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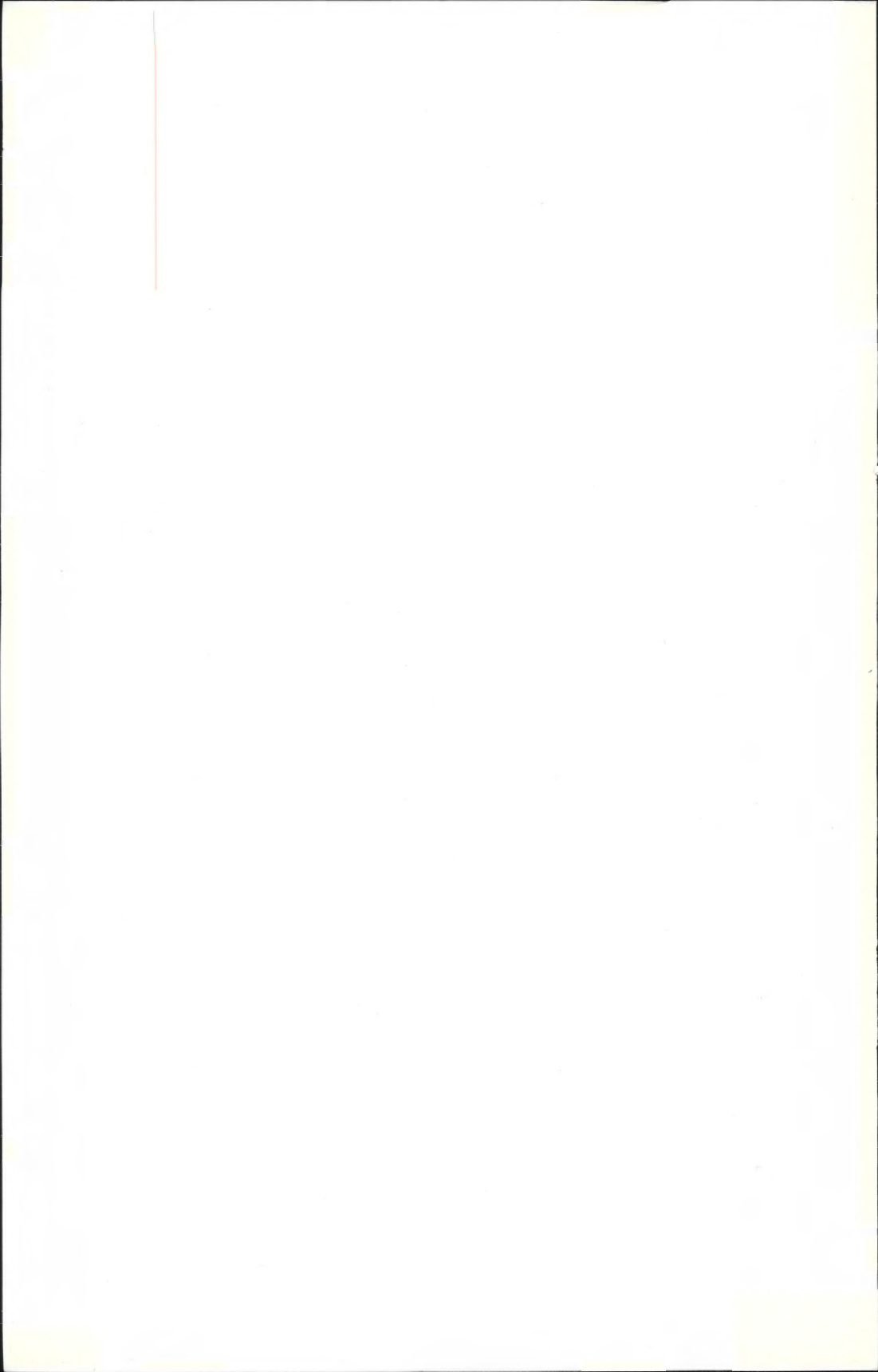# at Arlington

McNair Research Journal

The University of Texas at Arlington McNair Research Journal

Summer 1999 ~ Volume 3

The University of Texas at Arlington
McNair Research Journal

Summer 1999   Volume 3

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Note: In general appendices have not been included in this publication. Persons wishing copies of appendices may contact the McNair Scholars office at The University of Texas at Arlington, PO Box 19509, Arlington, TX, 76019.
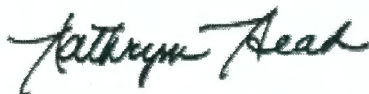
Notes from the Director

The goal of the McNair Scholars Program is to promote the scholarly development of qualified academically talented undergraduate students at The University of Texas at Arlington to help them pursue doctoral degrees in their fields of study. A major component of the program is the summer research internship which pairs a scholar with a faculty mentor who then together conduct original research. At the conclusion of the research internship, the scholar writes a paper detailing the research and then presents the paper at a formal campus event and at subsequent research presentations. These research papers are published each fall in the McNair Research Journal.

We are very proud of the outstanding work accomplished by our scholars this summer. The hard work, dedication, and persistence required in producing new knowledge through research are most evident in the articles in this journal. The guidance and careful monitoring of our faculty mentors are also apparent in the quality of the papers. We very much appreciate the knowledge, expertise, caring and patience of our fine group of faculty mentors.

For their ongoing support and assistance, we thank Dr. Dale A. Anderson, Vice President and Dean of Research and Graduate Studies, and the entire Graduate Studies staff. We also extend our appreciation to the representatives from each of our colleges who make up the McNair Scholars Program selection committee.

Congratulations McNair Scholars on your achievements this summer! Best wishes on your continued academic success! The McNair Scholars Program is here for you and stands ready to assist you in reaching your graduate education goals.

Kathryn Head

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Architecture as the Highest Expression of Twentieth Century Culture: A Look at the Guggenheim Museum in Bilbao

Miguel Angel Picart

Mentor: Carroll Lee Wright, Dean, School of Architecture

ABSTRACT

Even before the debut of the Guggenheim Museum in Bilbao in the latter part of 1997, it had been stirring up some strong emotions among the critics. Is the Guggenheim Museum in Bilbao the highest expression of twentieth century culture? The first part of this project's qualitative research consists of a historical overview of the relationship between culture and architecture. The second part consists of an actual visit to the Guggenheim Museum in Bilbao to document the building and experience the architecture first hand. The last part of the research consists of an examination of the museum through the critical framework of three theoretical texts: Critical Architecture and Contemporary Culture edited by Lillyman, Moriarty and Neuman, Chora L. Works by Jacques Derrida and Peter Eisenmann, and Architecture and Disjunction by Bernard Tschumi. Finally, my conclusion is that the Guggenheim Museum in Bilbao speaks a high language of architecture and is the highest expression of our twentieth century culture.

"A true artistic sensibility keeps pace with the achievements of humanity as a whole. Since these are constantly developing, our sense of art, and with it art itself, is bound to follow this progression." –Otto Wagner

Bilbao, Spain, a tiny wedge-shaped area on the Iberian Peninsula's Atlantic coast, is the fourth largest city and home to nearly half of the 2.1 million inhabitants of the Basque region. The museum is the first step in the redevelopment of a former trade and warehouse district along the south bank of the Nervion riverfront. This bold urban-renewal scheme was intended to transform this deteriorated port city, gravely afflicted by accumulated debts, a 25 percent unemployment rate, industrial pollution and outmoded steel and iron trades, into a center of clean industries (service, financial and high tech) with important tourist and cultural offerings. The Guggenheim Museum Bilbao (henceforth referred to as GMB) (Fig. 1), conceived by the Basques in 1989, was finally completed and opened to the public in October of 1997. The GMB was the result of a unique collaboration between the Basque Country Administration, which finances and owns the project, and the Solomon R. Guggenheim Foundation in New York City which will operate the museum, providing the core art collection and programming. Directly accessible from the historic and business districts of the city, the museum marks the center of the cultural triangle formed by the Museo de Bellas Artes, the University and the Old Town Hall.
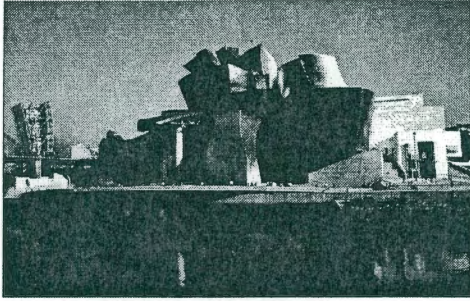
Figure 1

From the beginning, the vision of Thomas Krens, the Guggenheim Foundation's director, to open a new Guggenheim Museum in Bilbao was criticized. No one wanted a uniform, homogeneous museum system, with London indistinguishable from Rome, like the American supermarket system. Some wondered whether a far-flung collection could be properly cared for or whether Krens was playing fast and loose with traveling masterpieces just to make money. One problem that both Krens' supporters and critics could agree on was that he had never shaken his reputation as a "numbers cruncher" more interested in deals than in art. Many Basques denounced the whole project as "cultural imperialism." They criticized the use of public money for a museum whose design, exhibitions and concept were made in the United States, while local artists' organizations and museums suffered budget cuts. The Basques also wondered if the $5 million spent annually on acquisitions would benefit local artists.

Despite all the scrutiny and numerous budget scandals that leaked to the press, the project continued. The architect chosen from a short list of world-renowned architects for the project was Frank O. Gehry whose work has also been scrutinized by the architectural critics. While other creative architects of his time usually explained systematic theories of design in rhetorical or controversial writings, Gehry felt no need to validate his work in that way. Critics had labeled him as an artist-architect whose emotional appeal took precedence over the intellectual engagement in his designs. According to Howard Gardner, the Harvard psychologist, "If a creator becomes astonishingly successful by his own criteria he runs the risk of repeating himself." What critics feared was that Gehry used designs that worked in previous projects and repeated them in future projects without taking into consideration the design possibilities available at the new sites. Prior to completing the GMB, Gehry designed the Frederick R. Weisman Art and Teaching Museum in Minneapolis, Minnesota. The timing of these two projects coincided and one can't help but notice the similarities between the two. Gehry's design of the GMB, despite the Basques fear of "cultural imperialism," was perfectly molded to fit the site and respected every aspect of their culture.

Today the architectural profession is continually challenged to find the most potent cultural images, geometric forms and materials in a country and interpret them to generate new architectural styles. In order to understand how well the GMB is interrelated to our current global culture, one must first look at how past architectural movements have been influenced by culture during their time. The term

"International Style" was widely adopted in the 1920's to indicate the increasing number of buildings constructed all over the world in the modernist mode. International Style buildings were predominantly made of white reinforced-concrete with beautifully expressed interior spaces, but the fact remained that they did not express the local cultures. The name was important in the context of world political changes that ensued soon after 1945, because after World War II the practice of architecture became widely international. The period prior to 1945 was not notable for global acceptance of new design; there was no such acceptance until the later 1940's, '50's and '60's. During the 1960's and 1970's it came to be seen as a matter of prestige that new development in Third World countries should be in the more modern style of the day, as opposed to an appropriate local style. Only now are the side effects of this "cultural imperialism" beginning to make themselves felt, requiring of architects a new sensitivity to the culture and society in which they work, especially so if the culture is not their own. Not until the 1980's did the situation begin to change: an increasing number of indigenous architects were educated either at home or abroad and began taking responsibility for the buildings in their own cultures. Once again these local architects began exerting an influence upon the artifacts they produced. The lapse in new building activity over the last decade or so (due to the recession) has given ample opportunity for clients, users and architects to consider the social and technical viability of the buildings of the post-1945 boom years. It remains to be seen if the pluralistic architectural style of today creates the greatest surge of building yet seen (due to the highest levels of world trade ever and a strong dollar). All this will benefit society, creating a new spatial order for the twenty-first century.

