessive loops and allowing the adolescent to heal. By practicing and learning to find positive alternatives, patients may find a resolution to their issue, effectively ending their obsessive loop.

Applied Schemas in Creativity and Conceptual Expansion

The most common definition of creativity is that it is originality that serves some purpose. Creativity is important in the formation of schemas whereby we assemble pieces of information that we have gathered over time to construct a new way of interpreting our environment (Becker, 1987). We then use this schema to process newly encountered information or to add new information to our schemas, thus reacting to and adjusting our perception of reality. Consequently, creativity and schemas are cyclical in that creativity helps develop schemas and schemas help develop further creativity. An individual may also utilize creativity when they do not possess a schema for the problem that they face. This is why a creativity task has the potential to be a powerful tool in the treatment of adolescent OCD. Since negative alternatives are the only alternatives that exist in the adolescent, the best way to expand creativity is by investigating the positive alternatives.

Using creativity to brainstorm positive alternatives to the OCD trigger and effectively expand an adolescent’s schemas to include both positive and negative alternatives is an example of conceptual expansion. Patterson, Sifonis, and Ward (2004) define conceptual expansion as developing new examples of a category and bringing them into realization thus thinking outside

a category domain's boundaries. Conceptual expansion might be a way to help treat the adolescent OCD patient's maladaptive schemas.

With adolescent OCD, the boundaries are clearly the negative alternatives that are provided by the schemas. Using conceptual expansion to explore positive alternatives allows for the expansion of the negative schema. Training in abstraction may thus promote adolescent cognitive development to the formal operations stage and successfully treat their OCD. I therefore hypothesize that if a therapist can influence and encourage the formation of abstract original thought, then the adolescent can more effectively manage and solve their problems.

OCD adolescents may thus be effectively treated by a creative task that asks them to consider positive alternatives to their worries. Positive alternatives may then come together with negative alternatives to change an adolescent's schemas (making them broader and more abstract). In the case of the compulsive hand washer, being able to spend more time reading for pleasure is a positive alternative to stopping to wash every time they turn a page. Perhaps even getting the adolescent to consider the fact that many bacteria are helpful to people and that they should be welcomed to promote good health would combat a negative concrete schema that all bacteria are harmful and potentially fatal.

Relevance of Analogies in Schema Formation and their Effects on Novelty

Analogies aid schema formation by bringing together several different sources of basic information that an individual has for some specific domain. Analogies typically involve the use of a few different, but understood, source domains in order to try to reach some level of reasoning of a target domain (Ward, 1998). Therefore, novel creations seem to rely on analogies with previously known information. It is the information contained in previous experiences that fuel a person's schema formation.

Small numbers of specific experiences only allow an individual to form restrictive schemas (Ward, 1998). Closely related analogies do not allow for variance and thus prevent conceptual expansion of schemas. I propose that an adolescent's restrictive schemas are the result of a small set of specific experiences. These experiences are specific in that they are all of a negative nature. Adolescents then learn to form negative schemas by connecting together these small numbers of negative experiences.

In contrast, Ward (1998) refers to distant analogies which consist of connecting instances from a variety of distant experiences in order to form a schema. These distant analogies are said to be the foundation for remarkable forms of creativity. Distant analogies aid in the development of abstract schemas which are then used to form more distant analogies. I propose that distant analogies should be one of the goals of treating adolescent obsessive compulsives. Training the adolescents to utilize more distant analogies, such as in considering positive alternatives, should effectively promote abstraction in schemas and provide effective treatment.

Novel thinking seems to therefore move to the easiest path possible (path-of-least-resistance) in conceptualizing the most relevant knowledge in either specific or distant analogies (Patterson, Sifonis, & Ward, 2004; Ward 1998). Individuals utilize the most readily accessible information and project it onto a new idea that they are developing. This information is likely to be used most in developing novelty. The goal of therapy that I propose is then to make positive alternatives, which are not readily accessed due to negative schemas, and train them to be readily accessed.

Applied Schemas in Creativity and Play Therapy

Play therapy is a technique in which children and adolescence symbolically display conflicts through their play which may involve drawing, playing with dolls, or any other activity that the patient may like to engage in (Greene, Nevid, & Rathus 2006). Play therapy allows the therapist the opportunity to help patients to develop normal feelings and teaches patients better ways of coping with issues. Play therapy adapts each individual's particular cognitive and perceptive abilities to therapy (Thompson 2005). Play therapy thus offers an environment and a therapeutic technique that can adapt to the needs of the patient while still allowing them the creative freedom to effectively address their emotions

Thompson (2005) uses play therapy in the form of story telling. Patients hear a story that is framed around the premise of their particular problem (or negative schema). The story then ends with the positive alternatives being exercised which aides in the abstraction process, showing patients how the outcomes work through story. Thompson's (2005) book uses the characters of "Norma" and "Phil Beaver" as a vehicle for treating Obsessive Compulsive individuals. In this story, Phil Beaver develops a compulsive checking behavior (going and checking his dam for leaks) when he hears running water. Phil's therapist reframes the situation to show him that he does not need to check his dam as often. The therapist then helps Phil to consider the positive alternatives by showing Phil how to use his favorite activity of swimming to the bottom of the pond to manage his checking ritual. The stories use metaphors to communicate positive alternatives to the patient. These metaphors allow the patient to discover the true meaning of the story for themselves. Play therapy in this instance, reframes the negative schema for the patient in a positive more realistic light that reduces anxiety symptoms. Play therapy may then train patients to perceive all aspects of a given scenario in order to develop better schemas that are not maladaptive.

Outline for Proposed Play Therapy Technique in Adolescents

I purpose then, a creative task aimed at promoting abstraction on positive alternatives in treating adolescent OCD. This task will be of a "game-type" format where the patient and the therapist will both provide input. The therapist will gradually reduce their input as the patient becomes more successful with the proposed technique. Success of the technique is defined herein as the increase of positive alternative scenarios associated with the schemas. This task will condition abstraction and investigation of positive alternatives. This will then provide the patient with both positive and negative alternatives as well as the ability to engage in abstract thought with regards to their OCD problem area. Patients may then make positive, rational, and realistic life decisions whilst experiencing minimal disturbance due to anxiety and worry symptomology.

Patients in therapy will sit with the therapist. The therapist will brief a patient on the task. The patient and client will then start taking turns providing positive alternatives. Scoring will be calculated by awarding one point to either patient or therapist for a good positive alternative. The therapist will be awarded points because it keeps them actively engaged and emphasizes their importance in the treatment of the patient. Being actively involved will help the patient to look to the therapist as a support base and foster a nurturing relationship between patient and therapist. Providing scores to both parties also allows for comparing scores from session to session. It is expected that as therapy is continually conducted in this manner, scores will shift in the patients favor indicating successful abstraction, exploration of positive alternatives, creativity, and conceptual expansion. These increases should lead to a reduction in anxiety and worry symptoms. Furthermore, I propose that reduction in symptoms as well as providing positive

alternatives to situations, in conjunction with the negative alternatives which already manifest, will aide in forming a realistic view of a particular obsessive-compulsive scenario. It is expected that this realistic view will break the obsessions and compulsive rituals thereby effectively treating the adolescent patient.

Therapeutic sessions may end by summarizing the positive alternatives that were mentioned. This will give patients the opportunity to choose those positive alternatives that they like the most and apply them to their particular scenario, thus making therapy effective. This final summary allows for the metaphorical interpretation of the positive alternatives that were explored.

Final Remarks on Creative Therapy

I have outlined background information that shows how an adolescent may develop negative, concrete schemas for their OCD triggers. These adolescents therefore, only think at one level and may rely on several different coping strategies (all of which are concrete and negative) in order to manage their anxiety. Creativity in therapy, by means of play therapy, has been shown to be a viable alternative to cognitive-behavioral techniques, which are superior to psychotropic medications alone. This hypothesized therapeutic technique may provide a new technique for treating adolescent obsessive-compulsive disorder, thereby answering the call of researchers for more treatment techniques. I propose Creative Therapy for further study of an experimental nature to treat Adolescent Obsessive Compulsive Disorder.

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The Lego Confessionals: The Effect of Self-Disclosure and Helping on Social and Task-Based Cohesiveness

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Abstract

Two bodies of research have shown that induced self-disclosure among group members or induced helping among group members foster greater cohesiveness, but, to date, researchers have not compared the two conditions within the same study. The objectives of the present study were to determine, in comparison to a control group, whether self-disclosure or helping lead to greater group cohesiveness, and in turn, lead to better task performance in a second task. Participants ($n = 173$) were assigned randomly to one of three different task conditions: a self disclosure task, a collaborative helping task, and a control task. Then, all three groups were asked to complete a Lego pyramid task. The ANOVA test and post hoc analyses revealed that participants in the helping condition reported significantly greater task-oriented cohesion than did those in the self-disclosure and control conditions, with the self-disclosure condition also significantly greater than the control condition.

Introduction

Groups and teams are increasingly important in many fields within psychology; perhaps most notably in organizational psychology (Guzzo & Dickson, 1996). Performance itself is one of the principal concepts considered in organizations (Salamon & Robinson, 2008), finding the mechanisms involved in increasing group performance becomes an important topic of interest. One means found to enhance performance is through developing group cohesiveness (Evans & Dion, 1991; Dion & Evans, 1992; Gully, Devine, & Whitney, 1995; Mullen & Copper 1994). The purpose of this study is to compare the effect of different means of increasing cohesiveness, by increasing self-disclosure and prosocial behavior, while supporting the established positive relationship between cohesiveness and performance.

Cohesiveness is the main focus of the present study. Man & Lam (2003) point out the common thread in most definitions of cohesiveness in that they tend to revolve around forces moving members of a group toward the group rather than away from it, regardless of whether or not they are actually in the group.

Some research has supported a curvilinear relationship between cohesiveness and performance (Kelly & Duran, 1985). Therefore, while high levels of cohesiveness are found in general to increase performance, exceedingly high levels of cohesiveness may actually decrease performance. Cohesiveness has been found, for example, to increase specific group norms, such as openness, playfulness, and disagreement, all of which have been found to compromise group performance (Gully, Devine, Whitney, 1995). If cohesiveness itself could not account for a predictable change in performance, perhaps subscales within cohesiveness would give a better representation of a reliable effect.

Many researchers began to examine cohesiveness as a multidimensional construct,

identifying such dimensions as socially-based cohesiveness, which was also known as interpersonal cohesiveness, and task-based cohesiveness (Gross & Martin, 1957). Craig & Kelly (1999) state, "task cohesiveness is thought to increase commitment to the task and to increase individual effort by group members on the task. Interpersonal cohesiveness, on the other hand, allows groups to have less inhibited communication and to effectively coordinate their efforts" (p. 244), which insinuates that the performance outcomes would therefore differ. Mullen & Copper (1994) add that task cohesiveness is the most important in the group cohesiveness/performance relationship. Findings revealed that while task cohesiveness shared a positive relationship with group performance, interpersonal/social cohesiveness had no relationship (Zaccaro & Lowe, 1986; Stogdill, 1972). This distinction is important, because it allows us to explain why cohesiveness varies at high levels. Therefore, we hypothesize that task cohesiveness will have a positive effect on performance.

Given importance of cohesiveness leading to an increase in performance, increasing cohesiveness is the priority of the present investigation. One means that is particularly successful is by increasing prosocial behavior among group members (Stone, 1988; Bergin, 1989; Pack, Rickard, 1975; Furuhashi, 1965), although sometimes called helping behavior, cooperation, or teamwork. For the current study, the task chosen to encourage helping behavior will involve difficult lateral thinking puzzles, which should in turn lead to greater cohesiveness.

Additionally self-disclosure, also referred to as personal-disclosure, has been found to increase cohesiveness (Berg-Cross, Kidd, & Carr, 1990; Roark & Sarah, 1989; Stokes, Fuehrer, & Childs, 1983; Kirshner, 1976; Johnson & Ridener, 1974). Our study seeks to examine the connection between self-disclosure and cohesiveness by measuring the extent to which self-disclosure effect cohesiveness. Therefore, it is also hypothesized that self-disclosure will lead to greater group cohesiveness.

Little research has compared different methods of building cohesiveness within a single study. In our study the effect on cohesiveness of prosocial behavior will be compared to the effect on cohesiveness of self-disclosure. We hypothesized that encouraged prosocial behavior would build a greater level of task-based cohesiveness than self-disclosure, and that self-disclosure would result in greater socially-based cohesiveness.

In summary, the following hypotheses were examined in the present investigation: First, it is expected that task-based cohesiveness will lead to greater performance. Second, it is expected that prosocial behavior will increase task-based cohesiveness. Third self-disclosure is expected to increase socially-based cohesiveness.

Method

Participants

Participants were recruited from the Introductory Psychology subject pool, through the Department of Psychology Experiment Registration website. Students received course credit for participation. Participants included 173 subjects (36 male, 137 female). The mean age of the participants was 19.87, $SD = 2.71$. African Americans made up 14% of the participant pool, while 77% were white, and 9% were from other ethnic groups. By class status, 49% were Freshmen, 28% Sophomores, 14% Juniors, and 9% Seniors. These students were from a mid-sized Midwest University of about 16,000 students.

Procedure

Each online recruitment session allowed for a possibility of eighteen participants. Students were asked to come to the lobby of the Department of Psychology to wait for the commencement of each experiment session.

Upon arrival, the first fifteen participants were given randomly a notecard. On each notecard was written the numbers one through fifteen. If all eighteen possible participants were present, the remaining three students were instructed to wait. Once numbers were assigned, subjects were grouped into numbers 1-5, 6-10, and 11-15.

Participants were asked if they knew anyone in the group. If someone knew another within his/her assigned group, then one of the unassigned students swapped positions with the individual who knew the group member. This process was repeated until members did not know anyone in their group. Each group was then led to one of three separate rooms.

Once in the assigned room, participants sat around a single table. Two experimenters were waiting in the room, one of whom gave a standardized set of instructions. Participants read and signed an informed consent before participating in the experiment.

In general, for each experimental condition and the control condition, a set of note cards was placed on the middle of the desk, face-down. On the note cards were written questions to be answered by the chooser; the content of questions depended on the experimental condition. Members of each group were then allowed to respond before the next person chose and subsequently answered the question. Three conditions were included, namely, a control condition, a self-disclosure condition, and a helping condition. The control condition notecards contained trivia questions; the self-disclosure condition required participants to answer more personal self-disclosing questions, and the helping condition required participants to solve lateral thinking puzzles.

The subjects were read a standardized script detailing the process by which to go through the note cards. The note cards were shuffled and placed face-down in the middle of the table, and then the person with the lowest number started by drawing the first card.

In the control condition the participant read the trivia question aloud, then decided whether they wanted to answer it, felt comfortable doing so, or were able to do so. They had the option to discard the card or answer it aloud. If they chose to discard, they would pick up the next card and make the same decision. If they discarded twice, the participant to the right would resume where they left off. If answering, they would give their own personal answer, without the help of others.