A good indicator of culture is current architecture. In recent decades, architecture has tended towards a stylistic pluralism comparable to the diversification present in contemporary art. Art, through our society's diversity, is searching for forms of expression that open new paths for experimentation. We are currently living in a time where there is no defining movement in art or architecture. According to architect Mies van der Rohe, "No cultural activity, including architecture, is possible unless one understands the epoch." Mies believed that an architect's work had to be expressive of the times in which he was living; his designs depended on the spirit of the times or the Zeitgeist. Traditionally, every era has manifested a unitary organizational strategy called a Zeitgeist. Today the world can be explained not by a single Zeitgeist, but by two. The first division is a traditional one based on land, industry and people (an example of site-specific). The other is based on information, which links technologically and culturally sophisticated world centers such as Berlin, Tokyo and New York. Architects must now choose between adopting site-specific schemes for undeveloped cities or creating a new framework and system of organization that will transform and define heterogeneous, information-age cities.

In an interview with Dr. Lewis Baker, head of the Philosophy Department at The University of Texas at Arlington, I was able to identify and discuss the current spirit of our time as being technological. Our current global culture believes in and worships technology. Technology is bringing worlds together and creating a global culture that has pretty much the same taste and likes. The general consensus

of this new global culture is that technology is the driving force in most fields such as business, medicine, communication and education. Technology is changing the way we communicate. Business today could not be conducted as fast or as efficiently if not for computers and the Internet. Advances in technology have allowed people to do things experts considered impossible a few decades ago. New discoveries in DNA have lead forensics experts to catch a thief by identifying a single strand of hair. Scientists have also been able to clone animals and are now able to correct certain disabilities in a child while he or she is still in the womb. We see miracles like these on television and tend to focus on the ideas and the technology that drive them.

Because the GMB was constructed using the latest technology and the most technologically advanced materials, and also because it was very sensitive to the surrounding culture, it is the highest expression of twentieth century culture. The GMB could not have stayed within the construction budget allotted by the Basque Administration had it not been for CATIA, a highly-advanced, three-dimensional modeler originally developed for the aerospace industry to map curved surfaces with finite numerical control (Fig 2). Each point on the model's curved surface is mapped through a digitizing process, and the resulting computer data is transferred into CATIA where building systems are developed and coordinated. This data could then be given to a contractor who, with another computer program called BOCAD, could generate the brace-framed and secondary steel structures for the museum (Fig 3). Many of the structures Gehry is currently developing are only possible with the aid of a computer. In an interview with *Architecture* magazine Gehry explains, "In the past, there were many layers between my rough sketch and the final building, and the feeling of the design could get lost before it reached the craftsman. It feels like I've been speaking a foreign language, and now, all of a sudden, the craftsman understands me." Jim Glymph, a principal of Frank O. Gehry and Associates, also said, "It might have been a sketch idea, but we would never be able to build it. Bilbao could have been drawn with a pencil and straight-edge but it would have taken us decades." This is very clear once people see how Gehry has managed to blur the line between sculpture and architecture. These shapes could not have been built at any other point in time.
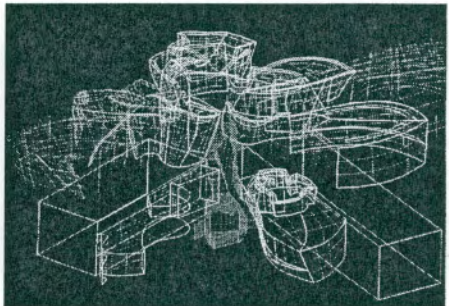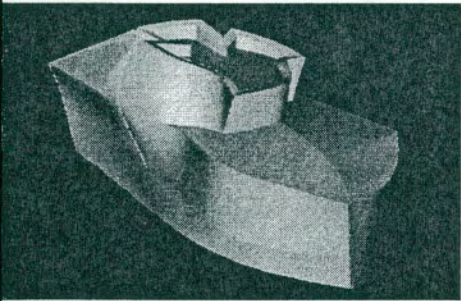
Figures 2 & 3

Early this century, reinforced concrete enabled architects such as Le Corbusier and Frank Lloyd Wright to explore the unlimited possibilities of the open plan. Once vast areas could be spanned with limited materials, architects shed cellular room sequences and began to create sculpted spaces. What made their buildings marvels in their own time was that they pushed the technology and the materials to their limits. The GMB does these things through the construction of its freeform shapes that pushed the technological envelope through such technologically advanced materials as titanium. Titanium, the star of Gehry's museum, is the super-light material used to shave pounds off mountain bikes, give strength and flexibility to spacecraft, and now enhance modern buildings (Fig. 4). Initially, Gehry had leaded copper in mind but since it was outlawed as a toxic material he was forced to look for an alternative. The first alternative was stainless steel but it would have increased the cost of the building considerably. He wanted to stay with the idea of using metal because he didn't want to lose the industrial feel of the site. Eventually he acquired titanium, which is only mined in Australia and Russia, at a very insignificant cost due to the demise of the Soviet Union. Thanks to the new computer program Catia, the project was finished in time. Otherwise, each one of the 33,000 separate sheets of titanium that had to be specially cut by machine, would have taken years to assemble. While visiting Bilbao, I noticed that every day a cloud of pollution would hover over the city and slowly settle on the buildings. That is why the city washes the streets with fire hoses every night (in order keep the streets clean). Due to this unfortunate circumstance, Gehry chose titanium because a sheet one-third of a millimeter thick has a one-hundred-year guarantee against stains and rust from urban pollution.

Figure 4

In these pluralistic times when there is no dominant architectural movement, Gehry blurred the lines between sculpture and architecture to create his masterpiece. Being very conscious of the double Zeitgeist, he adjusted his design to properly fit the local culture of the Basques. Though it may look like a couple of giants had a picnic at the site of the museum and left without cleaning up their aluminum wrappers, there is much more behind this design than just chance. The museum's largest shapes are reminiscent of power plants while the shapes of ship hulls and prows allude to Bilbao's industrial and shipbuilding mastery (Fig 5 & 6). From the view on the bridge, the museum looks like a ship sailing away on the river. He seems to have also combined organic principles of design with more geometric

principles giving the museum a feeling of constant movement. Gehry once said that the city is a sculpture in itself, which gives the building a mood and a movement. The GMB is constantly changing due to the way the titanium catches the light; the viewer never sees the same museum twice. The look of the museum is affected by the weather, which has a tendency to change the mood of the building as well as the city. Another way that he used his design to fit the local culture is not so obvious from the ground. In plan, the museum's galleries unfold like the leaves of a flower (Fig 7). He took the configuration of a flower, which in the predominantly Catholic Basque country cannot but have overtones of a sublime symbol of holiness, the rose of the Virgin Mary. In shifting the context of the flower from the cathedral to the museum he gave it a whole new meaning in a new space. Although critics have labeled Gehry as an artist-architect whose emotional appeal takes precedence over his intellectual engagement in design and although they question his contribution to the discourse in the profession, he has brought a visceral element to architecture.
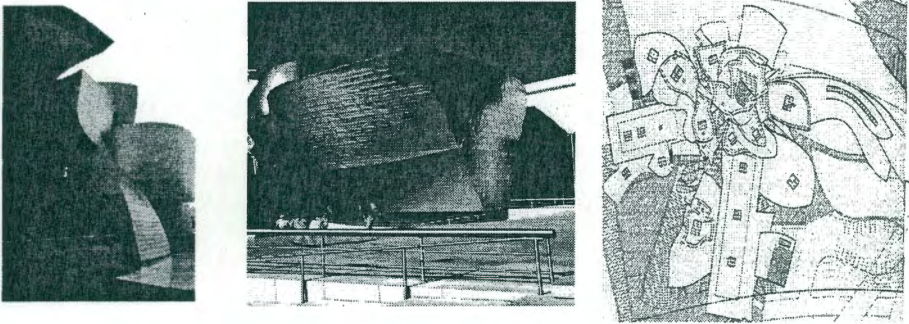
Figures 5, 6 & 7

In an interview with George Wright, former Dean of the School of Architecture at the University of Texas at Arlington, who now teaches a class entitled "Museology and Architecture," we discussed some of the more obvious reasons the GMB is such a success. Much like Frank Lloyd Wright's design of the Guggenheim Museum in New York, Gehry's design of the Guggenheim Museum in Bilbao is one of a kind. No one else could have created such an icon. A group of artists once told Gehry that they didn't want an ordinary box-shaped building to display their art. Artists today want to exhibit their art in museums that are themselves considered works of art. Most museums defer to the art they display but the GMB openly and determinedly upstages the art. The GMB is a risky and dangerous design that breaks all previous rules and guidelines, and that is why it is so successful. Most important of all, the GMB is a great step forward in the use of materials and systems. It breaks from the commonly used concrete and masonry materials. The GMB is truly a technological, artistic and philosophical triumph.

Good architecture stimulates us spiritually and intellectually. The aesthetics of a work of architecture are in the eye of the beholder. Though Gehry has been criticized for the lack of intellect behind his work, his design of the GMB works on many levels other than pure intellect. The GMB pushes the limits of our latest technology. It reflects both the current global culture and local culture of the site,

and it moves us both spiritually and emotionally. Even the most intellectually stimulating architecture can fail and the least can succeed. In the words of Mies Van der Rohe, what makes the GMB such a great work of art is that "it breaks with the past, mirrors the present and magnifies and anticipates the future". This museum is truly the highest expression of our twentieth century culture.

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The Effectiveness of Actuated Passive Porosity on Roll Control

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Mentor: Dr. Kambiz Alavi,

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ABSTRACT

The flight control of modern combat aircraft has become increasingly complex with greater flight speed, further range requirements, and new enemy aircraft. Traditional flight controls include such things as the rudder, ailerons, and the elevators, but these controls can become less effective at a high angle of attack. Innovative control effectors are being studied that would aid the pilot in accomplishing mission objectives by providing better handling over a larger flight envelope. The mechanisms that are being studied include fluidic thrust vectoring, actuated passive porosity, and other fluid injection systems. High performance aircraft simulations are being modified to include some of these innovative control effectors. Once tests have begun with the modified simulation programs, the data from these tests will be studied to understand some of the effects of actuated passive porosity.

INTRODUCTION

From the Wright Flyer to current high performance fighters, the control of aircraft has gone through tremendous changes. Current aircraft, both commercial and military, are flown using not only traditional control effectors like ailerons and elevators, but also non-traditional effectors like thrust vectoring. Fighters are designed with the dual goals of maneuverability and speed variation (which can range from subsonic to hypersonic). With this increased flight envelope the potency of traditional effectors may be seriously decreased or eliminated. Thus, there has been a need to develop innovative control effectors (ICE) that will aid the plane in certain flight conditions. In current high performance aircraft the effectors are no longer directly controlled by the pilot but instead by a flight computer. The computer senses the pilot's commands and current flight conditions and sends instructions to the control surfaces to activate according to a certain order, magnitude, and speed. With the advances in digital circuits and increased processor speeds, flight control computers have been developed with vastly increased power and the ability to control the large number of effectors currently available on modern aircraft.

Although the additional effectors that are in use have greatly aided the pilot in the flight of the aircraft, many more innovations are under study. One of the most recent attempts at studying ICE for controlling the aircraft at a high angle of attack (AOA) was the NASA High Alpha Research Vehicle (HARV). This aircraft is a modified McDonnell Douglas F/A-18, outfitted with thrust vectoring (TV). Furthermore, the HARV was the first plane to incorporate the active forebody controls (actuated strakes) to improve rolling moments. The thrust vectoring was used to deflect the thrust plume to allow multi-axis movement. This allowed the thrust vectoring to influence pitching, rolling, and yawing moments. The effects of

the TV can be clearly seen in Figure 1, which shows the thrust being directed upward producing a force that would pitch the nose upward in flight.