In the helping condition the participant read the puzzle aloud, and then was allowed to pass the card around. The group was told to work together towards a logical solution that they all agreed to by engaging in discussion. They also were allowed to come to a consensus about discarding. If the chosen option was to discard, the next card would be read aloud by the next participant.

In the self-disclosure condition the participant read the question aloud, and then decided if they wanted to or felt comfortable answering it. If they chose to answer it, they did so aloud, if not, they passed on to the next card. If they did not answer the next card, the next person took the next card.

After 20 minutes they were informed that time was up and the note cards were collected. At this time the cohesiveness questionnaire was administered. The cohesiveness questionnaire was collected, and task 2 began. Task 2 was the same for all groups regardless of the original condition, but all of the participants remained in their respective groups to complete it.

For Task 2, bags of Legos and a picture of a pyramid were placed on the table in front of the subjects. Experimenters read a standard script which detailed all aspects of the construction of the Lego pyramids. The study required approximately 45 minutes to complete. Participants were given the debriefing statement, had credit confirmed, and were allowed to leave.

Materials

Trivia Cards. Questions were printed and put on notecards. Questions were created to be easy enough that most undergraduate students would be able to answer almost all of them, but not so easy that they would inspire humor. The purpose of the trivia questions was to put the control group through as similar a procedure as possible to the self-disclosure and helping conditions without encouraging help or providing a means of self-disclosure.

Self-Disclosure Cards. Questions were printed on note cards. The questions were selected from several books by the study's authors to encourage self-expression. Any questions that were thought to arouse any sort of negative affect or were deemed too personal were eliminated. Participants were allowed to pass on any question they did not want to answer for whatever reason.

Lateral Thinking Puzzle Cards. Lateral Thinking Puzzles were obtained from a website, "<http://www.rinkworks.com/brainfood/p/latreal1.shtml>." The subjects each took turns reading the cards and then worked as a group toward the solution. Questions were difficult, designed to take time and teamwork to be solved effectively. Participants were allowed to agree to pass on questions.

Legos and Pyramid Picture. Legos were provided for the second task. A photo of a completed pyramid was given in order to provide direction.

Measures

Cohesiveness Scale. The Cohesiveness Scale (Watts, Murphy, Lewis, 2007) was adapted from the Group Identification Measure by Henry, Arrow, and Carini (1999). The scale has 20 items and uses a 5-point, Likert-type, ranging from 1 (disagree strongly) to 5 (agree strongly). The scale was divided into two subscales, task-based cohesiveness (8 items, Cronbach's $\alpha = 0.77$) and socially-based cohesiveness (8 items, Cronbach's $\alpha = 0.83$).

Results

Performance

To test whether different means of creating task-based cohesiveness would result in different levels of performance, one-way ANOVAs were calculated using time for task completion as the dependent variable. The independent variable was the at the group level, namely self-disclosure, helping, and the control conditions. There were 36 teams and an ANOVA test compared the groups' conditions to their performance. Post hoc tests using Tukey's Standardized Test of Significance examined specific mean differences.

The ANOVA was not significant. Post Hoc analyses revealed differences between each the control condition, being the lowest, and the self-disclosure condition, and the control condition and the helping condition, being the highest. The differences found were not significant, but were in the expected direction (See Table 1).

Task and Socially-based Cohesiveness

To test the whether self-disclosure had an effect on socially-based cohesiveness and whether prosocial behavior had an effect on task-based cohesiveness, two separate conditions were set up in task one. As expected, task-based cohesiveness had significant mean differences $F(2, 158) = 14.51, p < .001$. Post Hoc Analyses revealed that members of the control condition reported the lowest perception of task-based cohesiveness, followed by the self-disclosure condition, with the helping condition having the highest mean (See Table 2). Means for socially-oriented cohesiveness also came out as expected in terms of direction, with the self-disclosure condition having the largest mean, and the control condition having the smallest mean. However, the means were not significantly different from one another (See Table 2).

Discussion

The purpose of this study was to expand on the group cohesiveness literature in relation to performance, prosocial behavior, and self-disclosure. Several interesting findings emerged from the present investigation. In general, it was expected that self-disclosure would lead to an increase in socially-based cohesiveness and prosocial behavior would lead to an increase in task-based cohesiveness, and high levels of task-based cohesiveness would lead to faster performance. Results found that perceptions of task-based cohesiveness were highest in the helping condition, second highest in the self-disclosure condition and lowest in the control condition.

Performance

Recognizing that group cohesiveness is a multidimensional construct is important to discovering its true effect on performance (Gross and Martin, 1957, Carron, 1982; Carron and Brawley, 2000; Carless and De Paola, 2000; Dion and Evans, 1992; Zaccaro, 1991; Zaccaro and Lowe, 1988). However, in the present study, we were not able to support existing research findings showing that high task-based cohesiveness leads to high levels of performance. However, means differed in the expected directions. Perhaps the absence of significant differences indicates a methodological shortcoming rather than a true lack of support for other findings. The insignificance may have been a result of the lack of time spent in the self-disclosure and helping tasks building cohesiveness.

Task and Socially-based Cohesiveness

The building of task and socially-based cohesiveness was the main aim of the present study. Research has found both self-disclosure (Berg-Cross, Kidd, and Carr, 1990; Roark and Sharah, 1989; Stokes, Fuehrer, and Childs, 1983; Kirshner, 1976; Johnson and Ridener, 1974) and prosocial behaviors (Stone, 1988; Bergin, 1989; Pack, Rickard, 1975; Furuhashi, 1965) to be strong predictors of an increase in group cohesiveness, yet, each process likely has a distinct link with different dimensions of cohesiveness. Self-disclosure would have a greater effect on socially-based cohesiveness, and prosocial behavior would have a greater effect on task-based cohesiveness. While all results were found to be in the expected direction, we were only able to support the hypotheses that prosocial behavior lead to significantly greater task-based cohesiveness. Task-based cohesiveness was significantly different in each condition, with the self-disclosure condition second and the control condition with the lowest reported measures. Socially-based cohesiveness was found to be greatest in the self-disclosure condition, although the difference was insignificant. It may be possible is that socially-based cohesiveness requires

more time to build than task-based cohesiveness. Future research could compare the effect of short and long durations of self-disclosure tasks on socially-based cohesiveness.

Conclusion

In summary the present study indicated a significant effect of prosocial behavior on task-based cohesiveness. Therefore, to effectively build task-based cohesiveness in a group a cooperation task where prosocial behaviors are encouraged would be quite effective. Results also indicate that more research is required to validate the effectiveness of self-disclosure on socially-based cohesiveness, and any effect of either type of cohesiveness on performance. The main constraint of the present study was likely the time factor. Future research should spend a greater amount of time building cohesiveness of both types to find if performance would be significantly affected. Additionally socially-based cohesiveness may have a more significant difference if more time is spent on a self-disclosure task.

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Table 1
Mean Scores of Cohesiveness by Condition

Measures	Control Task	Self-Disclosure Task	Helping Task	F
Cohesiveness				
Social-Oriented	31.34	32.28	32.06	1.86
Task-Oriented	26.92a	29.76b	32.06c	14.51**
Performance				
(time to complete/ number of people)	1.61	1.20	1.30	2.56

** p < .001

Table 2
Intercorrelations Among Cohesion, Prosocial, and Social Responsibility Subscales

Measure	Cohesion Social-Oriented	Task-Oriented
Prosocial		
Public	.066	.054
Emotional	.038	.060
Altruistic	-.043	-.097
Dire	-.053	-.034
Compliant	.177*	.241**
Anonymous	.047	.179*
Social Responsibility Attitudes		
Personal	.217**	.281**
Social	.274**	.300**

* p < .05 (two-tailed), ** p < .01 (two-tailed)

Location as an Indicator of an Unconscious Colored-Target Detection During a Search Task

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Abstract

A visual search-target detection task was performed to determine whether the color of a target was identifiable with above chance accuracy on trials when the target was not identified. Using a 'personalized presentation time,' human participants were given a forced choice decision on trials when the target was not identified. The twelve participants who met inclusion requirements performed above chance ($M = 42.8\%$ vs. chance of 25% , $t(11) = 5.07$, $p < .01$). This indicates the possibility that target color may occasionally be detected unconsciously. A follow up experiment was conducted to better eliminate subjectivity found in the first experiment. In Experiment two, participants first indicated the location of the target and then the color. Correct color identification when the location was incorrect was the determiner of conscious or unconscious processing. It was found that during the first 5 and last 5 trials, if a target was missed by 1-50 mm, participants performed above chance, with a mean of 34% ($t(29) = 3.40$, $p < .01$) and 39% ($t(29) = 4.37$, $p < .01$), respectively. Accurately indicating the color of an unfound target may signify that the target color may be detected unconsciously.

Introduction

Conducting research on unconscious mental processes is a challenge. Key concerns include the following: the ability to know whether there is mental processing happening at all; how one defines conscious and unconscious perception; and how one knows if unconsciousness is only weak conscious perception (Snodgrass, Bernat, Shevrin, 846-867). Sergent and Dehaene give experimental support to the idea that there is a clear distinction between conscious and unconscious perception (720-728). According to Merikle, unconsciously perceived information has been scientifically proven to determine cognitive and affective reactions (5.18). However, the argument may be more about perspective. Perhaps unconsciousness perception is not an element of consciousness, but is probably sometimes contaminated by effects of unconscious perception (Debner and Jacoby, 304-317).

One distinction that has been made between unconscious and conscious processes: fast and automatic cognitions are unconscious, and cognitions that are slow and deliberative are conscious (Shiffrin and Schneider, 127-190). Schneider and Shiffrin proposed that automatic detection operates parallel to and independent of attention. The mechanism underlying automatic detection is described as follows: "Automatic [processes] do not require attention, though they may attract it if training is inappropriate, and they do not use up short-term memory capacity" (38). Furthermore, automatic processes are difficult to stop once initiated and are not easily modifiable (127-190). Basically, consciousness and unconsciousness happen simultaneously however, one is only aware of conscious, attention focused processes. If a participant claims to

be unaware but is accurate more often than expected by chance, then the stimuli may qualify as being unconsciously processed.

In the earliest studies, participants' introspective reports were used as the proof for absence of awareness. As a general rule, if the participants' statements indicated an absence of relevant conscious perceptual experiences, it was assumed that the participants were in fact unaware of the stimuli (Merikle, 5.18). Testing unconscious perception would include presenting stimuli below the participant's threshold by using a direct task and subjectively questioning (yes, no) the undetectable stimuli (Snodgrass, Bernat, Shevrin, 846-867) to see if the participant can 'guess' the correct response to seemingly unrelated questions. The basic strategy used in studies of unconscious perceptual processes is to establish conditions under which conscious perception does not occur and then to demonstrate that stimuli can nevertheless be perceived under these conditions (Merikle, 5.18).

As an example, Schneider and Shiffrin, would present participants stimuli in a rapid succession of displays. The goal was to judge whether a target stimulus (or stimuli) had been perceived (by 'guessing'). Accuracy was the dependent measure. Another method includes presenting participants with words below detection level and then later asking participants to complete a stem-completion task (Debner and Jacoby, 304-317).

There are two common ways to present stimuli to the unconscious component of one's mind. One is to present stimuli at a 'standard time' below visual threshold (e.g. 200 msec. during a visual search task), and the second is to present stimuli based on 'personalized presentation time' just below an individual's fastest reaction time after multiple trials.

A common way to systematically present stimuli is to use a visual search. A visual search is a type of perceptual task that requires active attention while scanning a visual environment for a particular object or feature (the target) among other objects or features (the distracters) (Horowitz and Wolf, 1998). They are most commonly used for tests of perception. In a visual search task Huang, Treisman, and Pashler found that when two objects are presented successively, instead of simultaneously, perception of the colors of two objects was significantly improved. However, perception of the location of the two objects was not improved (823-825). Visual search or target detection tasks have become a useful way to test recognition (Jiang, and Leung, 100-106) to determine accuracy of location (Epstein, and Kanwisher, 1855-1866) and test spatial contextual cueing of implicit cognitions (Chun and Jiang, 28-71, 224-234, Ono, Jiang, and Kawahara, 703-712, Jiang and Song, 1439-1448). All are important for testing perception and attention.

Many visual searches conducted are 'conjunction searches' which are defined by a target that is identified not by any single visual feature (e.g. green), but by a combination of two or more features (e.g. both square and blue) (Treisman, and Gelade, 97-136). Experts have studied visual search in numerous ways and almost always use color as a contributing factor (Bauer, Jolicoeur, and Cowan, 1439-1465, Nagy, Young, and Neriani, 2971-2980, Chun, and Jiang, 28-71, Ono, Jiang, and Kawahara, 703-712, Smallman and Boynton, 1985-1994). Color has been used as distracters in unconscious search tasks (Jiang and Chun, 1105-1124) and has been used in conscious search tasks as a coding mechanism that mediates search (Nagy and Thomas, 1541-1552). Yet, the role of unconscious color perception has yet to be investigated.

Researchers have used visual displays to test for unconscious perception (Chun and Jiang, 28-71, 224-234, Debner and Jacoby, 304-317, Jiang and Chun, 1105-1124, Jiang and Leung, 100-106). For example, in Jiang and Leung's study, participants searched for a white target among black and white distracters. When repeated sets of stimuli were used, participants

found the target more quickly, indicating that unconscious perception had occurred. They also note the importance of attention to this type of unconscious learning (100-106). The importance of attention is expressed in other studies of unconscious perception (Chun and Jiang, 28-71, 224-234, Joseph, Chun, Nakayama, 805-807, Jiang and Song, 1439-1448).

This study uses a target detection search task to test for unconscious perception, in which perception and attention paradigms are used to examine the extent to which color, if not consciously perceived, can be recognized with above chance accuracy. Instead of a target object being defined by two features, as in a conjunction search, the target of this study is of similar shape, but varying in color. So while the shape remains the same, the color is unknown. Yet, both color and shape are necessary for identification of the target. Participants searched for a colored target letter among colored distracter letters. On any given trial, if the participant could not locate the target in the allotted time, a forced-choice (red, green, blue, or yellow) task was given. The purpose of this study was an investigation of whether participants who do not find the target letter consciously are able to identify the color of the letter unconsciously. In this study we are attempting to bring together perception and attention with unconscious perception in a way that has not been studied

Experiment One: Method

Participants

The participants included 6 males and 6 females (mean age 20) that met inclusion requirements and participated as part of a requirement for an Introduction to Psychology course. All had normal or corrected- to-normal visual acuity and were not color blind. Data from 5 other participants were omitted due to problems with following instructions.

Apparatus and Procedures

Participants completed an average of 120 trials in a single session. The session was divided into 2 parts or 'phases.' During 'Phase One,' participants were instructed to perform a visual search task to find the letter 'A' and hit enter as quickly as possible. During each trial, the participant saw 48 random letters and 1 letter 'A' (standard 12' font) being presented in rows and columns of 7x7. The letter could be one of four colors (red, green, yellow, or blue) on a black background. After the participant indicated the letter (A) was found, he or she was then prompted to indicate the color of the target letter. Both 'Phase One' and 'Phase Two' each consisted of 3 groups of 20 trials. Seventy-five percent below the mean target-detection time of the final group of trials from 'Phase One' was used as the presentation time for 'Phase Two.' In 'Phase Two,' if the participant did not detect the target (hit enter when they saw the 'A') in the allotted presentation time, the letters disappeared and the participant was then given a forced-choice task and instructed to "guess" the color of the target letter:

Just as in 'Phase One,' as soon as you see the target letter, press enter. It is only when you do not find the target letter that you should then "guess" the color of the letter. Are there any questions?

Results

A single-group t-test was conducted, comparing the percent correct for each participant to the 25% chance value. The mean of 43% was significantly higher than chance guessing ($t(11) = 5.07, p < .01$) signifying that the target color may be detected unconsciously. Some participants were excluded based on results indicating they did not have enough retries (subjects never

pressed enter when they did in fact find the letter). The average participant had 39 retries. A criterion for exclusion was any data that contained less than 5 retries.

Discussion

The current results are consistent with the possibility that target color may occasionally be detected unconsciously. Participants performed significantly above chance when they claimed not to have seen the target. What makes this experiment unique is the use of a task commonly used for perception and attention and applying it to unconscious target identification. Tests of perception have been using visual searches in numerous paradigms. Feature searches (searching for a target defined by one feature, e.g. color, size, shape) and conjunction searches (searching for a target defined by two features, e.g. green and square) are two perceptual tasks that require attention (Treisman and Galade, 97-136) and require the participant to search for a target among distracters. These searches are conscious tasks done with specific attention for details of a target, usually known to the subject. This task was also consistent with other unconscious perception paradigms in that it included a subjective measurement of participant's identification, or lack of identification, of a specific target after a quick presentation of a target.

Still, participants clearly could detect the target color better than chance while professing to have never seen it. However, it is possible that the results may be due to some people setting a 'high internal criterion' (a strong desire to perform as well as possible) for reporting detection. Many participants expressed discontent or even upset that their percent correct identification was not closer to 100%. Therefore, forced-choice, being criterion-free, could appear to give better-than-chance results. Current research is testing for this possibility.

Experiment Two: Method

Participants

The participants included 13 males and 17 females (mean age 20). They were recruited through the University of Michigan-Dearborn 'Subject Pool' and participated as part of a requirement for an Introduction to Psychology course. All had normal or corrected- to-normal visual acuity and were not color blind.

Apparatus and Procedures

Participants completed an average of 10 trials (each with 25 displays) in a single session. Participants first completed a practice trial that displayed the 7 by 7 matrix of letters (the format for the display is identical to the first experiment) within a white grid. The letters presented for 2000 milliseconds (based on piloting) before disappearing leaving only the white grid. Based on percent correct the duration of the display was shortened until participants performed with approximately forty percent accuracy. Once the letters were no longer visible, participants were instructed to guess the location by clicking on the grid. Again, participants were then prompted to guess the color of the 'A,' if the letter was not found in the allotted time. Participants were instructed as follows:

Look for the letter 'A' and click on it as quickly as possible. However, the letters will flash and then they will go away. Only a white grid will remain. Please click on the grid where the letter was, or where you think that it was. Next, it will prompt you to indicate the color of the letter. Again, whatever color the letter was or whatever you think that it was. Basically, click on

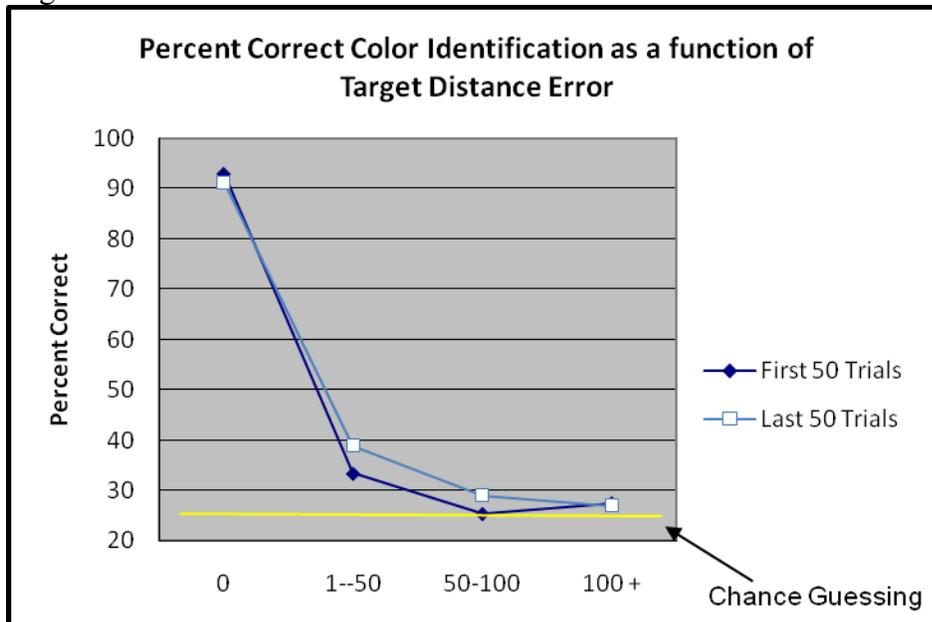
the letter if you see it and indicate the color but if you don't see it take a guess as to its location and guess at its color. Do you have any questions?

Results

Trials began with a standard presentation time and were shortened according to the individual speed of participants, again utilizing a 'personal presentation time.' The first set of trials were presented for viewing longer than were the last set of trials. The data were divided by the first 5 and the last 5 sets of trials. Trials performed last are more likely to represent unconscious perception than the first trials due to a learning curve associated with this task.

A single-group t-test was conducted, comparing the percent correct for each participant to the 25% chance value. During the first 5 trials, if a target was missed by 1-50 mm, participants performed above chance, with a mean of 34% ($t(29) = 3.40, p < .01$). During the last 5 trials if the target was missed by 1-50 mm, a mean of 39% was significantly higher than chance guessing ($t(29) = 4.37, p < .01$) signifying that the target color may be detected unconsciously. Participants also performed significantly higher than chance when missing the target by 52-100 mm. away, with a mean of 29% ($t(29) = 1.95, p < .10$). Whether the first or last trials, participants who missed the target by 1- 50 mm detected the color of the target unconsciously significantly higher than chance. During the last five trials, even if participants missed the target by 51 -100 mm they were still better than chance at detecting the target. On trials where the target was located participants indicated the color close to 100% percent of the time. On the last 5 trials, there is a negative relationship between indicating the color and distance from the target (See Figure 1).

Figure 1



Discussion

The second experiment removes subjectivity (pressing enter when one sees the target), and replaces discretion with a physical marker of the participant's inability to locate the target. This is accomplished by having the participant click on the target when it was located and 'guessing

by clicking on the grid on trials when they did not locate the target. Participants are then asked to indicate the color of the target when identified and to 'guess' the color when it was not located. Distance from the target is a measurement of unconscious identification and percent correct from chance is the measure of color identification. In addition, trial numbers (the first or last trials) may determine whether participants were more likely to identify the color of the target when there is less time for conscious processing (trials near the end).

Whether or not it was the first 5 or last 5 trials, participants who did not locate the target directly were better than chance at indicating the color; Not only did participants correctly identify the color on trials that were 1-50 mm away from the target but also during the last 5 trials at 51-100 mm away. Participants did not locate the target but were close enough to the target that they did perceive it unconsciously and could therefore accurately indicate the color more than chance. Had the stimuli been immediately followed by a prompt for color and not location this result might be more prominent. The other alternative is that when they were close enough to the target that they did in fact see the target, and like 'experiment one,' participants set a high internal criterion for reporting the color accurately. Further testing should examine these possibilities.

General Discussion

These results are consistent with findings by Snodgrass, Bernat and Shevrin (846-867) that unconscious perceptual effects manifest reliably only when conscious perception is completely absent, which occurs at the objective detection threshold (where no stimulus-related conscious perception occurs) but *not* at the identification threshold (stimuli are consciously detectable even though they are not yet identifiable). If the target letter was identified consciously they would have clicked directly or very close to the target. However, if they did not click anywhere near the location (no stimulus-related conscious perception occurred) and could still identify the color, this would suggest unconscious perception occurred.

Subsequent to the display of the letters, researchers contemplated whether to have participants identify location first or color first. With concern for making the search task a more objective measure, we chose to present location first for this paradigm. As a result participants may have known the color of the letter but forgotten by the time they had to select the color, post location selection. Future research should examine presenting color identification before location detection for discrepancies in primacy. Whichever measure immediately follows the presentation of stimuli is likely to be prominent in memory, while the other measure is more subject to forgetting or distraction.

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WHITENESS AND BEYOND: Bringing Critical Theories To Light

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The definition of “whiteness” is examined in depth in the article “Whiteness and Beyond.” The main arguments are that whiteness has taken on a complicated meaning, and that there are strong implications of the use and understanding of the term. The concept of whiteness has developed historically as a way to rank people in order of many things such as class, jobs, housing, and even poverty, but does not refer simply to skin color as we may think (Wander, Martin, & Nakayama 15). “Whiteness” emerged from racial classifications that developed in the 19th century in both Europe and the United States (Wander, Martin and Nakayama 15). At that time the technical term for “white” was “Caucasian,” however, throughout history from this point on, the definition became much more complex. It became a “historical systematic structural race-based superiority,” it is about how social institutions perpetuate ideologies, or an assertion of superiority (Wander, Martin and Nakayama 15). The authors also make the argument that race can only be seen in relation to other categories in human life such as gender and class (Wander, Martin and Nakayama 15). They hope to move us beyond whiteness by exposing the fact that race can never separate from these things (Wander, Martin and Nakayama 22).

To understand what this all means, the authors of “Whiteness and Beyond” hope to contextualize the above issues and move beyond the conventional definitions of racism. Color blindness does not assist in the disappearance of these issues, therefore the authors attempt to expose the fact that we perpetuate and recreate the same systematic race-based superiority by just accepting that it is what it is. “Using the construct of whiteness allows a discussion where no one is a racist and permits an exploration of ways in which people happily if unwittingly benefit from and informally reproduce patterns established by racism” (Wander, Martin and Nakayama 15).

Racial categories were developed in relation to the 18th and 19th century “naturalistic science” approach to the study of everything from botany, to zoology and anthropology. This approach involved measuring data and ranking things in a hierarchal order based on the features they contained that were deemed desirable (Wander, Martin and Nakayama 15). These ideals carried over to the study and ranking of humans based on their cultures, physical features, and practices (Wander, Martin and Nakayama 15). This helped to justify the colonization of whites, the Christianization of “heathens,” and the enslavement of Africans (Wander, Martin and Nakayama 16). Thus, our notions of “whiteness” were developed as a direct result of such beliefs and practices, and have been perpetuated by the structures that continue to unknowingly support the same ideals.

Property ownership is another large factor in the development of hierarchal categories. In colonial times, white males typically owned property, and this determined that they had the most power of any category, and this is still true today (Wander, Martin and Nakayama 16). The labor history in our country points to white privilege, because white laborers who were paid meager wages still had access to better schools and community facilities (Wander, Martin and Nakayama

16). Although we forget about all of the poor whites in this country, “whiteness” has still been constructed as an elitist category (Wander, Martin and Nakayama 6).

What is at Stake:

This article shows that our entire construction of normativity, whether it be race or gender, is based on a historical hierarchy developed by scientists who essentially molded their data to fit their needs and wants (Wander, Martin and Nakayama 15). Whiteness is not simply a race-based theory, because it often leads to “endless confusion and frustration” over the loose definition that by design ignores important questions about equality and justice (Wander, Martin and Nakayama 21).

What is at stake is the fact that we can easily ignore the implications of inequality and injustice because they are masked by the assumption that these issues no longer exist. We take a “race-blind” approach, in which race and class are not discussed blatantly in laws or customs, and therefore not seen as an inequality of any kind (Wander, Martin and Nakayama 16). The fact that women, children, and people of color are the poorest in the nation points to the fact that these hierarchal structures are recreating themselves as time goes on (Wander, Martin and Nakayama 21). The past and present are interconnected no matter what we would like to believe. Privilege and marginalization stem from ideals that emerged in the 18th and 19th century that would today have no merit, yet have still shaped our society. If the naturalistic scientists of that time had decided that dark skin was preferable, and that paganism was the appropriate belief system, how would our scale of normativity look today?

As stated by the authors, “It helps us see how these racial categorization frameworks operate to reinforce their historically established hierarchies through a range of strategic devices that mask its true operations” (Wander, Martin and Nakayama 23). This means that many of the things that have happened throughout history, such as slavery, have escaped our memories because we have not experienced them first hand or ever really studied them. We only experience the debris left behind, so all of this just seems “normal.”

The people who stand to lose from this are those who do not fit under the conventional definition of normativity, and those who are not “white” by the broader definition. Those who stand to win are people who happen to fit the very exact rules of normativity, such as rich, property owning, white, straight men. The definition of whiteness, as explained above, is so murky that there is an assumed prestige awarded to white people that may not even really exist. This is why poor white people really lose, because they have an assumed superiority that does not really exist (Wander, Martin and Nakayama 21). Those who assume that merit is the main ingredient for success do not understand the implications of the structures that are in place. The denial of the existence of these structures seems to be perpetuated by those in power, or those highest on the scale of normativity, which is why the ways of our society have not yet changed (Wander, Martin and Nakayama 22). We have become “politically correct” and assume that this fixes all the inequalities that exist among the different race, class, and gender categories. This is why those in power have stayed in power, and those who have never been in power very well may never be. The losers here are clearly those in the lower class categories, “abnormal” gender categories, and historically lower ranked racial categories.

What my Experience Brings to Bear:

I can easily say that based on the authors' explanation of the historical context that shaped our race and class system today, I have always been on the side of the "race-blind" group. I have always unknowingly benefited from my "whiteness," yet I have always been taught that my success in life would be based on my hard work and merit. This article dispels this notion, and shows that I am a part of the traditionally privileged "white" category which always assumes that being on top is earned. I grew up in an upper-middle class suburb of Detroit, and everyone I grew up with had money. Ninety percent of my school was white, and poverty was nonexistent. It really was the pinnacle of privilege, however it is interesting to see now how my upbringing and the resources made available to me and my peers truly affects the outcome of our lives. The fact that whites were traditionally offered better schools and access to public facilities even in lower class areas is something that I can definitely relate to (Wander, Martin and Nakayama 19). The neighborhood I grew up in had amazing libraries, a great school system and after school programs, and brand new community centers. I never thought about the fact that other communities did not always have these things, and that the reasons behind this stemmed from a very complex history.