The actuated forebody strakes help provide rolling moments at high angle of attack. The results of the study on these new control effectors proved that TV and forebody strakes were very succesful means for controlling the aircraft. A traditional F/A-18 would have not been effective at AOA exceeding 35 degrees, but with the thrust vectoring capability and the forebody strakes, the plane was controllable up to an angle of attack of 60 degrees.

PROCEDURE

The design and development of an aircraft's control law requires detailed and accurate dynamic simulation models. The research begins with wind tunnel test data, which is specific for a certain type of configuration. Tables of data will be created from these tests, and a control law will be created for the aircraft in its simplest form. The modeling of the aircraft, which is the next step, is done using a simulation tool that will allow the aircraft to be observed at certain flight conditions. The tests involve trimming the aircraft at the given conditions and then applying small control surface deflections to study the aircraft's response. If the model is correct, the aircraft should return to trim flight with very little oscillation. Once the results of these tests are complete, the control law will be updated to correct for any undesirable effects. This cycle of refinement continues until the model and control law can account for all linear and nonlinear effects. Once the control law is fully functional, it is incorporated into the flight control computer and a piloted test that allows 6 degrees of freedom for the aircraft is performed. After these tests, the control law is refined further until the piloted simulation performs without error.

OBJECTIVE

One future control effector being studied is actuated passive porosity. Porous surfaces act by allowing air to flow into the wing, thereby reducing lift. The study of actuated passive porosity is only at the beginning stage. As of now wind tunnel data has been gathered for low speed flight with sideslip set at zero degrees. The first attempt at modeling and performing simulation tests on the passive porosity panels will be discussed here.
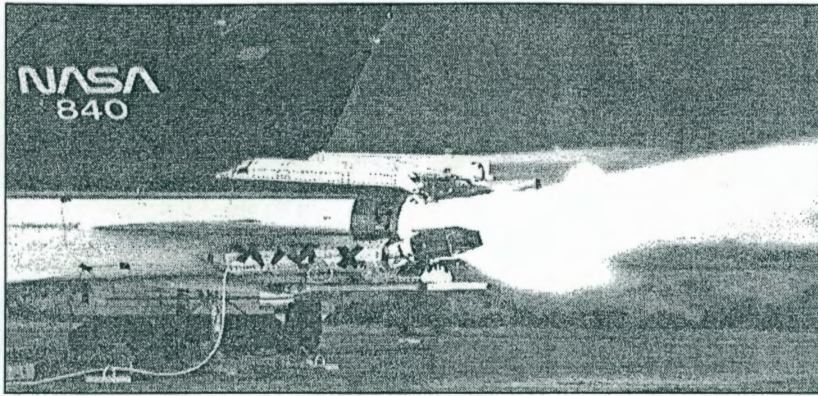
Figure 1. Effect of thrust vectoring fins on the thrust flow plume.

PASSIVE POROSITY

Besides the use of thrust vectoring and actuated forebody strakes, an innovative control effector being studied is actuated passive porosity. Activated passive porosity is based on panels that consist of many tiny holes that will be placed on the wing. Unlike external movable controllers, such as the elevators, this is a seamless controller that has all the internal mechanisms contained within the body of the aircraft. The seamless design makes the plane less observable to radar (a moveable surface normally reflects radar emissions, thus causing increased radar return cross section). Another key benefit of the seamless design is that passive porosity will not require a great deal of structural reinforcement at the leading edge of the wing where the panels will reside. The function of passive porosity is that it reduces lift, which induces a rolling effect on the plane. This would essentially aid or replace the ailerons at that certain high angle of attack where they cease to be effective.

The function of passive porosity can be further explained by understanding the flow separation of air over the wing at a high AOA (Figure 2). As the figure shows, the air is no longer smoothly flowing over the trailing edge of the wing and has instead turned turbulent. Turbulent flow, which causes buffeting, is a characteristic observed as an aircraft has entered a stalled situation. During this separation of the air over the wing, the leading edge of the wing is still experiencing smooth flow. This shows that the leading edge is a valid location for a control effector at these high AOA. This effective location will be used to induce a roll as the passive porosity panels are activated (Figure 3). The roll is caused by reducing the lift on the side of the wing on which the panels are activated, causing a roll toward that side. Roll would normally be impossible at AOA of approximately 35 degrees or more.

The actual incorporation of porosity into the leading edge of the delta-winged aircraft being tested is done with actuated plates that would lower below the eight porous panels of the leading edge, thus opening the holes and reducing lift (Figure 4). This becomes complicated since the lowering of the plates would need

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additional actuators, which would have to be controlled and monitored by the flight computer. The eight panels can be activated in any order and remain active for any duration.

The wind tunnel tests were performed at approximately 0.3 mach and AOA's that varied from –3.95 to +90.0 degrees. The tunnel data is used to add correcting terms to the equations of motion (EOM) that will account for the effects of passive porosity (Figure 5). Deltas are added to the EOM for such things as deployed landing gear and for the effects of control surface deflections. The equations are used to calculate the aircraft's accelerations at a given set of conditions.
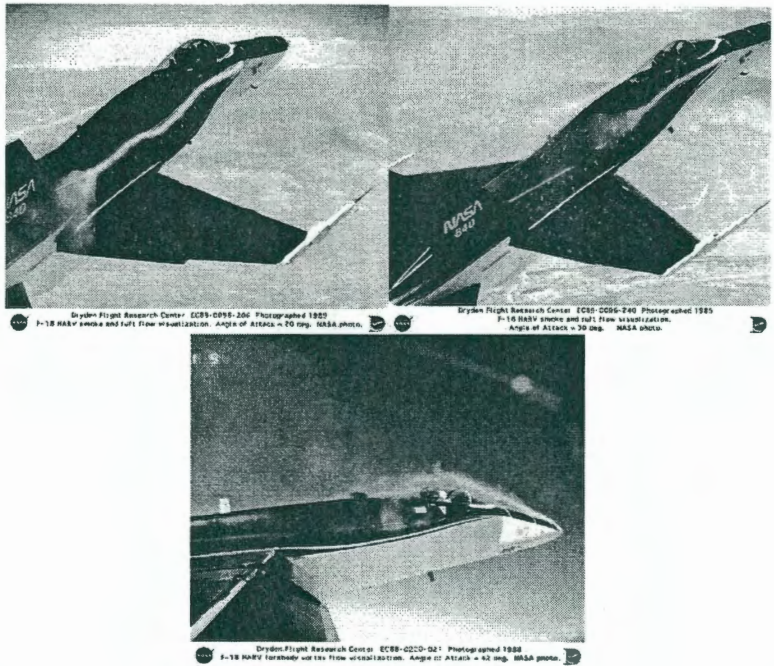
Figure 2. The airflow over the wing is becoming more turbulent as AOA increases. 20 degrees on top left and 30 degrees in top right and 42 degrees on bottom.
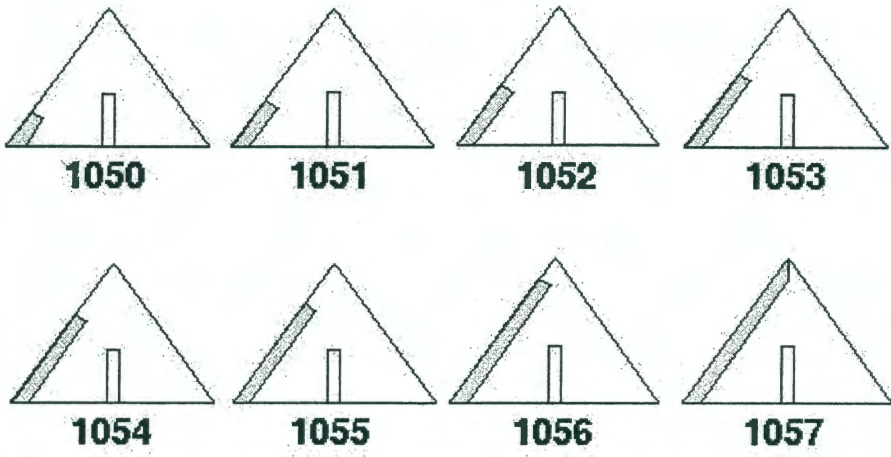
Figure 3. Passive porosity panels in increasing activation.
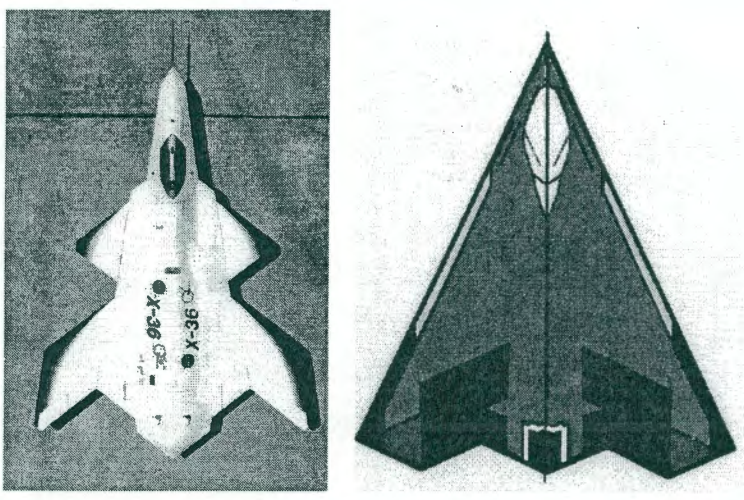
Figure 4. (left) The NASA/ McDonnell Douglas X-36 proposed delta wing aircraft. (right) Another proposed delta wing aircraft with the various control surfaces shown.

$$Drag,\ D = qSC_D \qquad Rolling\ Moment,\ L = qSbC_l$$
$$Lift,\ L = qSC_L \qquad Pitching\ moment,\ M = qScC_M$$
$$Sideforce,\ Y = qSC_Y \qquad Yawing\ Moment,\ N = qSbC_N$$

Figure 5. (left) Force Equations. (right) Moment Equations.

The coefficients C_D, C_L, C_Y, C_l, C_M, C_N, are predominately a result of aerodynamic angles alpha (angle of attack) and beta (sideslip). The total aerodynamic coefficients, C_D, C_L, C_Y, C_l, C_M, C_N, are usually expressed as a baseline component with the addition of correction terms (Figure 6). The baseline component is the result of the aerodynamic angles as mentioned above.

$$C_D \equiv C_D\ (C_L) + \Delta C_D\ (\delta e) + \Delta C_D\ (\beta) + \Delta C_D$$

$(M) + \ldots$

$$C_L \equiv C_L\ (\alpha,\ T_C) + \Delta C_L\ (\delta e) + \Delta C_L\ (M) + \ldots$$
$$C_Y \equiv C_Y\ (\beta) + \Delta C_Y\ (\delta r) + \ldots$$
$$C_l \equiv C_l\ (\beta) + \Delta C_l\ (\delta a) + \Delta C_l\ (\delta r) + \ldots$$
$$C_M \equiv C_M\ (C_L,\ T_C) + \Delta C_M\ (\delta e) + \Delta C_M\ (M) + \ldots$$
$$C_N \equiv C_N\ (\beta) + \Delta C_N\ (\delta r) + \Delta C_N\ (\delta a) + \ldots$$

Figure 6. Component Buildup Equations

The method for adding the deltas due to passive porosity is by analysis of tables such as in the following section of data related to the outer right panel of the right wing being turned on.