I have never experienced any sort of race based discrimination, nor have I experienced class based discrimination. Having never had this personal experience, it helps to understand why my "whiteness" has implicitly shaped my outlook on life, race and class. It also helps to further explain the very loose definition of whiteness. "Our notions of the past are guided by these ideological blinders that allow us to reflect upon some of the horrors of the past that have shaped the world today, but not upon others." (Wander, Martin and Nakayama 24). Our ways are reproduced through a lack of understanding and the fact that we pick and choose what we want to affect us.

In conclusion, "Whiteness and Beyond" brings critical theories to light, and explains a very complex and confusing history to help us understand how privilege and marginalization in our country came to exist. Unfortunately, as the authors point out, our own discursive practices have led us to perpetuate these skewed views of whiteness, class, and gender to a point where we no longer see that our country has major underlying issues stemming from these ideals that will never go away unless we take our blinders off (Wander, Martin and Nakayama 24).

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Raising Awareness and Changing Lives: The National Black Women's Club Movement and Classic Blues Singers

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By the 1920's slavery as an institution had been legally abolished for over fifty years; however Black people were still enslaved by the social inequalities of American society. They had been denied basic civil rights, and most were confined to poverty. Black men had been labeled rapists, and Black women were viewed as unchaste and promiscuous. White racists used their power and influence to keep Blacks in a servile position, thus making it difficult for Blacks to rise above the misconceptions and social terror. In the midst of the coercion, segregation, and discrimination, two groups of women stood up to take on the challenge of publicly addressing the issues that affected their race. These two groups were those who were active in the National Black Women's Club Movement and those who have become known as the classic female blues singers. Although it would seem that these particular groups have nothing in common because of the differences in their message and the periods in which they emerged, both of their specific agendas worked to refute misconceptions, raise awareness, and call for change within their communities.

One of the main issues on the agenda of Black women's clubs was to counter the misconceptions that society had about their sexual chastity. Many Whites thought that Black women were not capable of being sexually moral, even though they had been constant victims of sexual exploitation at the hands of white men since the days of slavery. The Black women's clubs wanted to establish the fact that they were highly capable of being moral women, so they choose to speak out on the matter. In her book *When and Where I Enter*, Paula Giddings gives reference to a speech made by Fannie Williams Barrier before the all white board of "Lady Managers" for the 1893 World Colombian Exposition. Giddings writes that in her speech, "Williams attacked not only the myth of Black promiscuity, but the notion that women themselves were wholly responsible for their own victimization" (Giddings 86). In order to refute the myths about the lack of virtue among Black women, the leaders of the Black women's club movement boldly spoke out about it. They were both clever and brave because they knew who to address, and were not afraid to do so.

The classic blues singers of the 1920's through the 1940's also addressed the issue of sexuality, but choose to focus specifically on their freedom to express themselves sexually. The Black women's clubs struck down the sexual stereotypes by disproving the myths of sexual immorality and pointing out the real culprits, while classic blues singers used metaphors to indirectly announce that Black women now had control over how they would conduct themselves sexually. The platform on which the classic blues singers such as Gertrude "Ma" Rainey and Bessie Smith presented their issues was much different from that of the leaders of the black women's clubs. The activists of the latter organizations were able to make well-written speeches before crowds and have their opinions and agendas printed in various publications.

However, the platform of the blues singers was the stage, and their message reached the masses in the form of music (Davis 2). At first glance it would seem that these women were simply expressing their sexual desires and experiences through their songs; however when these lyrics are analyzed in their specific social context then it can be seen that they were a direct proclamation of their new found sexual freedom. In her book *Blues Legacies and Black Feminism*, Angela Davis uses lyrics from Bessie Smith's "Baby Doll" to illustrate how these female blues singers used sexual themes in their music to affirm sexual freedom:

I wanna be somebody's baby doll so I can get my lovin' all the time. I wanna be
somebody's baby doll to ease my mind.
He can be ugly, he can be black, so long as he can eagle rock and ball the jack
(qtd. in Davis 24).

In *Blues Legacies and Black Feminism*, Davis explains: "While sexual metaphors abound in these songs, the female characters are clearly in control of their sexuality in ways that exploit neither their partners nor themselves (14-15). These artists were willing to express themselves sexually through their music because they were in control of themselves, their bodies, and their partners. In the music, they were not victims of sexual exploitation as so many Black women had been since the time of slavery.

Besides morality, suffrage and the abolition of lynching, those who were a part of the National Black Women's Club Movement were also concerned with education and the stability of the Black family as a unit. According to Paula Giddings, the role of the mother was of particular concern to the clubwomen. They believed the societal view of the entire community would change once the Black family had established itself as a healthy unit; and the source of the family's nourishment was the mother. The mother's job was to instill in her children the qualities necessary for them to become strong adults and be able to "endure that inevitable reproach" from outsiders (100). In order to assist the women with child rearing and the cultivation of the home, clubs established nurseries and kindergartens to care for children as the mothers worked during the day. Education was also emphasized for both girls and boys. In regard to the involvement of women's clubs in education, Paula Giddings states, "Going to school was considered important for both men and women, and essential for the latter." Education for women was stressed because educated women could become teachers and would not have to work as domestic servants. As more women were educated and became instructors, there would be less sexual harassment from white employers, and more Black men and women would have an opportunity to become educated, since segregated schools required Black teachers (101).

Years later, as the classic blues singers emerged onto the scene, the issue of family life was also addressed. The classic blues artists held more of a cynical view than that of the clubwomen, yet they still raised awareness by complaining about their situations. As Angela Davis writes, "The protagonists in women's blues are seldom wives and almost never mothers" (16). The lack of family related themes in blues music could be attributed to the fact that happy marriages and healthy homes were not realistic scenes within the Black working class community. These lines from Bessie Smith's "Weeping Willow Blues" reflects this attitude toward marriage and family life:

I used to be your loft mate
But the judge done changed my fate

Was a time you could have walked right in and called this place
your home sweet home
But now it's all mine for all time, I'm free and living alone (16).

According to Davis, this attitude was common throughout the entire female blues community: "Early woman's blues contain few uninflected references to marriage. Evocations of traditional female domesticity, whether associated with marriage or not, are equally rare" (15). Regardless of whether or not these women openly stood up and called for stability within the Black family, the exposure of their personal reality still raised awareness. These women knew that family life within the Black community was not as stable as it was within the dominant culture. However, the extent to which they revealed the problems within their communities raised awareness.

Whether it was openly stated or alluded to through irony, what both groups had in common was their desire for change. An example of their common causes was the desire for respect from Black men. Most of the leaders in the Black women's clubs were highly educated, middle class women. In contrast, the classic blues singers were products of poor working class environments. There was a difference in class, yet both groups knew what they deserved from their men. In *When and Where I Enter*, Paula Giddings explains: "Apart from their concern about the protection from the 'vileness' of White men, Black women criticized the attitudes of Black men toward them" (113). Black women already had to deal with the disrespect and sexual harassment from white men, so they naturally expected that their own men would protect and respect them. Fannie Barrier Williams raised the question: "Is the Colored man brave enough to stand out and say to all the world 'This far and no farther in your attempt to insult or degrade our women'?" (qtd. in Giddings 113). The classic blues singers called for this respect through irony as they described the domestic abuse they endured, and why they tolerated it. An example of this is Bessie Smith's lyrics to "Yes, Indeed He Do":

I love him as true as the stars above
He beats me up but how he can love
I never loved like that since the day I was born (qtd. in Davis 27).

Angela Davis describes how the use of irony here not only displays their tolerance but exposes the treatment she endures and calls other women to stop tolerating it as well (28).

It is easy to point out the differences in the agendas of the National Women's Club Movement and the classic blues singers. However, after looking closely at the issues that each group addressed, it becomes obvious that the two groups had many things in common. There was a correlation between the two groups because the issues that the clubwomen spoke out about were directly affecting the social class that the blues singers identified with. Although the National Black Women's Club Movement and the pioneering blues women emerged at two different periods of time, both succeeded in speaking out against the stereotypes against Black women, raising awareness within their communities, and calling for change.

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Design and Development of a Hydro-Turbine

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Abstract

The use of fossil fuels is slowly being replaced by cleaner renewable sources of energy. Since Michigan has limited amounts of sunlight, the use of solar energy would not be practical. With the Flint River located on the campus of the University of Michigan-Flint, hydroelectric energy may be a feasible alternative. A micro-turbine will be connected to a generator to use the natural current of the river can prospectively generate 200 to 300 watts of energy. Water funneled into the turbine will increase the velocity of the current; with more velocity, the more revolutions the turbine will experience. The turbine will be designed with the appropriate number of blades along with appropriate blade angle to achieve the desired goal of 200 to 300 watts, to ensure not only the desired energy production but that the system is as efficient as possible.

Introduction

The Great Lakes states have large bodies of water that are vast renewable energy sources. Hydroelectric energy can be easily harnessed with minimal impact to the environment and is a feasible alternative because of its lower cost and reliability. The purpose of the work presented in this paper is an effort on the University of Michigan – Flint Campus to increase environmental awareness and alternate energy sources. With the positive benefits of hydropower outweighing the negative aspects, hydro-turbine technology is a valuable alternate source of energy.

A hydro turbine unit must reliably operate underwater for extended periods of time. To avoid the complexities associated with variable-blade pitch or variable-speed drive mechanisms [1], alternative designs are chosen. One of the most important components of the micro-hydro generator is the turbine. Blade speed is an important parameter in generating the desired power. The blade speed, U can be calculated from the equation $U = \omega r$, where ω is the angular velocity and r is the radius of the blade.

The mechanical power is transmitted from the blade to the generator through the shaft that must be adequately designed for transfer of torque. The torque requirement for the shaft can be calculated using the equation $T_{shaft} = \dot{m} r_m (U - V_1)(1 - \cos\beta)$. where \dot{m} is the mass flow rate through the turbine, r_m is the radius from the center of the turbine to the surface of the water, V_1 is the velocity of the water, and β is blade inlet angle [2].

Background

To address the global energy problem, greater focus on renewable energy in a broadening electricity market has created a substantial opportunity to utilize waterpower sources [3]. Falling water signifies the dissipation of energy, which in an optimum setting, can be harnessed to create a power source [4]. Small hydro is an established technology that provides dependable, renewable electrical power that has the exceptional advantage of faster reimbursement and fairly

minor maintenance requirements [5]. A small hydro mechanism exchanges the mechanical output of a turbine into electrical power [6].

The same basic types of hydropower generating equipment that have been used for several years in the area of turbines continue to be the basis of the American hydro industry. There seems to be minimal desire to make elemental modifications in these equipment styles, which have provided reliable services to the industry [8]. It is essential for hydro turbine generating mechanisms to operate safely and steadily. Therefore, it is necessary to study the dynamic behavior of the turbine assembly during design and develop an effective control strategy [9].

Small hydro stations became attractive after the oil price crisis of the 1970's and have seen resurgence in recent years [7]. Alternate energy source development is traditionally considered a positive option for power generation because of zero fuel costs, low operation and management costs, and extended life cycle. The International Electrotechnical Commission Standard IEC 1116 defines 'small hydro' as "installations with units having power outputs less than 5 MW and turbines with nominal runner diameters less than 3m" [4]. Hydro definitions have also been classified into the following categories: Small hydro (2MW-5MW), Mini hydro (500kW-2MW), and Micro hydro ($\leq 500\text{kW}$)

A micro-turbine generator includes a turbine and a generator rotor with a single rotating shaft system held in place by two magnetic bearings [10]. In this type of system, the generator is a permanent magnet, high-frequency synchronous machine. This type of synchronous generator is capable of an autonomous, secluded operation where "synchronous speed and voltage control are being maintained by the action of a governor as the load varies" [4]. Synchronizing is typically straightforward, uncomplicated and can be operated separately and is used for off-grid applications.

There are a variety of turbine types accessible, each with dissimilar significance and designed for diverse site conditions. Selection of a particular turbine depends on the available flow and pressure at the installation site along with the desired output power requirement from the turbine. Turbines are classified into low, medium, and high head turbines dependent on the availability of head. Turbines are classified into two categories, impulse and reaction, when based upon water flow [11]. Impulse turbines change the kinetic energy of a burst of water in air into mechanical energy and are commonly used for high-head applications. Reaction turbines' blades are totally submerged in water and the angular and linear momentum of the water flow is transformed into shaft power. Reaction turbines are used for medium and low head applications. Since units must operate dependably underwater for extensive periods of time, variable-blade pitch or variable-speed drive mechanisms should be avoided due to the added degree of complexity [12].

Although small hydro units are proven reliable and economically friendly, they have attributes that are both potentially beneficial and challenging. Some benefits include pollution free and environmental friendly operation, service as reliable back-up power, and require short construction time with minimal maintenance. One potential challenge to small hydro units is the inability to guarantee it can meet the required load demand due to fluctuations of water flow and seasonal variations limited by available flow. Another challenge with small hydro units are higher flow rate during rainy seasons that may damage turbine components.

One of the most positive environmental impacts in the developments of small hydro is the generation of electricity without the unfriendly emissions that are related to conventional power

plants. However, there are still environmental negatives that can be associated with small hydro and need to be taken into consideration, even on a smaller scale.

“The main environmental impacts of small hydro developments are summarized as follows:

1. Emission of dust and materials into water from construction activity could result in the short-term increase of suspended particles in the water thereby affecting the aquatic species and reducing the natural attractiveness of the river to the public during construction.
2. Construction equipment used at the site also releases pollutants temporarily, although the total amount is very small.
3. Small hydro impact from any development is site specific, and most impacts can be mediated.
4. Small hydro schemes, if not carefully engineered, may also change the level of suspended solids in the water thereby affecting the erosion and siltation of the river. This may affect natural flow patterns of the river, which could impact activities downstream.
5. The use of biocides and anti fouling preparations for the cleaning of pipes can pollute the discharge water. However, good operating practices minimize the use of such chemicals.” [5]

A major environmental issue that the hydropower industry is facing is the obstruction of fish movement. Dams block the upstream migration of the fish, which can keep adult fish from their spawning grounds and severely restrain reproduction. Downstream-migrating fish may be caught in the intake flow of the turbine causing turbine-passage injury or death. There has been research of new turbine designs to maximize the survival rate of turbine-passed fish [13].

Present Work

The objective of this work is to design and develop a hydro-turbine capable of generating 250-300 watts of electricity within 15 weeks time. With a project budget of \$500, careful consideration and monitoring of spending was done during design and in the purchase of required materials. The generator used a significant portion of the budget, so low cost materials such as carbon steel were used for fabrication of the components. Although carbon steel is inexpensive, has high stiffness, and easy to machine and weld it has poor corrosion resistance characteristics. The carbon steel parts exposed to water were coated with paints to extend the life of the components.