Passive Porosity Table for Panel 1050 (right side)					
CL	ΔC_D	ΔC_M	ΔC_l	ΔC_N	ΔC_Y
-0.04314875	-0.00052579	0.00037881	0.00059051	-0.00010115	0.00056986
0.00156783	-0.000247016	-0.00147191	0.00074687	0.00007070	0.00001510

Coefficients in this table are functions of CL, which is the coefficient of lift on the aircraft. The CL is calculated from the AOA using the body axis to wind axis transformation. The following equation calculates the CL from the inputted AOA (converted into radians).

$$CL = COS\ (AOA) * C_N + SIN\ (AOA) * C_A$$

Once the CL is calculated it is used to perform interpolation and thus calculate the exact values of C_D, C_Y, C_l, C_M, and C_N.

SIMULATION

The actual analysis of the passive porosity tables to determine the deltas was done using computer simulation tools. The modeling of the passive

porosity was done using the MATLAB, FORTRAN, and C programming languages. Each programming language was needed because of the varying types of simulation packages that were ultimately used. The simulation tool in which these programs are to be implemented is the ATLAS (Aircraft Trim and Linearization And Simulation). This Lockheed-Martin simulation environment is the first used to test the effects of passive porosity. ATLAS will be the first simulation tool used since it is a well tested and very robust simulation environment. The next step of the study will be to implement the C program into ASET (Aircraft Simulation Environment Tool), the primary purpose of which is to enable a piloted simulation evaluation.

Modifying the simulation was first performed in MATLAB, which allowed a stand-alone program to be obtained relatively easily so that a sense of the programming considerations could be observed. (The actual program layout may be observed in Figure 7). Once this was done the program was reformatted into FORTRAN and C, with results from the different programs tested against each other to ensure proper agreement among the results.
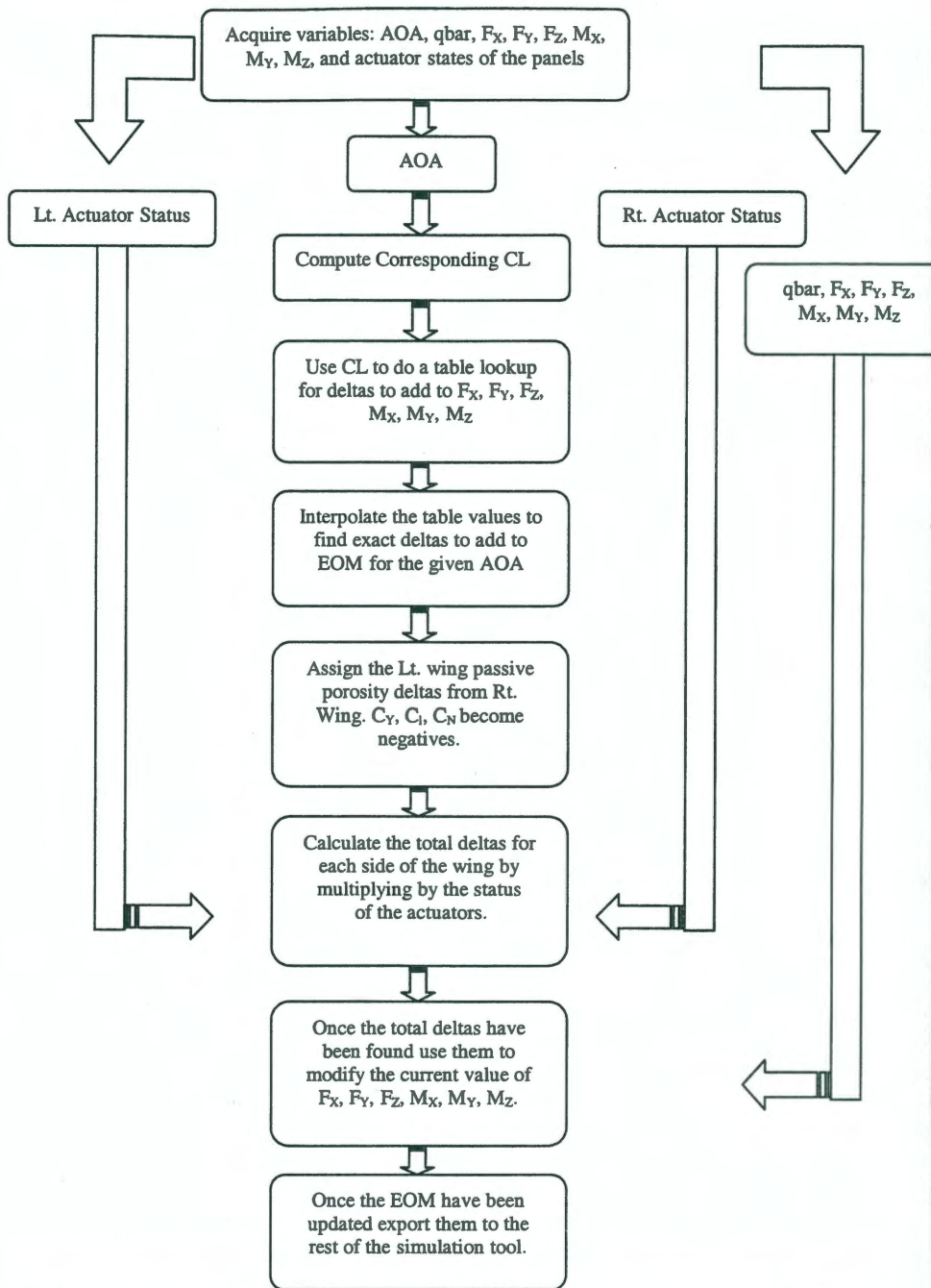
Figure 7. Program Structure for implementation of passive porosity deltas into the EOM.

TEST CASES

As a means of testing the program, a series of tests were performed throughout the development process. The first step was to analyze variables in intermediate steps of the program. This included testing the deltas to

assure the interpolation, and the resulting deltas were within reason. Another method of testing the program was to graph CL versus AOA, as a means of determining whether the table look-ups were correct. Once this was correct a test file was created that would vary the angle of attack and plot effects on C_D, C_Y, C_l, C_M, and C_N versus CL or AOA, depending on which was desired. The tests were limited to a beta of 0.0 and mach was held at 0.3. The test proved to be an efficient means of debugging the program, since the results were compared to a SIMULINK program that was written to perform the same function. The plots of some of the forces versus AOA are given in Figure 8.
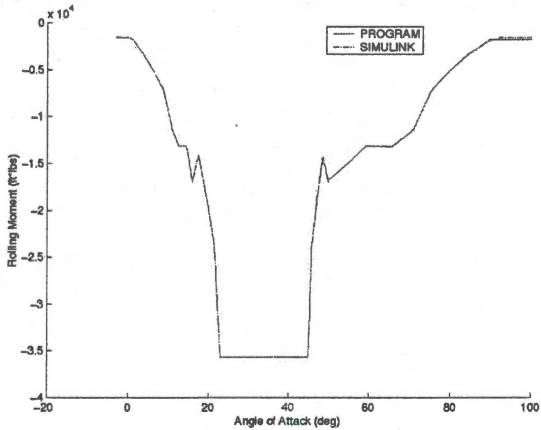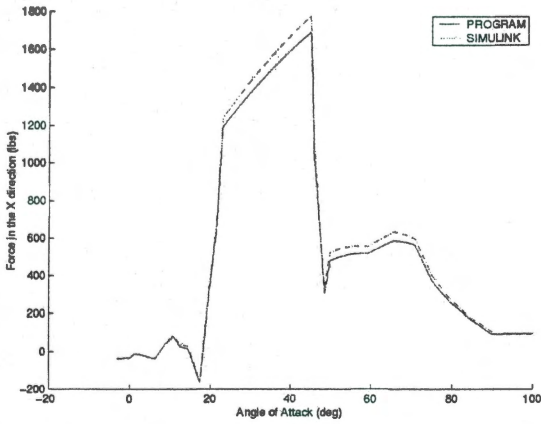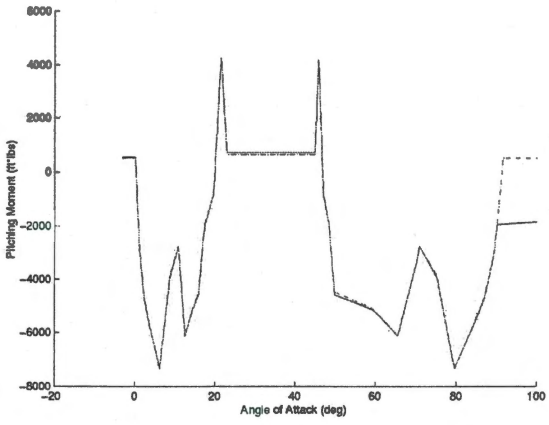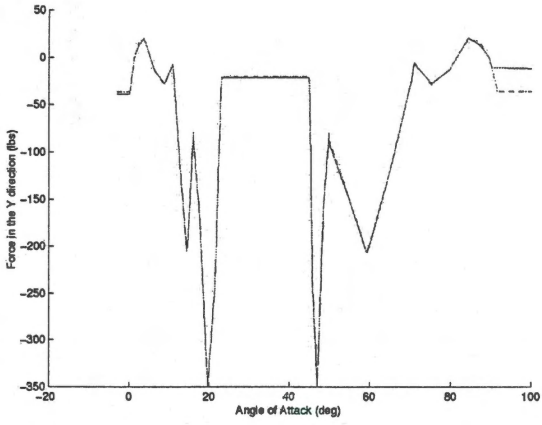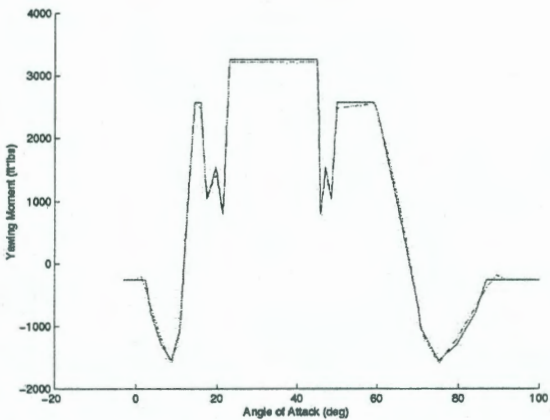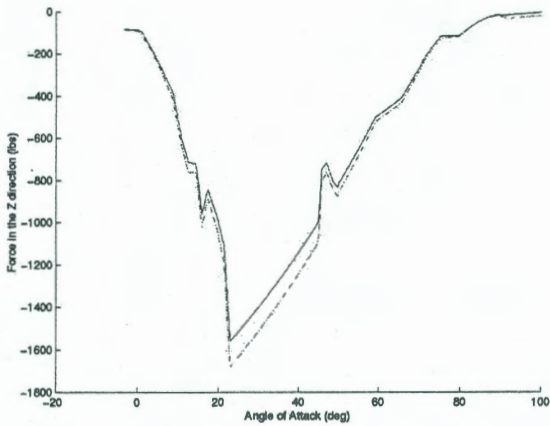
Figure 8. Plots of Coefficients of Force (top) and Moments (bottom panel 1050 only on the left wing) being on.

Consistency between the FORTRAN program and SIMULINK was observed as shown above. The plots of the forces and moments were accurate with essentially no differences between them. The reason for the mirroring effect seen in the graphs is that the CL increases until a stall is reached. After the stalling state is attained, the CL regresses and achieves the same values as before the stall. This type of behavior is only visible in the wind tunnel, since at the moment of stall the aircraft will no longer be able to climb in AOA without thrust vectoring. The most interesting plot is that of rolling moment which shows that as AOA varies from 0 to 35 degrees, the rolling moment can increase in absolute magnitude. This difference in magnitude shows that as AOA is increased, the passive porosity panels can aid roll control. The negative value of the roll control shows that as the left panel is activated the roll is in the negative direction,

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which was anticipated. The derivative of the rolling moment is large, so the duration of the panel's activation will have to be kept quite small for any benefit to be achieved that would maintain control of the aircraft. The aircraft would essentially be performing a corkscrew type rotation if the panel was on for too long. Another expected result was the plot of CL, which shows when the rolling moment is negative, the lift is also negative, which again was expected.

CONCLUSION

While the study of passive porosity is only beginning, the panels are proving to be a method for aiding the pilot in achieving his objectives. The rolling benefits experienced have showed that this preliminary study has been worthwhile. Also, the simulation methods used proved to be an effective way of modeling the deltas that were added to the EOM. The next step that needs to be performed will be to incorporate the program into the simulation environment. Once this is completed, the test will include the activation of multiple panels with varying amounts of duration. Other factors such as mach, beta, and states of other control surfaces will also have to be taken into account to gain a better understanding of the effects of passive porosity. Further research in this area will ultimately lead to testing this innovative control effector on actual combat aircraft.

ACKNOWLEDGEMENTS

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Transition of Domain Name Registration to a Competitive Market

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ABSTRACT

This paper discusses the Domain Name System (DNS) of registering Internet domain names, Network Solutions, Inc.'s (NSI) six-year monopoly on DNS registration, and the proposed transition of DNS operation to the private sector. The purpose of this study is to compare the domain name system of registration as managed by NSI, under government contract, with the proposed private, competitive registration system. The study included the use of an online survey to measure qualitative expectations of domain name registration. DNS consumer expectations were measured through a survey of Internet experts using the Delphi technique. This technique is designed to survey a large number of experts and obtain group consensus without gathering the group. Likert scaling was used to measure the degree to which the expert disagrees or agrees with statements presented in the questionnaire.

HYPOTHESIS

Competitive operation of the Internet Domain Name System will lead to greater responsiveness to consumer needs.

INTRODUCTION

The Internet began as a government funded communications project to link Department of Defense personnel and contractors. The computer communication network was later expanded to include research and education and soon thereafter expanded to include the public. The network quickly became a medium for communication, commerce, and education and the U.S. Government contracted the duties of registering the names used as computer addresses, or domain names, to Network Solutions, Inc. (NSI). The contract with NSI was scheduled to expire on September 20, 1998, but was extended until September 30, 2000, on the condition that NSI cooperate with the transition to a competitive market. The September 2000 expiration date coincides with the Clinton administration directive to make domain name registration private and competitive by that date. This paper focuses on the Internet, its market structure, and the government action driving changes in domain name registration.

The Internet is a global network of independent, interconnected computers without geographic boundaries and is unprecedented in its form and function. The Internet as a communication device and vehicle for commerce is in the infant stages of its development. Changes to domain name registration policy, management, and technology are ongoing and this paper is limited to information that was available as of July 16, 1999.

This discussion will focus on the most common generic domain suffixes, .com, .org, and .net, which represent companies, organizations, and network,

respectively. This paper will not address the proposed expansion of generic domain categories or the introduction of additional suffixes.

THE INTERNET

Today, computers are small, affordable, powerful, portable, and are widely used in business and personal communications, domestic and international commerce, and world-wide education.

The Internet began as the Advanced Research Projects Agency Network (ARPANET) in the late 1960s, under the direction of the U.S. Department of Defense. ARPANET was designed as a communication tool for scientists and researchers. In the early 1980s, the communications network was split to serve military and university research facilities. The university portion of the network became the Internet. By the late 1980s, the Internet had expanded to include commercial and consumer use, and software was being written that would allow users easy access to documents that had been linked together. This software was the forerunner to today's Internet browser. Introduction of the "...Netscape browser, in the mid 1990s, gave individuals an easy way to navigate the Internet...,"[22]masking its intricacies and making it the popular communication tool that it is today. In 1992 the U.S. Congress granted the National Science Foundation (NSF) statutory authority to commercialize the Internet, and shortly thereafter, electronic mail (e-mail) and browsing through the World Wide Web (WWW) became common uses of Internet.

DOMAIN NAMES

In order to use Internet applications, computers connected to the Internet must have distinct identifying names, similar to the assignment of telephone numbers. "This name, or 'domain', is a customized electronic address which references an individual set of Internet Protocol (IP) numbers. The IP numbers enable a computer host to locate a remote computer. Each domain name (and IP number) must be unique..."[22].

MONOPOLY ON DOMAIN NAME REGISTRATION

The rapid expansion of ARPANET created a need to seek one or more firms to manage network information services and a database in which domain name registration records were stored. As registrations became increasingly commercial, the cost of network services and domain name registration began to exceed the National Science Foundation's budget. Accordingly, it became necessary that domain name registrants, not the U.S. government, pay the cost of registration services. The National Science Foundation issued a *Solicitation for Network Information Services Manager* on March 12, 1992, in a move to privatize domain name registration. The Foundation contracted with NSI, in January 1993, to provide domain name registration services. Registration of domain names was processed by NSI on a first-come, first-serve basis without verification of the registrant's right to use trademark names. In 1997, NSI implemented a registration fee of $70 for an initial two-year period, with an annual renewal fee of $35. NSI's resulting monopoly of registration services and its registration processes are today the subjects of debate among the Internet community. Providers of Internet services feel the domain name

registration system should be open to competition. A competitive market would allow the consumer to choose among a variety of service packages in much the same way that consumers now shop for computer equipment and software.

A CALL FOR COMPETITION

Dr. Jon Postel first became interested in computer networks as a University of California at Los Angeles student. While a graduate student he joined the research project that built ARPANET, the predecessor to the Internet. Postel "began keeping track of Internet names and numbers on a piece of notebook paper. That function later grew into IANA" (Internet Assigned Numbers Authority)[10]. Dr. Postel "developed the domain name system and the popular suffixes .com and .edu, along with the system that links the domain names to their underlying Internet numbers"[10]. He also served as head of IANA, the body responsible for assigning numerical addresses[28]. Dr. Postel further established a store of public comments regarding the Internet, its infrastructure and operation. It is from this documentation that Dr. Postel drafted the June 1996 working document entitled *New Registries and the Delegation of the International Top Level Domains*. This document describes policies and procedures to allow open competition in domain name registration and provide the domain name governing body with a legal and financial umbrella [17].

On July 1, 1997, President Clinton issued a *Memorandum for the Heads of Executive Departments and Agencies, Subject: Electronic Commerce* which authorized the Department of Commerce "to make the governance of the domain name system (DNS) private and competitive"[18]. The spirit of this Memorandum was to increase competition in the domain name registration market and "facilitate international participation in its management"[28]. On January 30, 1998, the Department of Commerce released The *Green Paper - A Proposal to Improve Technical Management of Internet Names and Addresses* announcing proposed improvements of the Internet Domain Name System[7]. The Green Paper closely followed the recommendations of the *New Registries and the Delegation of the International Top Level Domains* draft. The *Green Paper* espouses the policy that competition and giving consumers more choices should be primary considerations in the technical management of the Internet. The paper sets forth proposals regarding Internet Corporation of Assigned Names and Numbers' (ICANN) authority, domain name registry responsibilities, and recommendations for the control of trademark infringement. On February 20, 1998, the Department of Commerce and the National Telecommunications and Information Administration issued their statement of policy, The *White Paper – Management of Internet Names and Addresses (White Paper)[28]*. Under the *White Paper* the Internet Corporation for Assigned Names and Numbers, a government sanctioned non-profit group, was established to oversee the transition from monopoly to competition. ICANN appointed five companies to perform a sixty-day test of a competitive domain name registry system. Five firms (America Online, CORE, France Telecom, Melbourne IT, and Register.com) make up the "testbed" that was scheduled to run for sixty days, from April 26 to June 24, 1999. At the end of the sixty days, only one firm, Register.com, was partially operational. Register.com was able to implement online registration of domain names, and submit the registrations to the shared registry system, but was unable to

implement procedures that allow the transfer of a domain name from one registrar to another. These technical problems along with disputes among NSI, ICANN, and the Department of Commerce prompted a three-week extension of the testbed period. Open competition is now scheduled to begin on July 17, 1999 [2].

PURPOSE OF THE FIVE COMPANY TESTBED

According to ICANN: "The central purpose of the testbed is to develop a functioning Shared Registry System and to learn from the experiences and expertise of the testbed participants.... The testbed process will help answer the question of exactly how" the competitive system will function [9]. The Shared Registry System (SRS) will provide a database depository for all domain name registration information processed by all registrars of the .org, .com, and .net generic domain name suffixes. The Department of Commerce's *Green Paper* states that the SRS and competitive DNS are based on the principles of maintaining Internet stability, competition, a private-sector coordination process, and representation of the diversity of Internet users. The competitive system will be introduced in phases, as follows:

November 1, 1998	Develop specifications for the SRS
December 1, 1998	Create an advisory group to comment on testing of the SRS
March 31, 1999	Establish testbed participation of five registrars
June 1, 1999	The SRS will be operational and support all accredited registrars
October 1, 1999	Complete the registry/registrar interface to allow equal access, by all participating registrars, to the SRS [24].

Between 50 and 100 organizations are expected to participate in the competitive registration system by the end of summer 1999 [13], and the Shared Registry System will be fully operational by September 20, 2000 [24].

LITERATURE REVIEW

The majority of information for this paper was obtained from primary sources that were available on the Internet. The application of free market theory to the domain name system is a contemporary topic that has not yet been covered in academic journals. However, the principles of free market structure, industry deregulation, and quality of service apply to all industries. In his book *Capitalism and Freedom*, Milton Friedman wrote:

> Historical evidence speaks with a single voice on the relation between political freedom and a free market. I know of no example in time or place of a society that has been marked by a large measure of political freedom, and that has not also used something comparable to the free market to organize the bulk of economic activity [14].

Economic theories are used to analyze business and industry, and firms use this information to develop policies by which the market can be improved. The Structure/Conduct/Performance approach will be used to evaluate the privatization of the domain name registration system.

ECONOMIC DEFINITIONS

The U.S. economy consists of numerous industries, with a variety of markets in each industry. A market consists of all firms willing to buy and sell a product or products. Economic markets are divided among four major categories: perfect competition, monopolistic competition, oligopoly, and monopoly. The structure of each market is characterized by "(1) the number of [firms], (2)...product differentiation, (3)...[control over] product price and quality, and (4) the conditions of entry and exit"[21] (See Table 1). Market conduct refers to a firm's policies towards its market and its rivals. Market performance is an assessment of economic welfare measured by efficient allocation of resources, industry improvements, employment, and firm equity [21].

Table 1 Economic Markets

| | Structure | | | |
	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of Firms	Many	Many small firms	Few large firms	One
Product Differentiation	Standardizd	Differentiated	Standard or Differentiated	One product
Control over price and quality	None– price taker	Limited control	Control	Complete – price maker
Entry/Exit	Easy	Easy	Difficult	Blocked

(left margin: Characteristics)

MARKET STRUCTURE, CONDUCT, AND PERFORMANCE

Literature on economic deregulation and optimal efficiency indicates that deregulated industries in the United States have common elements and behavior [29][11]. These elements include (1) eliminating inefficiencies and improving marketing, operations, and technology, (2) reducing the incentive to over invest in capital in order to reflect a stronger rate of return, and (3) responding more effectively to external shocks, such as natural disasters, computer crashes, and system software failure [29]. Examination of deregulated industries, such as airline and railroad, has shown that it takes time for industries to adjust to a competitive market structure; however, competition results in operational and technological efficiency and better customer service [29]. Without the government intervention inherent in a regulated industry, incumbent and new firms will avail themselves of technological advances and enter existing and new markets by offering an array of

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bundled services and prices, introducing new products and services, thereby making the firms more responsive to consumer preferences.