To generate 200-300 watts of power, each blade should have a large surface area exposed to water pressure so that the flow is concentrated on the blades. This will maximize the torque generated by the turbine blades. The turbine shaft speed was converted to a higher speed using a pulley for input speed to the generator. The speed ratio between the turbine shaft and generator shaft was 10:1.

Design Calculation and Analysis

Both hand calculation and finite element analysis were performed for design of the turbine components. Hand calculations were used to determine the force on each blade and the revolutions per minute of the turbine. Shaft torque was calculated using mass flow rate, velocity and force. Turbine efficiency was calculated from speed of the shaft as the power output is directly proportional to the shaft speed as shown in Figure 1.

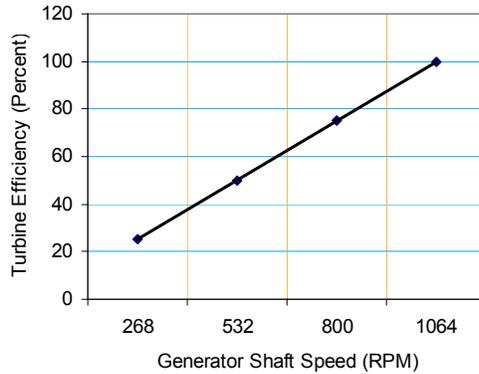


Figure 1: Turbine Efficiency at Different Speed (RPM)

Finite Element Analysis (FEA)

Finite Element Analysis was an imperative tool used to determine the maximum stresses of the turbine components. ANSYS Finite Element Analysis software was used to perform the analysis. The legs of the turbine support structure and generator support location were constrained as fixed with zero degrees of freedom in all direction. The Von-Mises stress and total deformation on the critical areas of the turbine’s support structure were verified for safe and reliable design as shown in Figure 2. The maximum Von-Mises stress was 16342 Pa on the legs of the support and the maximum deformation was 1.6723×10^{-8} m on the support structure of the turbine.

ANSYS was also used to calculate the equivalent von-Mises stress and total deformation on the turbine blades and shaft. Frictionless supports were placed on the two opposing ends of the turbine shafts. A 1400 N force was applied to the turbine that resulted in maximum total deformation of 0.1703 9m. The maximum equivalent Von-Mises stress for the turbine blade and shaft assembly was 14357 Pa.

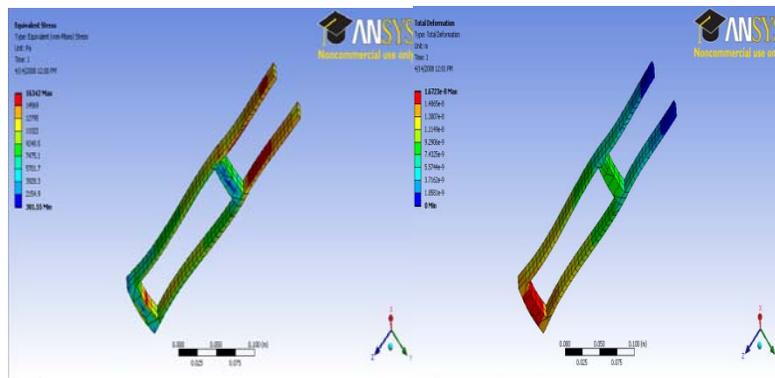


Figure 2: Maximum Stress and Deformation of Turbine Support Structure

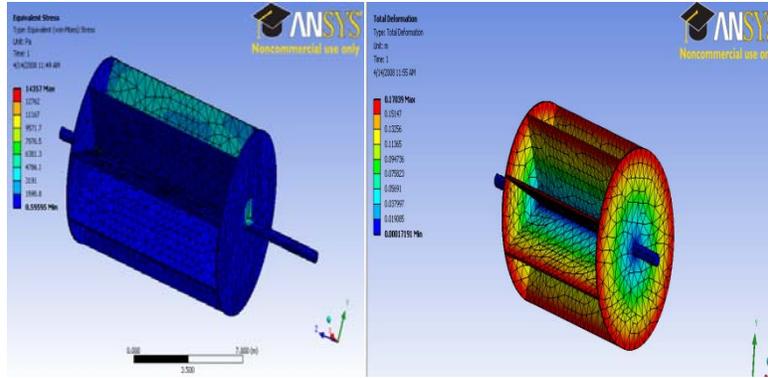


Figure 3: Maximum Stress and Deformation of Turbine Rotor

Project Schedule

Figure 4 shows the project schedule on a weekly basis to monitor progress of different tasks. The schedule is a detailed list of individual tasks and the estimated versus actual times for completion. The percent ratio of the estimated and actual times has been calculated to determine the efficiency rate of the completion of the project as a whole, or Schedule Performance Index, 102.68%.

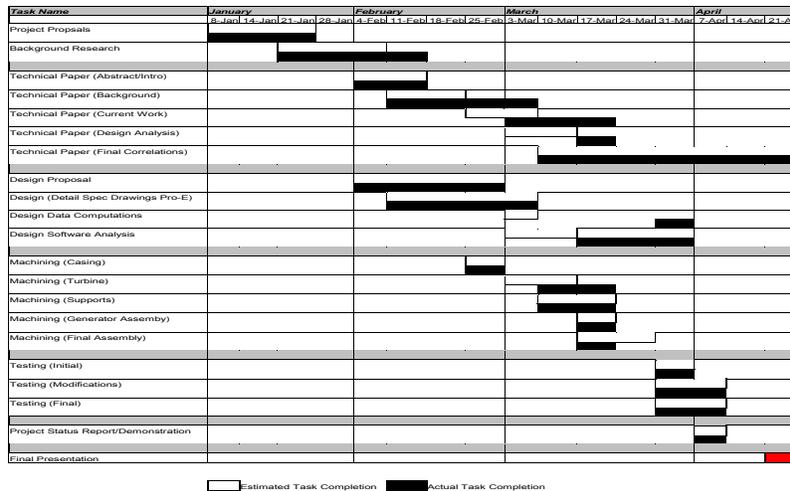


Figure 4: Hydro-Turbine Project Schedule

Performance Test of Turbine

There were several challenges associated with the turbine performance test in the Flint River, which runs through University of Michigan-Flint campus. The turbine assembly was put into the river by one member of the group wearing waterproof wading gear. Having only one member in the water made it very difficult to maneuver the turbine and its components without submerging the generator. When an attempt was made to install the turbine downstream of the Hamilton Dam the difficulty magnified, due to unstable and high water velocity.

The second test of the turbine was more productive. Two of the group members were aboard a small fishing boat to install the turbine assembly downstream of the Hamilton Dam. The flow of water through the turbine propelled the turbine blade at a speed lower than anticipated to generate desired power output of 300 watts. The main reason for the lower output was due to a higher rpm requirement by the generator.

The generator was replaced with another DC generator that would generate 300 watts of power at a lower speed. When the turbine was ready for final performance test, the water level of Flint River near the dam was unexpectedly low with very low flow and pressure, so low the turbine could not be tested. This situation forced us to develop an alternate test plan. It was suggested by Dr. Mazumder to use an adjustable power hose to spin the turbine and a voltmeter to calculate approximate voltage generated. This would closely simulate the water pressure downstream of the dam, as was planned for the original site. Due to the fluctuations of the water pressure, the highest reading observed from the voltmeter being at 35.5 V.

Results and Discussion

For optimal performance of the turbine, placement of the turbine blades perpendicular to the direction flow is extremely important. Trying to obtain this desired positioning is most challenging. The Flint River has various points along the dam with higher flow rates and pressure head. The difficulty was in attempting to reach the locations safely and without endangering any personnel using the power hose had its benefits because the placement of the flow and the control of the velocity are done manually. This created an ideal setting. However, the downfall of idealistic surroundings is that actual output of the turbine may vary in a real world setting. Placement in the environment, natural current and flow changes, and obstructions within the water itself can affect results.

The goal of this project was to produce 200 W to 300 W of power from the hydro turbine. During final testing, this goal was accomplished. The voltmeter read a max voltage 35.5 V, which converted, is equivalent to 398 watts. This surpassed the original goal set for the project.

Summary/Conclusions

Overall, the alternative design was an immense learning experience. Students had an opportunity to work in teams; researching, designing, manufacturing, and testing an engineering project. Students dealt with challenges that may arise in real world applications and were put to the test to overcome those obscurities. Most difficulties that arose have the potential to occur in any business or engineering type scenarios.

Student's awareness of environmental friendliness was broadened throughout the course of this project. Harnessing the Earth's natural resources is a constructive way to decrease impurities that have become so prevalent in today's society. Expansion and modifications for a more efficient apparatus by future students of the University of Michigan – Flint is feasible and encouraged. With the positive benefits of hydropower outweighing the negative aspects, hydro-turbine technology is a valuable source of alternate energy.

Acknowledgement

The hydro turbine design team would like to express their gratitude to the Computer Science, Engineering Science, and Physics department for providing financial support for this project. The team also would like to thank Professor Quamrul Mazumder for his guidance, advice, support and encouragement without which it would have been impossible to accomplish this challenging task in a 14 weeks period.

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Purification and Biochemical Studies on Sheep Plasma Ceruloplasmin

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Abstract

Ceruloplasmin (Cp) is a blue-colored protein found in the plasma of vertebrate species. Cp was isolated in a good yield from freshly collected sheep blood using the general purification techniques of centrifugation, selective ammonium sulfate precipitation, dialysis, and ion-exchange column chromatography. Polyacrylamide gel electrophoresis (PAGE) and SDS-PAGE band patterns at various stages of purification were prepared and the final product was compared to authentic human Cp. The protein appears to consist of a single polypeptide chain with a molecular weight (M_r) that was estimated to be approximately 130,000 Da, falling within the range of previously published values for mammalian Cp. The protein's SDS-PAGE band patterns changed after a few weeks of storage at 4°C, showing more bands with reduced molecular weights. This finding was attributed to *microheterogeneity* in the saccharide branches of this glycoprotein. A quantitative analysis using graphite furnace atomic absorption spectrometry (GFAAS) found that the normal load of copper on sheep Cp averaged 6-7 atoms per protein molecule.

Introduction

Ceruloplasmin, officially known as Ferroxidase, is a blue plasma protein synthesized in the liver of vertebrate species. Human Cp consists of a single polypeptide chain and contains about 6-7 atoms of copper in its structure. The protein functions as the major copper carrier and antioxidant in the plasma, and exhibits a copper-dependent oxidase activity associated with the oxidation of Fe^{2+} to Fe^{3+} . Analysis of the carbohydrate portion of human Cp revealed about 8% sugar by weight. Variability in weight percent and composition of the saccharide portion of the protein has been found among different species

The enzyme is deemed important as mutations to the gene encoding it can lead to the rare genetic disease Aceruloplasminemia, characterized by iron overload leading to progressive neurodegeneration of the retina and the basal ganglia of the brain. Additionally, the link between Wilson's disease, a copper storage disease, and deficiency of Ceruloplasmin has not yet been completely elucidated.

Most studies on the protein were conducted on human or porcine Cp, and the protein has also been successfully purified from the plasma of other mammals. In this research, Cp was isolated from sheep plasma and characterized by determining its MW, number of subunits, copper content, and possible changes in the protein's sugar composition over time.

Materials and Methods

Fresh sheep blood (1L) was obtained from a slaughterhouse and collected in the presence of a sodium citrate/EDTA solution. The plasma was separated by centrifugation (4000g, 30 min) and used directly for the preparation of the protein using a modified version of Hilewicz-Grabska et al. (1988) procedure. A proteolysis inhibitor was added to the plasma to prevent unwanted protein cleavages.

1) Preparation of Sheep Ceruloplasmin:

Solid ammonium sulfate was slowly added to fresh sheep plasma and the pellet at 25% saturation was separated by centrifugation (4000g, 15 min) and discarded. Next, the plasma was made 50% saturated with ammonium sulfate and the precipitated proteins were collected by centrifugation (4000g, 15 min); the supernatant was discarded. The pellet was dissolved in a small volume of 0.05M phosphate buffer (pH 6.8), placed in dialysis bags, and left to stir overnight at 4°C against a 0.05M phosphate buffer solution (pH 6.8) to reduce the salt concentration of the protein solution.

2) Concentration on DEAE-Cellulose:

To DEAE-cellulose previously equilibrated with 0.05M phosphate buffer (pH 6.8), the dialysis product was added and let to stir overnight at 4°C. Cp and some other proteins were adsorbed to the DEAE-cellulose gel. Supernatant was discarded by centrifugation and the gel was washed on a funnel with 0.05M phosphate buffer containing 0.02M KCl until no absorbance at 280nm was observed in the eluate. The gel with adsorbed proteins was packed in a column, and Cp was eluted from the gel with 0.20M acetate buffer (pH 5.6), containing 0.125M NaCl. Blue colored fractions were collected.

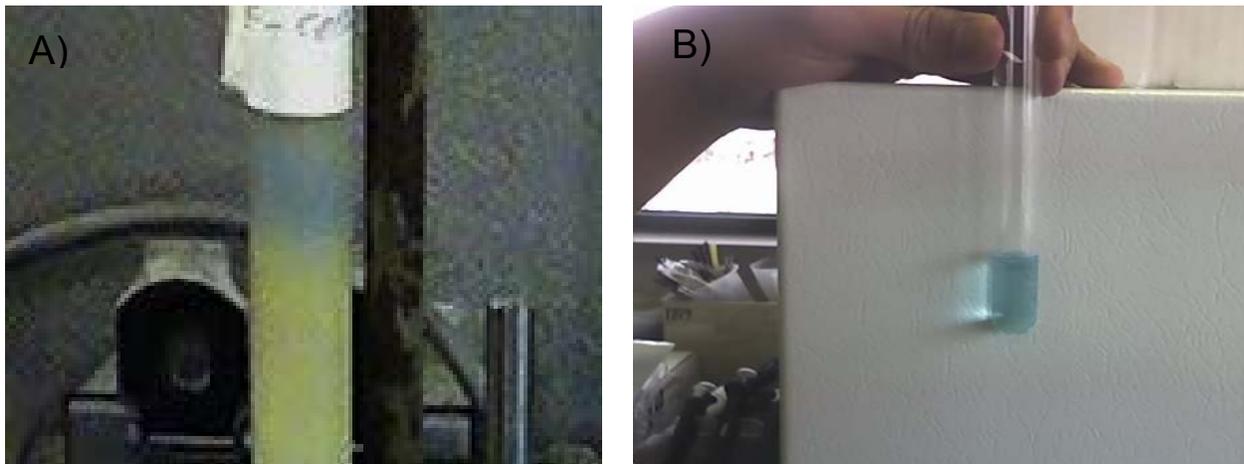


Figure 1: **A)** A blue band characteristic of Cp appeared at the top of the DEAE-cellulose column upon elution with 0.20M acetate buffer containing 0.125M NaCl. **B)** One of the blue fractions collected from the DEAE-cellulose column.