Performance of firms in the domain name registration process is measured qualitatively, based on service. "Service quality is based on a comparison between what the [consumer] feels should be offered and what is provided"[26]. Measurement of service quality is achieved through the use of SERVQUAL, a survey which measures consumer expectations by comparing a firm's performance against the performance of an excellent firm providing like services. "Underlying SERVQUAL are five dimensions that are used by customers when evaluating service quality, regardless of the type of service. These dimensions are: tangibles, reliability, responsiveness, assurance, and empathy"[26]. These dimensions cover equipment, ability to perform services, dependability, prompt customer service, employee "ability to inspire trust and confidence," and concern given to customer needs, respectively [26].

SURVEY APPROACH

A survey customized for this paper (DNSurvey) was conducted to gather data concerning consumer opinion of a competitive domain name registration system. At the time material was gathered for this paper, five firms had been approved to compete in the domain name registration market; however, only one firm, Register.com, was operational. Register.com had been operational approximately 30 days, making it impossible to measure performance based upon consumer experience. Therefore, it was necessary to perform the DNSurvey based upon expert opinion. Accordingly, the principles of the Delphi technique were used to solicit the opinion of industry experts and formulate group consensus.

> The Delphi technique is a method of eliciting and refining group judgments. The rationale for the procedures is primarily the age-old adage "two heads are better than one," when the issue is one where exact knowledge is not available. The procedures have three features: (1) Anonymous response - opinions... are obtained by formal questionnaire. (2) Iteration and controlled feedback.... (3) Statistical group response...[4][1]

The Delphi technique was used to evaluate consumer opinion of domain name registration performance. A series of statements, concerning need for regulation, operational structure and management of the firm, desirability of various services, and expectations of the firm were presented. Performance measures for service industries are qualitative and subjective; therefore, Likert scaling (see Figure 1) was used to evaluate responses, asking that the respondents indicate the degree to which they disagreed or agreed with each statement.[2]

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[1] The limited research period for this study did not allow for the iteration and refinement of the group responses. The survey was used to obtain and evaluate preliminary performance expectations of the domain name registration system.

[2] See Appendix B for a complete copy of the DNSurvey.

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
O	O	O	O	O	O	O
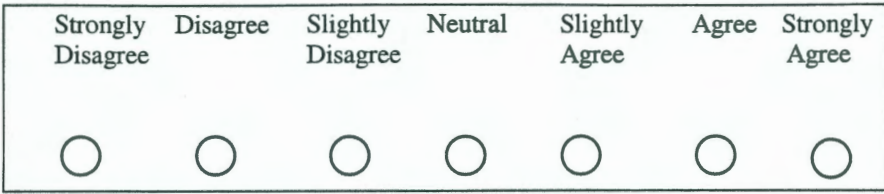
Figure 1 Likert Scaling

Likert scaling advantages include preference by survey respondents because it "is 'more natural' to complete," has a high degree of validity and reliability, and is effective at measuring change over time [19].

SURVEY POPULATION

The DNSurvey was sent out to approximately 110 Internet experts in the high technology industries. The experts were drawn from Information Systems professors, upper level undergraduate students, graduate students, and information technology staff at The University of Texas at Arlington, as well as government and business personnel holding information systems or information technology positions. A response rate of approximately 35 percent was achieved.

TECHNOLOGY

Due to the abbreviated research period it was necessary to secure a survey method that allowed for rapid and accurate collection of a large response sample. This was accomplished through the use of a web-based survey instrument and electronic communication with all respondents. Prospective survey participants were contacted via e-mail, asking for their participation in this survey, announcing the delivery date of the survey, and specifying a reply deadline. The survey questionnaire was posted on a web site published on a University of Texas at Arlington web server. Prospective participants were sent a second e-mail with instructions, background information, and a link to the web address for the DNSurvey. The background information provided an overview of the domain name registration system and descriptions of the testbed firms.

DATA COLLECTION

The DNSurvey form was designed such that only one response would be accepted for each survey statement, thereby reducing response error. Responses to the statements were converted to a score on a scale ranging from 1 (strongly disagree) to 7 (strongly agree)[19]. This method allowed the qualitative responses to be converted into quantitative data for basis analysis. Although anonymity is a feature of the Delphi technique, the survey included a section for demographic information. The demographic information will be used for future study and research on response trends within specific groups, that is, comparison of responses from those with less than five years Internet experience to those with more than five

years experience. Responses were collected online and stored on a web-based file that was downloaded and processed using spreadsheet software. The software was used to order the data and create the charts and tables included in this paper.

FINDINGS

A major focus of the DNSurvey was on the characteristics or features of a domain name registry system. Respondents were asked about the desirability of certain characteristics and whether those characteristics were likely to be found in a competitive market. Table 2 indicates the respondents' ranking of the various characteristics. Table 3 shows the ranking of responses regarding the characteristics that will likely be found in a competitive registry system.

Table 2 Characteristics that should be offered in a competitive market

Ranking[3]	Statement
1	Reliable registration service
2	Improved customer service
3	Increased registrar efficiency
4	Innovation
5	Value Added Services (wider range of services)
6	Ability to transfer domain names
7	Lower prices

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[3] Based upon the ranking of variance for DNSurvey questions 5 through 11.

Table 3 Characteristics that will be provided by a competitive market

Ranking:[4]	Statement
1	Value Added Services (wider range of services)
2	Innovation
3	Lower prices
4	Ability to transfer domain names
5	Improved customer service
6	Increased registrar efficiency
7	Reliable registration service

Results of the DNSurvey indicate that reliable registration service is the characteristic respondents most desired (Table 2); however, it is perceived least likely to occur under competition (Table 3). Similarly, DNSurvey respondents were least concerned with competition producing a lower price, but it ranked higher, in the midrange, as a characteristic likely to occur under competition. Reliable registration services, improved customer service, and increased registrar efficiency ranked high as desirable characteristics. These characteristics are in keeping with the common elements of deregulated firms listed in the Standard/Conduct/Performance literature [29]. In order to provide reliable registration services, a firm must be able to respond to technological problems and have adequate backup equipment and policies to cover equipment failure and natural disasters. The literature states that deregulated firms have higher reliability because they are more responsive to external disturbances, such as equipment failure or natural disasters [29]. Competition also results in (1) better customer service, (2) bundled services and prices, (3) introduction of new products and services, and (4) responsiveness to consumer preferences [29]. These characteristics were ranked fifth, first, and second, respectively, as the characteristics that were likely to occur in a competitive market.[4]

The *White Paper* states that "there is widespread dissatisfaction about the absence of competition in the domain name registration"[28]. Theoretically, government regulation or control of entry into the market is synonymous with monopolies [29]. Overall the DNSurvey revealed there was little consensus on whether the government should regulate domain name registration[5]. Currently the U.S. government is regulating entry into the domain name registration market through application and accreditation processes administered by Internet Corporation of Assigned Names and Numbers (ICANN). In the past, in similar situations where an industry was deregulated to introduce competition, such as the airline and railroad

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[4] Based upon the ranking of variance for DNSurvey questions 12 through 14, 16, and 18 through 20.
[5] Based upon ranking of variance for DNSurvey questions 1 through 26.

industries, even limited involvement by the government in the transition process stalled the effectiveness of competitive forces.

ECONOMIC MARKET CHARACTERISTICS

ICANN's announcement of the testbed registrars states that the "central purpose of the testbed is to develop a functioning Shared Registry System and to learn from the expertise of the testbed participants. The question of whether there will be competition has already been answered. The testbed will help answer the questions of exactly how"[9]. The *Green Paper* states that the testbed should consist of a number of firms large enough to create competition, evaluate registration software, and identify, process, and remedy problems with interoperability of computer systems. It was decided that five firms would be sufficient to introduce competition but not so large as to destabilize the Internet [7]. However, selecting such a small number of firms may not yield the results the Clinton administration called for in its *Green Paper*. A market structure consisting of a few, large firms is characteristic of an oligopoly market which will react differently than a competitive market; therefore, the testbed is not a useful model for predicting competitive market operations.

The current domain name registration system has further characteristics of an oligopolistic rather than a competitive market. Differentiated products, price competition, and interdependence are characteristics of an oligopoly that are found in the current competitive domain name registration market. The competing testbed firms are offering one product: domain name registration for .com, .org, and .net suffixes. However, at least one firm has proposed new two-character suffixes that would result in product differentiation. Price competition is developing within registrars since testbed firms are proposing a variety of pricing structures. Some firms will charge a fee for their services in addition to the $70 initial registration fee and $35 annual renewal fee, while others will not. Finally, firms are currently dependent upon NSI for access to and maintenance of the database that stores the registered domain names and related information.

NETWORK SOLUTIONS, INC., TACTICS

Those involved with the domain name registration process have criticized NSI for not fully cooperating with the transition to a competitive market. From the onset, NSI has claimed "proprietary rights" to databases and techniques developed under government contract as a reason for not releasing information to the government and its competitors [5]. NSI has also been accused of having its competitors sign a licensing agreement that contains strict nondisclosure clauses when they deliver software necessary for interfacing to NSI's shared registry system. These restrictions have deterred many firms from applying for ICANN accreditation and entering into competition [5]. NSI has been accused of using other, more subtle tactics, such as redirecting individuals accessing the InterNIC page or the "whois" directory to the NSI homepage. Anyone who wants to know whether or to whom a domain name is registered must first access the "whois" directory through NSI's site. It was believed that this would lead to NSI building brand name recognition for its

registration services and the "whois" directory. The DNSurvey polled respondents regarding NSI brand name recognition as a registrar; results were inconclusive, with a majority of respondents neutral on the subject. Oddly enough in early July 1999, hackers redirected visitors to NSI's site to the sites of two rival firms [8].

In response to these actions, members of the ICANN boards and the Department of Commerce have threatened to terminate NSI's contract to register domain names. Such threats have served to shift the focus of scrutiny to ICANN. Ralph Nader and Representative Tom Bliley, Chairman of the U.S. House Commerce Committee, have forwarded their concerns that ICANN is overstepping its authority to ICANN's chairman, and requested that the organization carefully consider any actions that could undermine the stability of the Internet. Nader and Bliley also questioned ICANN's authority to impose a $1 registration fee on all domain names. ICANN explained that the fee was meant to recover its costs for functions performed under its agreement with the U.S. government [20]. ICANN recently decided to defer collection of the fee, agreeing with the Department of Commerce that: "Although the user fee may be determined to be an appropriate method for funding ICANN's activities, it is controversial"[1] and could interfere with the stability of the Internet. ICANN also announced that it would form a committee to explore more appropriate methods of funding. The questions raised about ICANN's authority have been attributed to NSI's lobbying activities against ICANN.

Concerns for the stability of the domain name registration system extend to the international community as well. Emma Connors of the *Australian Financial Review* writes that the "global business of securing naming rights in cyberspace is in danger of collapse, with inadequate testing and political manoeuvring [sic] threatening the reliability of new registration process"[3]. Another Australian newspaper reports: "Governments will end up taking control of the distribution of Internet addresses if the Internet industry cannot resolve its differences..."[15] At the onset of the testbed period The *Wall Street Journal Europe* and *The Asian Wall Street Journal* carried articles stating the "federal government's attempt to end Network Solutions Inc.'s monopoly in Internet domain names has run into technical and political glitches"[23, 27]. The articles went on to state that "Icann [sic] is excluding interested parties from some decisions regarding the future of the Internet"[23, 27]. The *Irish Times* stated that it is "the individuals who are now the focus of anger from the world's Netizens. The question of administration has vexed Net users since the dawn of the medium and, in the past, much fury has been vented at Network Solutions Inc"[12].

SUMMARY
The "Internet" moved from a top secret Department of Defense project in the 1960s to commercial application twenty years later. The National Science Foundation contracted with Network Solutions, Inc. (NSI) in 1993 to serve as registrar for domain names. Shortly thereafter, as registrations became increasingly commercial, it became necessary for the registrants, not the government, to cover the

cost of registration services. Debate over restructuring the domain name registrar and introducing a competitive market structure began in 1996, two years before the expiration date of NSI's contract.