3) Precipitation with an Ethanol-Chloroform Mixture:

To the blue fractions, 3 volumes of ethanol-chloroform mixture (9:1 v/v) were added dropwise while stirring slowly at room temperature. The precipitate was collected by centrifugation (4000g, 15 min); the supernatant was discarded. Cp was extracted from the pellet with 0.15M

NaCl (pH 6.8) and cleared by centrifugation (16,000g, 60 min). The Cp solution was concentrated by freeze-drying to 2mL and then applied to a Sephacryl S-200 column that was previously equilibrated with 0.15M NaCl (pH 6.8). Blue fractions were combined and applied to a DEAE-Sepharose column equilibrated with 0.15M NaCl (pH 6.8). Cp was eluted when 0.60M NaCl was added. Traces of non-Cp copper were removed on a Chelex 100 column equilibrated with 0.15M NaCl (pH 6.8).

Characterization of Sheep Ceruloplasmin:

The Bradford protein assay was used to monitor the amount of proteins present in the intermediate and final purification products. PAGE and SDS-PAGE band patterns were used to assess the purity of the purified protein, its molecular weight and number of subunits. To analyze the copper content of sheep Cp, GFAAS was carried out on the purified product and the results were compared to authentic human Cp.

Results

Immediately after the end of the purification process, gel electrophoresis was performed on the purified product and the standard human Cp. Figures 2 and 3 show the results.

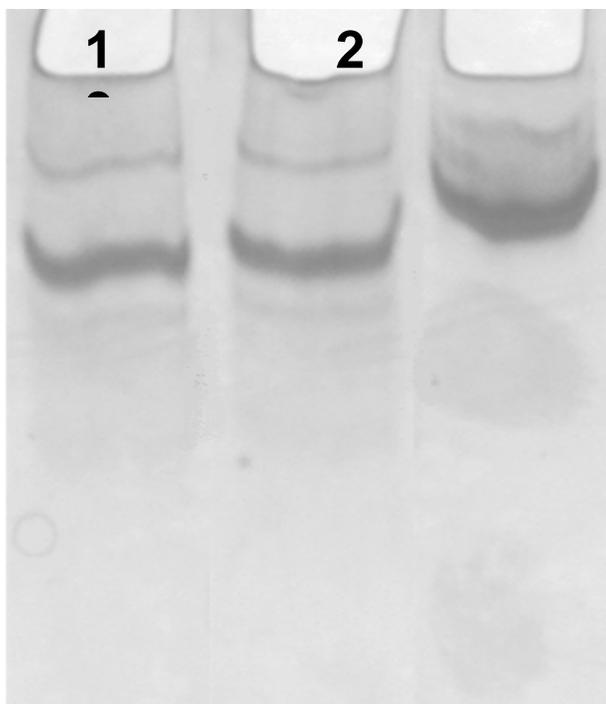


Figure 2: 10% Polyacrylamide gel stained with Coomassie Blue. **1&2)** Purified sheep Cp; and **3)** Standard Human Cp ($M_r= 134,000$ Da).

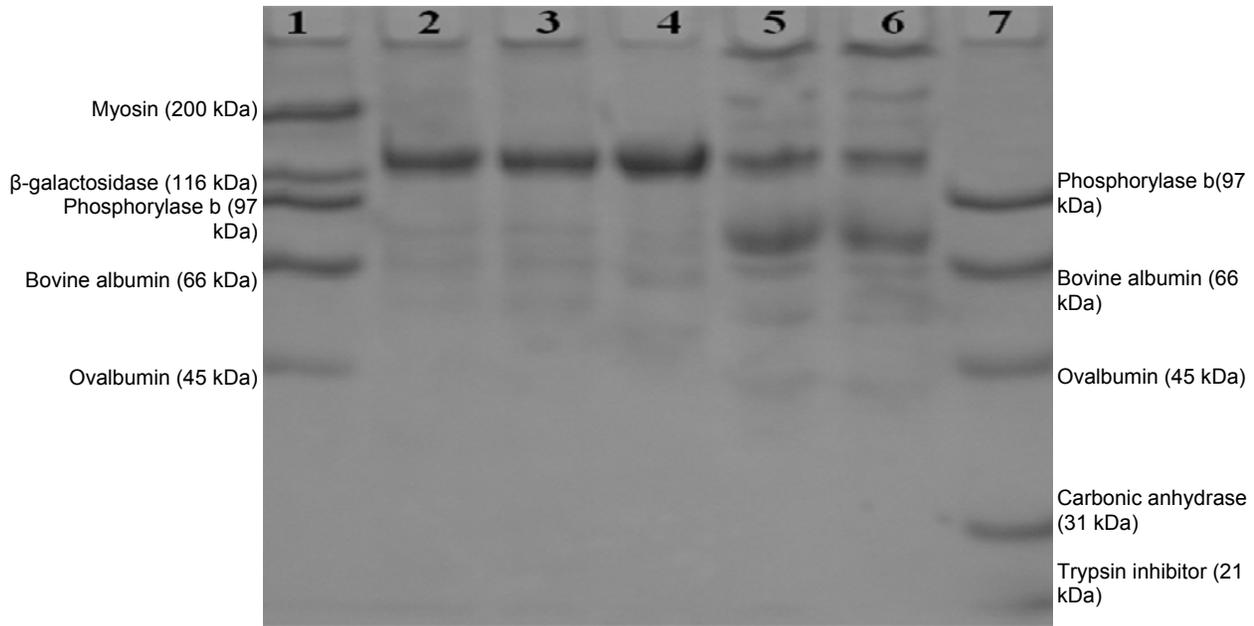


Figure 3: 10% SDS-Polyacrylamide gel stained with Coomassie Blue. **1)** High range SDS-PAGE standards; **2 & 3)** Purified sheep Cp; **4)** Standard human Cp; **5 & 6)** Crude product before application to Sephacryl S-200 gel; and **7)** Low range SDS-Page standards.

Again, after about 4 weeks of storage at 4°C, gel electrophoresis was performed on the purified product and standard human Cp to detect any changes in band patterns and M_r .

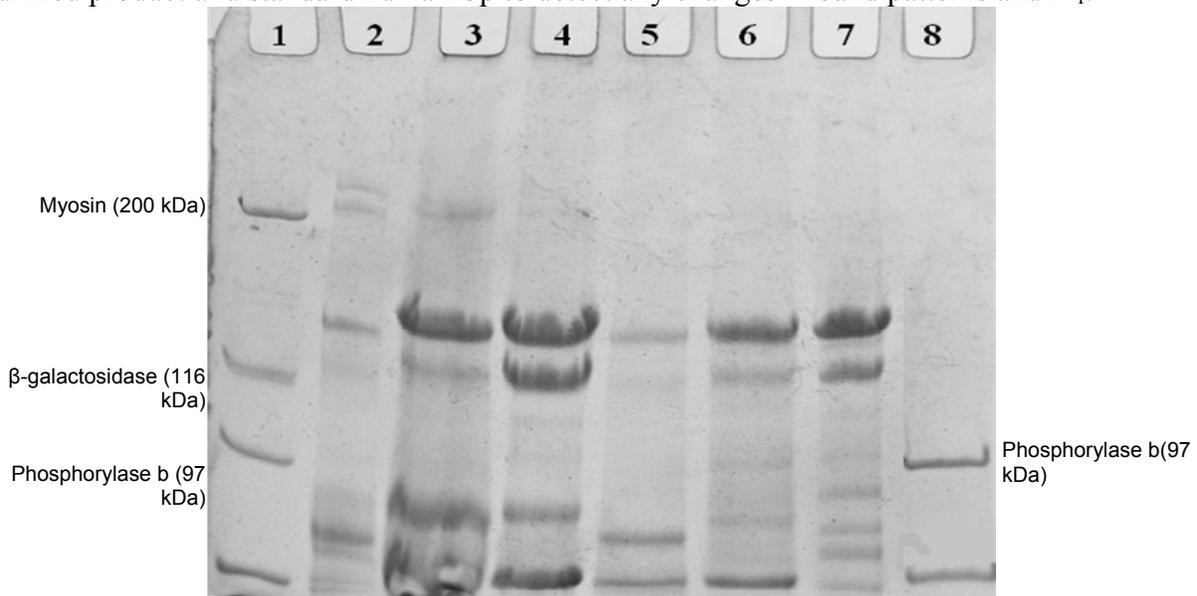


Figure 4: 10% SDS-Polyacrylamide gel stained with Coomassie Blue. **1)** High range SDS-PAGE standards; **2, 3 & 4)** Intermediate products during purification; **5 & 6)** Purified sheep Cp, **7)** Standard human Cp, and **8)** Low range SDS-Page Standards.

Discussion

The Bradford protein assay performed on the purified Cp showed that the final product contained about 4.5mg of extracted protein. The PAGE and SDS-PAGE band patterns collected during and at the end of the purification process showed that the final product was highly pure. As can be seen in Figure 3, the SDS-PAGE bands patterns for the purified product were identical to that of the authentic human Cp. The presence of only one major band for the purified protein indicates that sheep Cp, like human Cp, consists of a single polypeptide chain and has a molecular weight that is very close to that of human Cp, about 130,000 Da.

Interestingly, gel electrophoresis performed on the purified Cp and authentic human Cp after about 4 weeks of storage at 4°C showed significant changes in the band patterns of both proteins. Compared to Figure 3, Figure 4 shows an increase in the number of bands that appeared at lower M_r for both sheep and human Cp. A proposed explanation for this finding is the accidental breakdown of the sugar branches of the proteins at different sites. The breakdown of sugar branches reduces the M_r of the proteins, leading to the appearance of new bands that travel further down on gel electrophoresis. Variation in the composition and molecular weight of the same glycoprotein due to differences in the structure and composition of the carbohydrate portion is known as *microheterogeneity*.

The GFAAS absorbance values for the purified protein and the human Cp were very close to each other within experimental error. This means that sheep Cp is also similar to human Cp in terms of its copper content, both containing approximately 6-7 copper atoms per protein molecule.

Finally, further biochemical studies are necessary to further characterize the isolated sheep Cp in terms of its sugar content, possible microheterogeneity in Cp, the effect of deglycosylation on the protein's M_r and SDS-PAGE band patterns, as well as the ability of Cp to hold more copper atoms than its normal load.

Acknowledgment

Special thanks to Professor Ali Bazzi at the University of Michigan-Dearborn for his help with the GFAAS.

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Exposure Assessment of Butanol Addition in a Protein-Filtration Extraction Process

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ABSTRACT

Occupational exposure to n-Butanol is a concern due to the potential for severe adverse health effects, particularly at high concentrations, and its ability to form explosive vapors in air at relatively low temperature and pressure. Using the analytical methods for sampling n-Butanol determined by the National Institute for Occupational Safety and Health (NIOSH), samples were taken to conduct a concentration profile for butanol based on time and distance. Data collected through sampling was used as boundary conditions for a three-dimensional computational fluid dynamics (CFD) simulation to determine the effects of introducing a clean-air source and a vacuum sink to effectively contain the explosive and respirable n-Butanol vapors. Results of CFD simulations show that introducing a clean-air source and dirty air sink will yield a reduction in airborne concentration of n-Butanol.

INTRODUCTION

Determining concentrations of explosive vapors, as well as vapors that are a possible human health hazard is very important in the workplace. Small- to medium-sized manufacturing facilities are often overlooked by corporate-level management and government regulatory agencies until a major incident, like an explosion or fatality occurs. Due to having fewer employees, smaller production outputs, and usually safe operating conditions, these facilities do not attract the attention of regulatory oversight. Furthermore, their apparently safe record allows corporate-level management to become complacent about the safety of these facilities. As a result, exposures at threshold levels may exist that pose risks to human health and safety.

Safety coordinators conduct objective risk and health-hazard assessments in order to make sound decisions when it comes to safety issues. Because of the supposedly “controlled” exposures at threshold levels (that often prove not to be), it is very difficult for local level managers and safety/health professionals to incorporate needed, and usually inexpensive, risk mitigations that can all but eliminate human health hazards. Addition of such safety and health precautions invariably results in an overall decrease of risk and an increase in production.

The current work serves to address this very issue with a health-hazard analysis and corrective recommendations for a Detroit, Michigan pharmaceutical manufacturer. The facility, which wishes to remain anonymous, has two potential health hazards. The first is the risk of inhalation exposure to n-Butanol during a manual delivery de-foaming process (See Figure 1). Second is a risk of explosion from n-Butanol vapors coming into contact with very hot surfaces within the immediate process area.

Research Goals

1. Measure concentration of airborne vapors during manual addition of n-Butanol in de-foaming operation.
2. Assess potential adverse impacts of n-Butanol exposures on human health.
3. Assess risk of explosion hazards in the manufacturing facility due to n-Butanol vapors coming into close contact with hot surfaces in the immediate process area.
4. Recommend corrective procedures, actions, and controls to mitigate risks to human health and safety.



Figure 1. Protein-filtration process. Stainless tray is where butanol is manually delivered as a de-foaming agent to the filtered protein.

Methods

Sampling Strategy

The Michigan Occupational Safety and Health Administration (MIOSHA) sometimes relies on certain federal guidelines for determining compliance. In the case of measuring concentrations of primary alcohols, including n-Butanol, the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) provide criteria for air sampling and analytical analysis. They are as follows:

- Use a solid sorbent tube (coconut shell charcoal)
- Collect no more the 10L per sorbent tube
- Analyze samples using gas chromatography

Following NIOSH standards for sampling n-Butanol (reference please), sampling flow rates and duration were carefully calculated so the coconut shell charcoal tube wasn't overloaded with n-Butanol vapors. Overloading the sampling media would compromise the analytical results.

In order to perform sampling in the facility, it was necessary to wait for an optimal time in the production process where the research activities would not interfere with the tasks performed by the employees. Also taken into consideration was the movement of the employees during the process in order to ensure that the sampling pumps would not be disrupted during the duration of the sampling.

Sampling Equipment

To complete the sampling, four low-flow sampling pumps were used. The sampling media chosen was 600mg Coconut Shell Charcoal tubes, which was based on NIOSH recommendations (NIOSH, 1994). Calculations were performed to determine flow rates and duration of each individual pump. Flow rates and duration of each pump are listed below.

Table 1. Pump sampling duration and flowrate.

Pump #	Sampling Duration (minutes)	Flowrate (Liters/min)
1	24	0.2003
2	25	0.225
3 (Faulted)	18	0.150
4	26	0.150

Simulations

A three-dimensional (3D) representation of the work environment was created for use in fluid dynamics simulations. An integrated survey tool known as the TruPulse 360 (LaserTech, Inc., Centennial, CO, ???) was used to collect point location and distance information for major features within the facility. Data from the survey tool were then imported into the Walls survey software (Mckenzie, 2007) to generate a 3D line plot. Finally, the 3D line plot was used as a basis for generating a full 3D representation of the facility (See Figure 2.).