Consumer demands and preferences have been a driving force behind the Internet; and the Clinton administration quickly supported the demands for a private, competitive domain name system. NSI's contract was extended through 2000; however, it was amended to include the introduction of a competitive domain name registration system. Due to the unique nature of the Internet, there are no business models by which to compare or gauge its form, function, or performance. Likewise, application of free market theory to the domain name system is a developing issue with few precedents. However, the introduction of competition to an existing monopolistic market can be examined according to the principles of economic market structure and industry deregulation.

The *Green Paper* mandated the formation of a testbed of five firms to begin the transition towards a competitive market structure. The purpose of the testbed was to identify and correct any difficulties that occurred when establishing access to the shared database depository of domain name information. The five testbed firms are intended to serve as a model of competitive behavior in the domain name registration market. However, the characteristics of the testbed are indicative of an oligopolistic market. The characteristics include:

> Difficult entry into the market – prior to being selected as a testbed participant, each firm is required to receive accreditation from ICANN.
>
> Control over prices and price competition – all registrars are required to pay the $35 annual domain name registration fee that is forwarded to NSI. However, testbed firms have discretion whether to charge a fee for its services. At least one testbed firm has decided not to charge a fee for its services, therefore establishing price competition among fellow testbed registrars.
>
> Product differentiation – all registrars provide registration services for the domain name suffixes .com, .org, and .net; however, at least one testbed firm has decided to offer additional two-character suffix registration. This established product differentiation.
>
> Number of firms – the testbed consists of a few large firms: four major technology firms and one consortium.

The Department of Commerce hoped five testbed firms would be sufficient to demonstrate competitive market behavior. However, the testbed provided an oligopolistic model and the economic market forces have performed accordingly. The testbed of five can be considered an incremental introduction of firms into an anticipated competitive market structure.

A recent article in the *Australian Financial Review* indicates a perceived danger of the domain name registration collapsing due to inadequate testing[3]. Deregulation is a slow process because the market forces must first impact the firms

and the firms must have sufficient time to respond to those forces. Due to the timing restraints placed on the testbed firms, there will not be an opportunity for natural competition to work. The deregulation will set the firms up to function in a competitive market without sufficient time allowed to develop a market that will produce the optimal effectiveness and benefits for consumers.

CONCLUSION

This paper examined the introduction of competition in the domain name system of registration. The study examined expectations of domain name registration through the use of a customized web-based survey. Preliminary results of the DNSurvey were inconclusive with regard to the expected market structure of the domain name registry. Further study and refinement of survey results, through several iterations using the Delphi technique, are necessary to predict the market structure that will be most responsive to consumer needs. Transition of the domain name registration system from a monopoly to a competitive market structure will require continued changes and refinements, which will be driven by consumer needs. It is likely that it will take months, possibly years, before domain name registration arrives at its optimal level of responsiveness to consumer needs.

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An Evaluation of the Potential for Change in the Caste System of India

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ABSTRACT

This paper is an examination of the potential for change in the caste system of India. The history of the caste system, from ancient prehistory to modern times, will be outlined. This will be followed by an examination of India's social structure and candidacy for revolution using Skocpol and Trimberger's model of critical analysis.

INTRODUCTION

"Early in 1947, Mahatma Gandhi met Lord Bevin, the personal emissary of British Prime Minister Winston Churchill, in Delhi. Beven [sic] is reported to have told the great man, 'Eighteen languages, 500 dialects, some 30 religions, a million Gods and Goddesses, 300 million individuals, an infinity of castes and sub castes, and a population practically illiterate and half of which (are) beggars or thieves ...Good luck, sir! Such a nation is ungovernable! It'd take you centuries to get anywhere!' Gandhi ...modestly replied, 'India has eternity before her...' " (Anonymous, 1998)

Few would argue that the word India does not conjure images of peaceful temples, bustling markets, and pilgrims bathing in the Ganges. Undoubtedly, the country possesses these things. Yet India is also a place of poverty, division, and strife. The primary purpose of this paper is to examine India's oldest institutionalized tradition of social division – her caste system.

A second goal of this paper is to develop a plausible explanation of why the caste system of modern India is still in place, despite exposure to the Western ideal of meritocracy. The major objective, however, is to determine what, if anything, would bring about a radical change in this long-standing social institution. Using a structural approach to revolution set forth by Theda Skocpol and Ellen Trimberger (1986) and descriptions of current events gleaned from the international press, the potential for social upheaval and change will be assessed.

The discussion begins with a brief history and ethnographic explanation of the modern caste system and its roots. Next will be a description of Skocpol and Trimberger's model. Finally, there will be an appraisal of change for the traditional caste system in modern India.

REVIEW OF RELEVANT RESEARCH

The social structure of India is a unique and much misunderstood legacy. Therefore, any discussion of the potential for change in the caste system should begin with a historical background of the phenomenon. In reading an abbreviated history, one also gets a glimpse into India's social, economic, and political past.

Just as Westerners sought to create order in times of chaos, Indians categorized things and people during the earliest tribal invasions. During the Vedic Age (1500-1000 BC) of Indian history, the barbaric Aryan tribes invaded prehistoric India during the downfall of Indus civilization. According to anthropologist Stephen Tyler, these "barbarian hordes of Indo-European speakers" (1973 p.37) used the term *varna* to distinguish their fair-skinned tribe from the darker, indigenous Dravidian people. The word *varna* has several connotations in Indian society: complexion, race, or tribe. Over thousands of years, this evolved into what is known as the *varna ashrama dharma* system of orthodox Hinduism. The practice of race-based duty became a primitive basis for the more elaborate caste system. In 1944, Malcom Olcott described the scheme (p.648):

> *Varna* means color, *ashrama* may be translated
> religious discipline, while *dharma* covers religio-
> social righteousness, obligations, and mores.

Historically, the caste (or *jati*, as it is known to Indians) system was a social stratification tool for differentiating between different levels of status. Anthropologist Tyler defines caste as "first and foremost a system of social classification – a means of placing people into named categories" (Tyler 1973 p.147). According to historical records, the first recorded instance of divisions in Indian society came during the Epic Age (1000 BC – 600 BC). During this time, the Law of Manu outlined the model of social order, according to which people were split into four primary castes:

1. *Brahma*: the caste of priests and holy men, responsible for handing down the rules of pure living.

2. *Kshatriya*: the caste of knights and protectors, responsible for fighting battles and ensuring the safety of the other castes.

3. *Vaisya*: the caste of business, responsible for acting as landlords and engaging in trade.

4. *Sudra*: the caste of workers, responsible for 'unclean' tasks such as handling carcasses and fishing, and serving the other three castes. These people were not outcastes *(Dalits),* however, because they "still had a position in the social order" (Tyler 1973 p.82).

There are many theories of the function of caste: tribal identification, race segregation, and occupational protection (Klass 1980 p.64-65). Some scholars view caste as simply an outgrowth of primitive ancestor worship (Olcott 1944 p.649). Whatever the roots, Olcott (1944 p.648-49) states that there are five basic components of the caste system:

1. Endogamy – marriage within one's caste. Though there are no official

requirements to marry someone of the same social standing, the penalties for moving outside caste (whether up or down) are severe. These penalties carry the weight of spiritual retribution.

2. Compelling religious sanctions – again, based on the *varna ashrama dharma* system. Simple breaches of social patterns, such as speaking to an underling, can cause a boycott by other caste members. "To be a good Hindu," Olcott explains, "a man may believe anything or nothing but he must fulfill his caste obligations…A villager's failure to observe minutely all the taboos and elaborate ceremonial rules usually leads to his being boycotted by his fellow caste-men as to marriage and food, and sometimes as to companionship, drink, and tobacco" (1944 p.648)

3. Hierarchy based on birth and reincarnation – This theme is probably the most basic tenet of caste, in that it is used to justify much of caste-based discrimination. In Olcott's words, caste is "an exact index of [the] soul's behavior and piety in previous births" (1944 p.648). For the lowest caste, it is an acceptable rationalization of its meager circumstances. For the highest, it is irrefutable justification for its privileges.

4. Socioeconomic interdependence – a symmetrical give and take by members of each caste, exchanged in the form of goods and services that assures that everyone's basic needs are met.

5. Outcaste substratum – This is the most fluid component of the caste system. Despite that, there is always the presence of outsiders 'beneath' everyone else in society. As Tyler explains, there are often no rules on who is the lowest member of the society: "Different collocations of criteria or even totally unique criteria may be used in each village setting or by different *jatis*, or even by different individuals, but as long as these criteria are indices of purity/pollution and as long as they fit into the pattern of dichotomous contrasts, they are still consistent with the underlying logic of the system." (Tyler 1973 p151).

One factor Olcott overlooked is the concept of purity and pollution in the Hindu religion. The underlying theme of the ideology is that "differences among humans are attributable to inherent degrees of purity and pollution" (Tyler 1973 p. 148). The idea is at once both complex and simple. As presented in Tyler's anthropological study, the typical Indian citizen views his or her life and sense of self as placed within a cosmic order. In that order, every person (except the lowly *Dalit*) is surrounded by individuals more or less pure and/or polluted than the individual in question. While purity cannot be obtained from outside sources, pollution can. Dealings, even indirect ones, with an 'unclean' underling can pollute an individual. That person must then seek to purify the self through rituals.

This system was still in place hundreds of years later in 1498 when the Portuguese landed in India via an ocean passage. The first social interactions with the colonists were primarily economic and related to trade. However, the Portuguese discovery and exploration of India paved the way for other empires to come. Of the arriving nations, it was Britain that made the most lasting impression. The British stayed in India for generations, from the sixteenth century well into the mid twentieth century. The social changes wrought directly and indirectly by the British are still being felt today.

British merchants came initially for trade under Queen Elizabeth I. She chartered the East India Company on December 31, 1600, to facilitate the production and distribution of spices. The company soon went from a business to a political and military power that was capable of considerable social influence. In a sense, it was in the interests of the British bourgeoisie to maintain the caste system; harsh labor was justified by the profits ensured by the stable social structure of the colony.

One of the most profound examples of British social influence in India occurred in the mid-nineteenth century. India had barely begun a long, and sometimes ineffectual, battle for independence and recognition of individual rights. The reforms sought during the Mutiny of 1857, for example, failed in part because they lacked support from upper-caste Indians. Despite the fact that educated Indians were regularly passed over in favor of British citizens for lucrative positions in business and government, the relative prosperity of landowners and businessmen guaranteed their apathy toward massive social restructuring. In the eyes of many well-to-do Indians, the path to modernization and progress was through the adoption of British social and economic attitudes. This laissez-faire spirit not only perpetuated discrimination based on nationality, but also permitted social injustice based on caste.

Consequently, the lower-caste citizens lived very different lives than the British or their higher-caste fellow Indians. *Sudras* and *Vaisya* carried out the work of production, and saw a bleak future in working for the large centralized bureaucracy managing the British spice trade. But because of their orthodox Hindu beliefs, they stoically embraced their fate and fulfilled what they saw as their duty. It would take many years before they saw any change affecting their lives.

In the period following this uprising, the British East India Company relinquished power to the crown. Queen Victoria's official policy quickly became one of "hands off" Indian affairs. In reality, social policy was greatly determined by powerful British industrialists producing in India. These manufacturers exploited the existing caste system to further their own ends, using *Sudras'* religious compliance to their advantage. Despite growing anti-British sentiment, Indian social structure remained intact and formidable due to British control of the economy.

For most Indians, the period of Queen Victoria's rule was a catalyst that moved them towards the weighty task of bringing about national unity. Even as so-

called British India was thriving and expanding, a feeling of resentment and discontent was growing among both high- and low-caste individuals. The public in India became painfully aware of how India had been molded to fit the needs and desires of the British economy, and the nationalist movement was born.