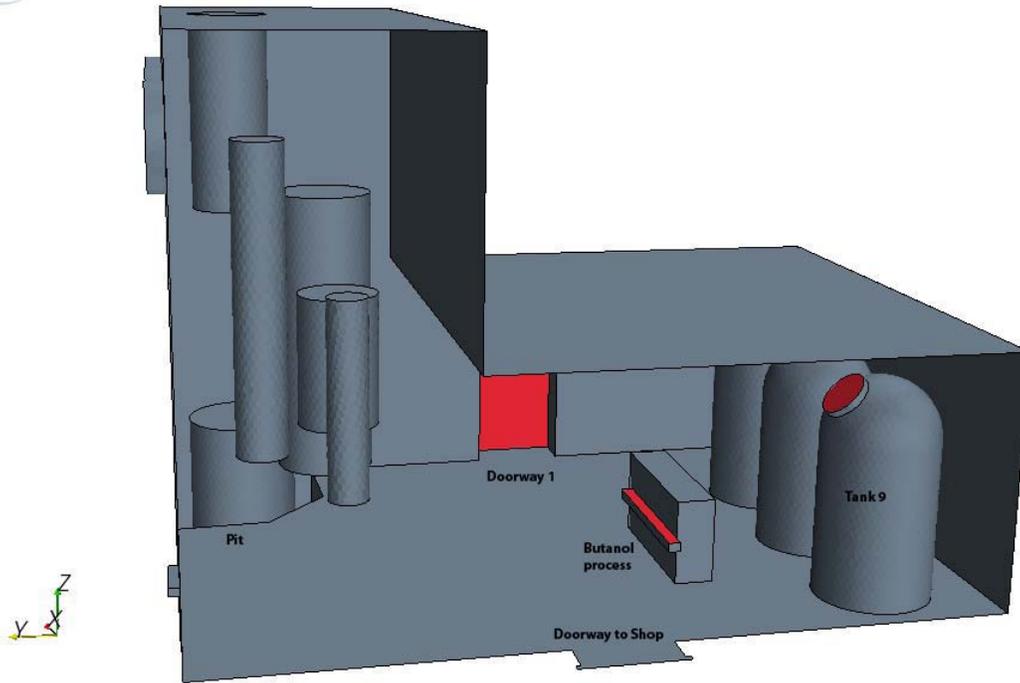


Figure 2. 3-D representation of protein-processing facility.

Three dimensional computational fluid dynamic (CFD) simulations were conducted using commercially available STAR-CCM+ 3.02. The CFD software package is based on matrix solutions of the algebraic expressions of the Navier-Stokes equations (CD-adapco, 2007).

Results

Vapor Sampling

Industry best practice standards from the American Conference of Governmental Industrial Hygienist's (ACGIH) suggest a threshold limit value (level of which a worker can be exposed to a particular chemical day after day for a working lifetime without adverse health effects) of 20 parts per million (ppm) for n-Butanol (ACGIH, 2006). The analytical sampling conducted at the facility showed that the upstream side of the process equipment yielded 21 ppm (Pump 1), and the downstream side of the process equipment yielded an average of 70 ppm (Pumps 2 and 4). Pump 3 faulted out during operation. Results are shown in Plot 1.



Plot 1. Butanol concentrations by pump location. At the left side of the tray (Pump 1), concentrations were low, while at the right side they were higher (Pumps 2 & 4).

Simulations

Simulations showed significant air flow patterns throughout the room as seen in Figure 3. The “wave” pattern of the n-Butanol vapors suggests that the vapors are quickly being swept away by the air flowing through the room (Figure 4). The simulation agrees qualitatively with the field measurements where the lower concentration was upstream and higher concentration was downstream (Figure 5).

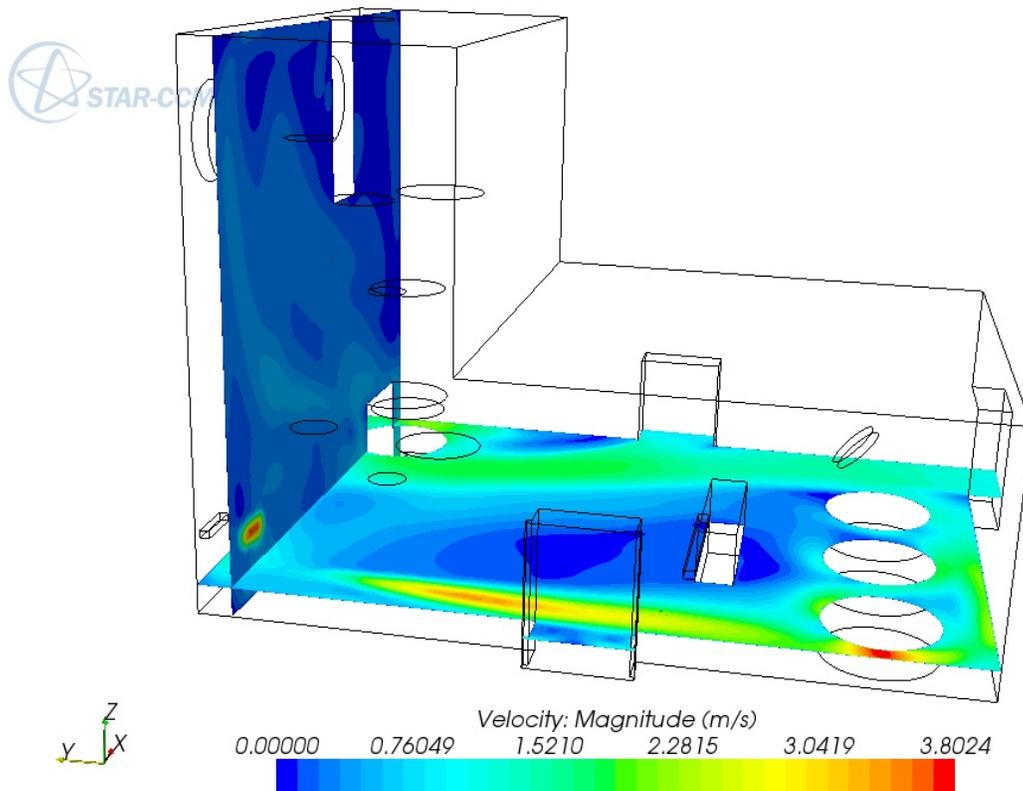


Figure 3. CFD simulation results showing airflow patterns. Note large eddies (blue) to the right and left of the protein-extraction filter.

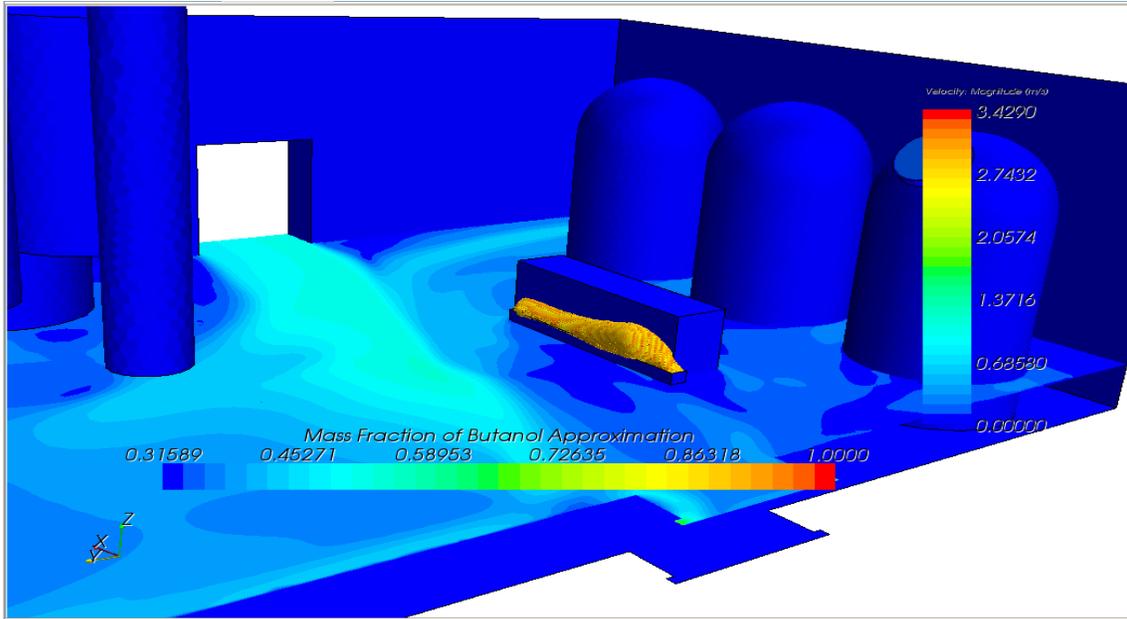


Figure 4. CFD simulation of airflow patterns and butanol vapors (yellow).

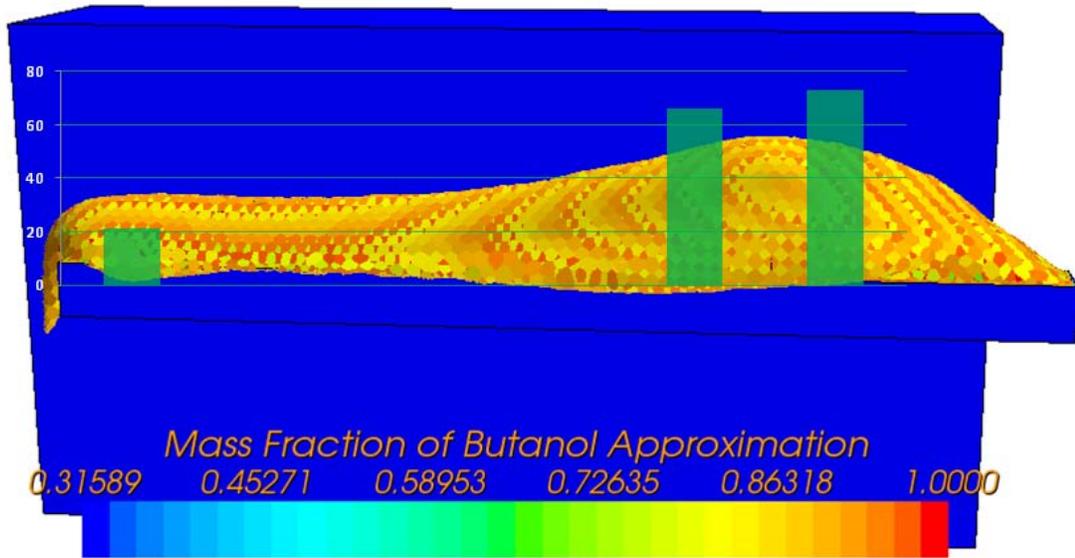


Figure 5. Overlay of butanol vapor sampling results with corresponding location in CFD simulation. Qualitative agreement is very good.

Conclusions

Simulations confirmed the safety of the process currently being performed at the manufacturing facility. The n-Butanol vapors are dissipated quickly enough to ease the concern of possible explosive mixtures or the possible respirable hazards. However, it has been noted that if the air flowing through the open doorways in the process room was cut off there could potentially be a dangerous build up of explosive vapors and potential respirable hazards in the room.

Suggestions for reducing the health and safety risk include introducing a local ventilation system. The simulations shows that the introduction of a clean air source and dirty air sink would significantly reduce the risk of the associated hazards with n-Butanol.

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A New Model of Heart Tube Formation in Chick Showing 125° Rotation

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Abstract:

In the classic model of heart tube formation, the bilateral heart fields fuse in a zipper-like fashion. However, the new model suggests that this fusion takes place after a 125° rotation, which changes the polarity of the heart fields before and after rotation. This rotation is visualized by 3-D reconstruction and confirmed by fate mapping using live fluorescent labeling *in ovo* and in culture. Confirming that the myocardial progenitor cells reside in the lateral mesoderm, fluorescent crystals were inserted to trace the migration and differentiation into myocardial cells. The results show that the heart field is organized in lateral to medial stripes and that its borders extend caudally to the level of somite 2.

Background:

After the embryo has become a 3-layered gastrula, the lateral mesoderm splits into two layers: splanchnic and somatic layers. The cardiac progenitors are restricted to the splanchnic mesoderm. Between stages HH3 and HH7, the cardiac cells in the primitive streak move cranially to the final heart field. The heart field is the location of the cells that, at later developmental stages, fuse together to form the heart tube (HH10-11), which later becomes the heart. It has long been known that the cardiac progenitors in the primitive streak (HH3) have the same polarity as the cells in the heart field (HH10): the outflow cells are in the cranial region, while the inflow cells are in the caudal region. However, the exact process of how this is accomplished has been overlooked repeatedly. The generally accepted heart development model (Figure 1) states that the cells in the primitive streak move cranially in a simple semicircular fashion, and fuse together forming the heart tube.

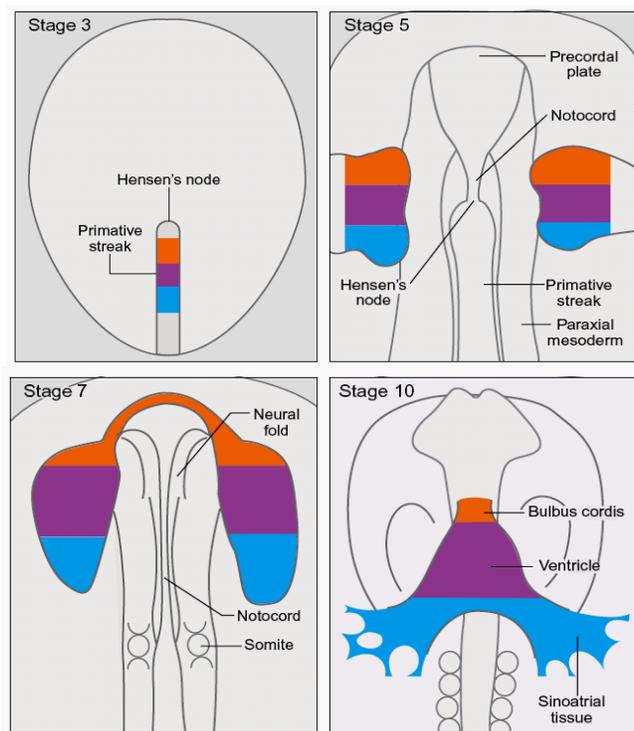


Figure 1: Classic Model of Heart Tube Formation. Fishman and Chien (1997).

However, if the classic model is correct, and the inflow and outflow cells move to the heart field in a semicircular fashion, then the polarity of the heart fields should be opposite of what has generally been agreed upon: the outflow cells residing caudally and the inflow cells cranially (Figure 2). With this orientation, when the heart fields fuse together forming the heart tube, the heart tube will have the reverse polarity, and assuming normal development, the heart will ultimately form upside-down.

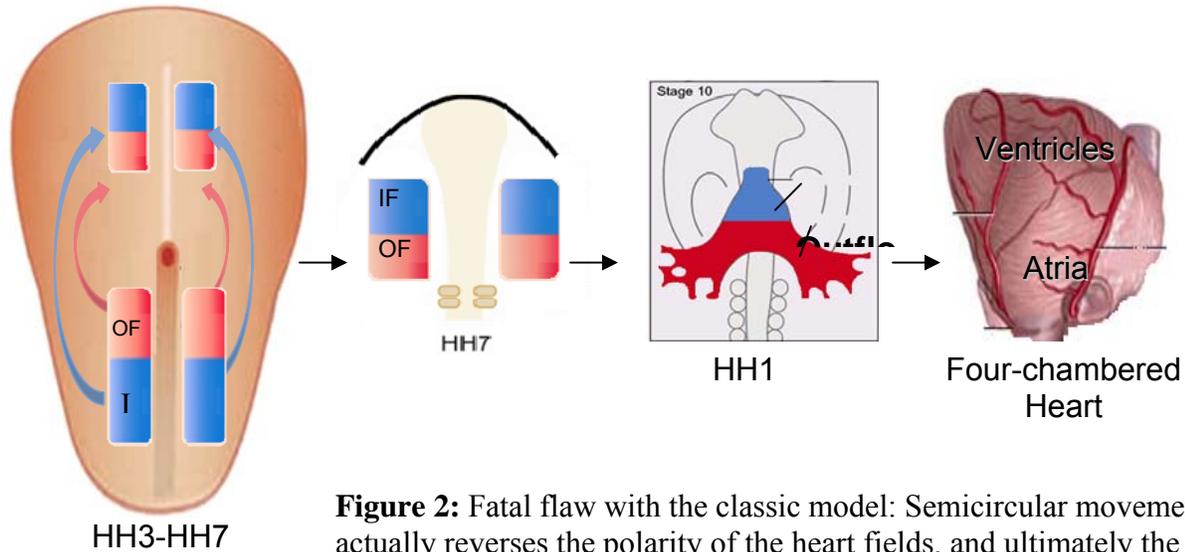


Figure 2: Fatal flaw with the classic model: Semicircular movement actually reverses the polarity of the heart fields, and ultimately the heart.

Therefore, the classic model of heart formation fails to explain the identical polarities at the primitive streak and the heart tube. So then we must ask, what happens between stages 3 and 10 that allow for the orientation of the inflow and the outflow cells to be consistent?

The new model of heart formation solves this paradox. The new model states that the inflow and outflow cells of the bilateral heart fields move cranially to the heart field in such a way that their polarity becomes medio-lateral, with the outflow medial and inflow lateral. Around stage 8, the inflow and outflow regions undergo a 120°-130° rotation prior to fusion at the ventral midline, which restores the original polarity of the cardiac cells observed in the primitive streak (Abu-Issa & Kirby) (Figure 3). The new model was supported by the results of 3-D reconstruction and double-dye labeling from a series of histological sections.

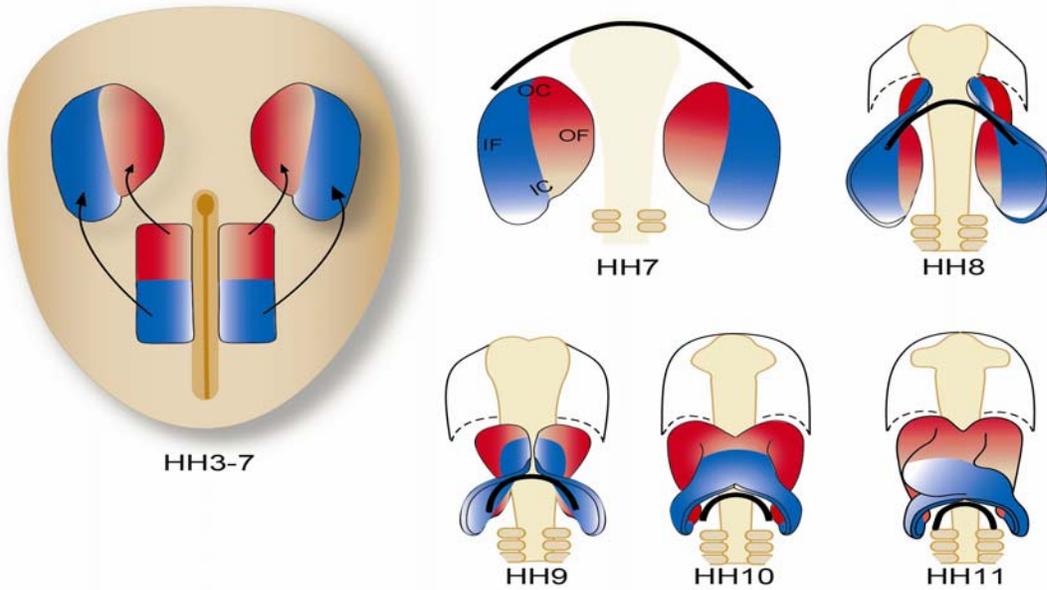


Figure 3: New model of heart tube formation showing a 125° rotation.

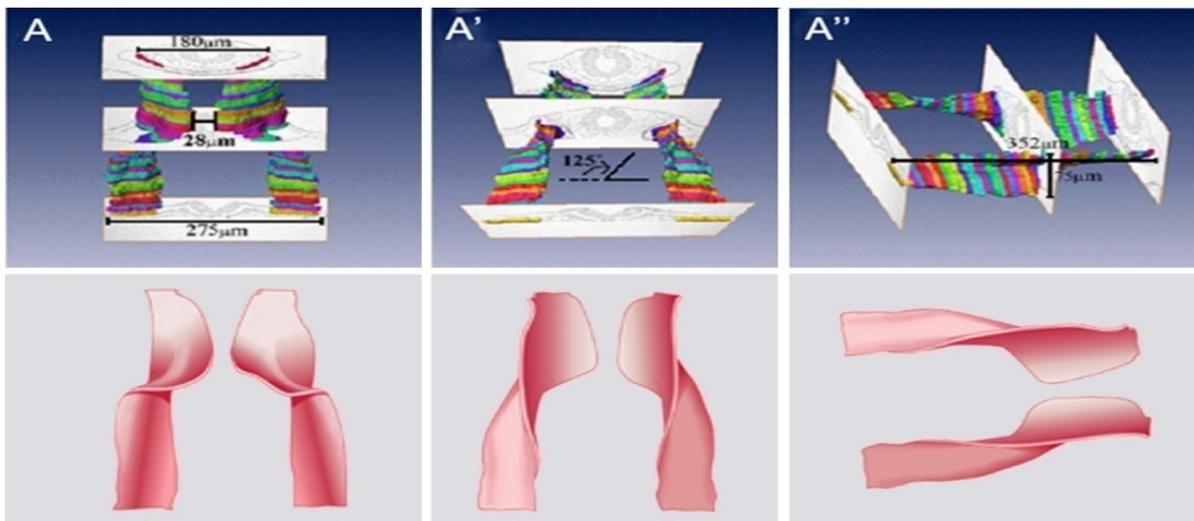


Figure 4: 3-D reconstructed images of the heart fields (using Amira 3.1 software) clearly show the 125° rotation occurring at HH8 of embryonic development. Abu-Issa and Kirby (2008).

The results from fate mapping of the heart fields using double-dye labeling have shown strong support for the occurrence of a 125° rotation. Red and green DiI fluorescent crystals, initially inserted laterally and medially, respectively, into the mesoderm around stage 8 appeared to switch positions relative to each other 6 hours following the insertion (Figure 5). When the crystals were observed in the developed heart, it was found that the medially inserted green DiI crystal ended up in the outflow, while the laterally inserted red DiI crystal ended up in the inflow (Figure 6).

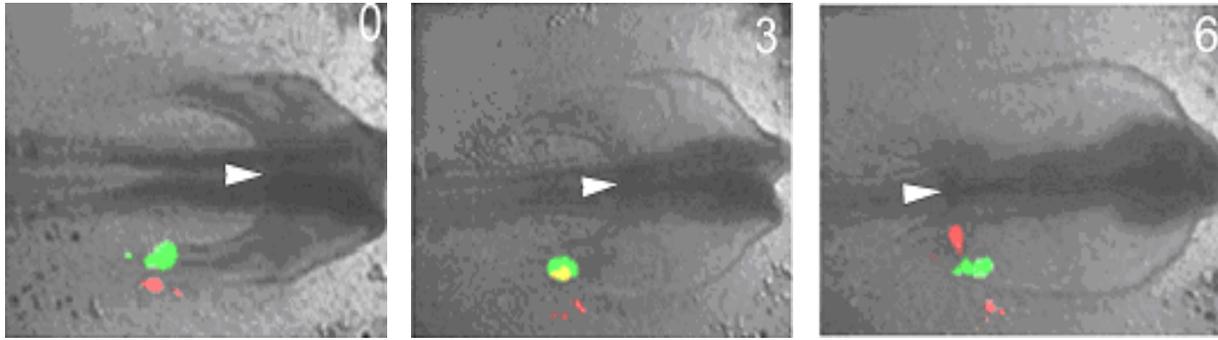


Figure 5: Pictures were taken at 3-hour intervals to trace the movement of cells under fluorescent microscope. Abu-Issa and Kirby (2008).

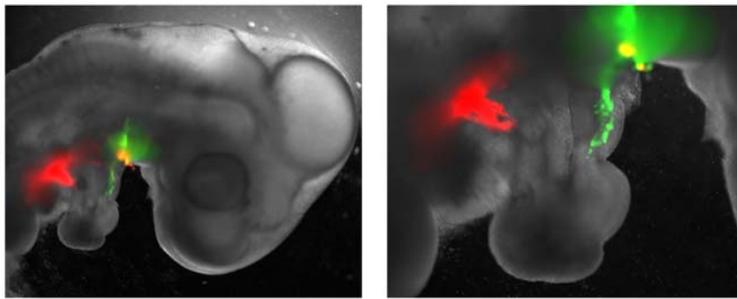


Figure 6: Final locations of the stained cells, showing green-labeled cells (inserted medially) in the outflow and red-labeled cells inserted laterally) at the inflow. Abu-Issa and Kirby (2008).

In the current research project, the main objectives were to find evidence in support of the new model of heart tube formation, as well as to determine the caudal border of the heart fields.

Methods:

Animal Preparation:

Fresh fertilized chicken eggs were purchased and incubated at 37°C in a humid environment for approximately 36 hours until the embryos reached the proper stages. For the experiments done *in ovo*, windows were made in the shell, and after the experimental procedure was complete, the windows were sealed with cellophane tape. The eggs were then incubated again to allow development to continue.

Fate Mapping:

After removing the vitelline membrane from the area surrounding the embryo, red DiI fluorescent crystals were inserted into the mesoderm near somite 2 using pointed glass pipettes. To ensure that the crystals were indeed inserted into the mesoderm, pictures were taken 4 hours after insertion to check for diffusion of fluorescence. After allowing the eggs to incubate for another 48-72 hours, the embryos were checked for survival and extracted from the yolk. The embryos were then cleaned from any existing extraembryonic membranes and observed under a fluorescent microscope to confirm movement of the stained cells into the heart tube.

Results:

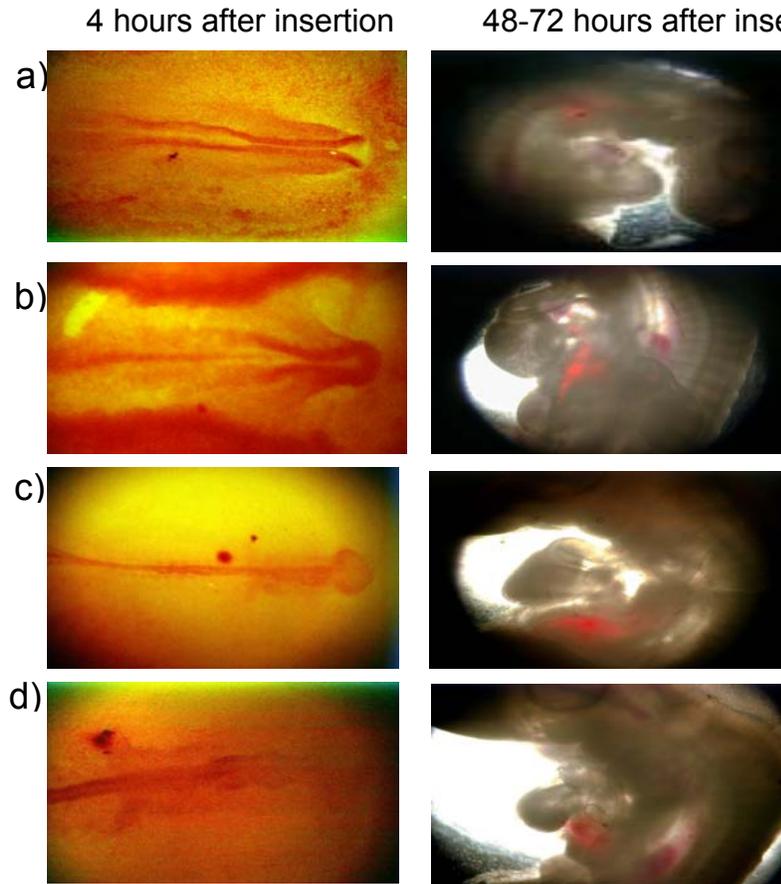


Figure 7: In all the initial pictures taken 4 hours after insertion, the red DiI crystals were inserted into the splanchnic mesoderm near somite 2. **a)** Crystal initially inserted medially at stage 7 later migrated into the outflow. **b)** Crystal initially inserted laterally at stage 7 later migrated into the inflow. **c & d)** The crystals initially inserted at stage 10-11 later migrated towards the caudal end of the heart.

Discussion:

The fluorescent pictures show that when the crystals were inserted medially into the mesoderm, they migrated into the outflow region of the heart tube, while laterally inserted crystals migrated into the inflow. This reveals that inflow precursors are located in the most lateral portions of the heart field, while the outflow precursors are located in the most medial portions, closest to the somites. These results are in line with the new model, which says that the polarity of the heart fields becomes medio-lateral by the end of stage 7, with the medial region later forming the outflow and the lateral region forming the inflow.

Furthermore, experimental results also show that the caudal-most border of the heart field is indeed located in the region of somite 2, as previously suspected. This was determined based on the movement of crystals inserted into the mesoderm near somite 2 which ended up at the borders of the heart. Insertions near somites caudal to somite 2 showed no migration into the heart tube, verifying our hypothesis.

Acknowledgments:

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