In 1885, Allan Octavian Hume founded the Indian National Congress, charged with representing India's interests to the British. This legislative body fostered solidarity in the Indian community. It also provided a preparation for young politicians, such as Mohandas Gandhi (1869-1948) and Jawaharlal Nehru (1889-1964) who both served terms there. These influential men, through their persistent political efforts, did much to advance the rights of India's low-caste citizens.

The Gandhian Era of Indian nationalism began in the Indian National Congress. Outraged by his experiences with racial discrimination in South Africa, Gandhi pushed for social reform in the 1920s and 30s when he returned to India. During his time as leader of the Congress, Gandhi led several movements that politicized the Indian public. None of his feats did more for low-caste citizens than his representation of India at the second Round Table Conference in 1931. This meeting formulated the law concerning the voting rights of the "Depressed Classes" and the percentage of seats in the central legislature specified for their delegates (Mehra 1985 p.147).

Nehru was born into a Brahmin family with all the trappings of high-caste existence. Yet he worked with Gandhi to fight caste-based discrimination. He served three times as the president of the INC. After India's independence from Britain in 1947, Nehru became Prime Minister and enacted a series of Five Year Plans focused on the modernization and industrialization of India's resources (Mehra 1985 p.502). An agnostic and democratic man, he pushed for the secularization of law and government (Mehra 1985 p.503). This approach to government indirectly affected the "Depressed Classes" by de-emphasizing the importance of orthodox Hindu beliefs that bound the caste system together.

Post-Nehru, caste as a tool of social segregation has remained intact. Political parties and other peer groups serve to perpetuate societal boundaries in cities. Rural areas of India have seen violent, repeated episodes of caste warfare. In the future, uncertainties about what caste means and how it will adapt to modern circumstances will surely move to the forefront. The probability of change in the caste system, through the analysis of three components of a nation's structure, is the focus of the data analysis section below.

RESEARCH DESIGN

The following section will utilize a secondary analysis of the Indian caste system using Skocpol and Trimberger's structural approach to revolution. Historical and anthropological information on India will also be used. Also included are primary data from the United Nations and other sources of demographic data, as well

as intelligence data from the Central Intelligence Agency. This multitude of vantage points, while complex, is crucial to a better understanding of a complicated topic.

DATA ANALYSIS

Social movements and the crises that precede them are complex and multivariate. The integration of the fields of economics, anthropology, sociology, and history has led to revolutionary theory, which seeks to explain the factors that create societal revolutions and also to predict the outcomes of radical social change. The field is undergoing a change in itself, with the focus being shifted from basic Marxist theory, which explains social change as the result of intra-social class conflict, to a present emphasis on the role of change in the nation-state as it participates in the world system of capitalist production. In the following section, an outline of a revolutionary model created by contemporary scholars Theda Skocpol and Ellen Trimberger will be used to calculate the possibility of social change in agrarian India's caste system. This model for analysis was in part an outgrowth of revolutionary theory put forth by Karl Marx (1818-1883).

Marx was one of the first scholars to outline the prerequisites for revolution. He viewed insurrection as the result of economic contradiction. Marx's primary emphasis is on changes in the mode of production, either from feudalism to capitalism or from capitalism to socialism. His theory was among the first to put forth the notion that once the mode of production (e.g. feudalism, capitalism, and socialism) arrives at a contradictory point in a society, then the producers (i.e. workers) will no longer support that mode. The contradictory point is one of conflicting circumstances, or of being caught in a scheme in which there is no chance of winning, let alone changing the rules. Since Marx saw revolution as internally created, this conflict, combined with class consciousness, is crucial because without it there could be no change.

There are also visible alterations in class relations as a result of revolution in the Marxist view, but only in the quest to aid economic development. To that end, the most economically advanced societies were favored as being the first in line for revolution. Marxists view changes in the state, as well as changes in ideology, as secondary effects of changes in the function of the state. However, Skocpol and Trimberger offer a critique of Marxist theory which gives a counter-argument grounded in historical research:

> From the French revolution on, they [revolutions] have occurred in predominantly agrarian countries where capitalist relations of production were only barely or moderately developed (Skocpol and Trimberger 1986 p.60).

Furthermore, Skocpol and Trimberger found that the causes of revolution in agrarian societies are much more complicated that Marx initially believed. One of the more persuasive arguments they put forth is that internal political contradictions are more important than economic ones in causing revolution. When the nation is put

in a position of defending itself against international competition and/or a failing domestic economy, it obviously becomes weaker and more susceptible to attack from outside adversaries. According to Skocpol and Trimberger, however, a malcontent group within the nation has more capacity to subvert the acting government. In Skocpol and Trimberger's historical reviews, it was overwhelmingly the peasants rebelling against the dominant and/or landed classes that led successful insurgencies against the state.

Skocpol and Trimberger also assert that outside involvement plays a significant role in determining the outcomes of a revolution by exerting political and economic pressure on the state. In Marx's view, external forces and the international forum were relatively minor in their impact on outcomes within a country. This might have been true during Marx's life, but with the twenty-first century approaching, the organization of economic and political interactions has changed. The field of World Systems Theory examines the structure of these modern associations, focusing on the relationship between core (developed capitalist) nations and peripheral states. Peripheral states provide core nations with raw or intermediate goods and exist in a dependent relationship with the former. As previously stated, an exhortation to change from rich core countries has a powerful effect on the developing nations.

With their analysis of chronicled historical events, Skocpol and Trimberger predict the outcomes of revolution in a surprisingly different way than Marx. From their perspective, economic development can be traced to these changes brought about by revolution. Still, they hold that revolution causes fundamental changes in the structures and functions of the state. In their words:

> Moreover, Third World revolutions since World War II have broken or weakened the bonds of colonial or neo-colonial dependency above all by creating truly sovereign and, in some cases, mass-mobilizing national governments (Skocpol and Trimberger 1986 p.61).

Using the historical case study method, Skocpol and Trimberger investigated two hundred years worth of revolutions. Citing records from the Japanese, Turkish, Chinese, French, and Russian revolutions, they studied the correlation between the growth of capitalism and the type and frequency of change in the social structure rural societies. What they found was that revolutions from below in agrarian states undergoing capitalization are best explained by using three "analytic principles": the first of these is a non-reductionist view of states; second, there is an examination of the situation of the peasantry within a nation; and thirdly, there must be a consideration of the nation's status within the international state system.

First, by the term "non-reductionist view of states," they mean that a nation should not be considered a collection of economic or class interests vying for power, but a separate political institution capable of interacting with the dominant class within a society. By their definition, states are "fundamentally administrative and military organizations that extract resources from society and deploy them to maintain order at home and to compete against other states abroad" (Skocpol and Trimberger 1986 p.62). This functional view of the nation helps in understanding the national administration as an entity with which classes, or in this case, castes, can interact.

In India, as in most heterogeneous societies, maintaining order at home is a difficult task. There is currently much civil unrest in the northeastern state of Bihar, where intercaste strife has been at the root of revolutionary violence for years. According to CNN, 192 low-caste citizens and 54 upper-caste individuals have been killed since 1981 (CNN March 20, 1999). More than 30 voters died during the first two weeks of elections in February 1999 (CNN February 13, 99). Early this summer, landmines near the state's capital, Patna, killed paramilitaries reportedly as a result of their associations with high-caste landowners (CNN June 3, 1999).

Secondly, Skocpol and Trimberger stress a focus on the situation of the peasantry in relation to the state and dominant classes within a nation. Peasants are the mode of production in developing states still using labor intensive methods and as such must be taken into careful consideration when determining the possibility for revolution. In their research, Skocpol and Trimberger (1986) found that the peasantry's access to resources needed for revolt (i.e. economic, political, social), combined with a weakness in the state institutions led to "mass-based social revolutions from below." If "human capital" rallies around an ideology and gains access to the political and economic resources controlled by the wealthy landowners during a national crisis, then radical action is sure to follow.

The following quote from the article describes the physical division between the landowners and the peasantry in a village in the Indian state of Bihar:

> As in most Indian villages, though the divide between upper castes and *Dalits* is still physical. The twice-born (upper-castes) live in large whitewashed houses in the center. They are taller and lighter skinned than the *Dalits*, who live on the fringes in huts of crumbling mud and thatch. *Dalit* children are stunted by malnutrition (Goldenberg 1999 p.15).

One example of peasantry fiercely engaging in conflict while the government is weak came in the form of a gruesome and revealing story from Bihar during a period of recent political upheaval (CNN March 18, 1999). The example was one of 33 *Bhumihar* (upper-caste) villagers in Senari, Bihar, who were found decapitated in March of 1999. The murders were in retaliation for those of local *Dalits*. Uniformed men allegedly took the victims from their homes and cut their throats.

Suspects ranged from the private police hired to maintain order in the province to the population of Khatangi, a small village inhabited by *Dalits*. A member of the *Bhumihar* caste from a nearby village, Ajay Kumar Sharma, said, "This is a caste war."

Concerning lower-caste Indians and their relation to the state, people living in the agrarian areas of the country are slowly gathering the necessary force to effect social change. Since most occupational choices are determined by birth, caste plays yet another role in bringing people together to undermine the status quo. There are organized occupational guilds that seek to further the interests of the workers who participate in them (Olcott 1944).

There are also grassroots movements such as boycotts of particular artisans' goods in order to pressure higher-caste members of a village into changing their ways. Of course, these boycotts can be mutual. During July 1998, the Maoist Communist Center party "descended on the village of Rampur with handbills banning all cultivation unless the *Bhumihars* (upper-caste Indians) handed over half the crop and all the pond fish. Since then, most of the 400 acres owned by the 100 Bhumihars have lain fallow" (Goldenberg 1999 p15). The *Dalits* refusal to work signals that they are not only ready for change in the present system, but they are also ready to risk starvation to attain it.

Political parties divided along caste lines create effective pressures as well. In a recent election, voters elected K. R. Narayanan, a member of an untouchable caste, vice president (CNN January 6, 1995). Lower–caste citizen Ram Bilas Paswan entered the Guinness Book of World Records for his extraordinarily large (half million vote) lead over his rivals for a seat in India's parliament. The so-called "messiah of the poor and untouchables" (CNN January 6,1996) was later named to a post as cabinet minister. However, the prime minister controls most of the power in India's political circles. So it seems that while India's people are willing to let untouchables serve in the government, they are still perceived as lacking the wherewithal to lead it.

Finally, one must consider the nation's status within the international state system. Since the inception of the British East India Company, India has been part of the world capitalist system. Skocpol and Trimberger stress the role of capitalism in revolution. There are two underlying components to this role. First, capitalism can no longer be considered only a mode of production characterized by competition and free market wages and prices. Secondly, capitalism in the modern world is inherently tied to multiple political sovereignties, or a system of nations, thereby binding all countries within that system together.

From a world systems perspective, capitalism is an economic hierarchy with uneven and interdependent zones of production. "Interdependence, as defined by Holzman and Legvold (1975) in their examination of political and economic ties between the West and the former Soviet Union, is a "mutual dependence in which both or all parties view cooperation as a useful but not decisive mean for pursuing

some or all of their essential economic goals…benefiting from the easing of political tension, evident in a common recognition of gains, political as well as economic, to be had from cooperation."

The world economic system, while allowing for social change, rarely enables a society to uphold the ideology behind the upheaval. Scopkol and Trimberger present the case of "bureaucratic revolutions":

> …all revolutions…become "bureaucratic revolutions": -- in the specific sense of creating larger, more centralized, and more autonomous state organizations than existed under the old regimes. Revolutionary leaders have sought to enhance national standing and have seen the state apparatus as the most important tool to achieve this, especially where the state could be used to guide or undertake national industrialization (1986, p.63).

With regard to the rest of this line of reasoning, there is a systematic organization to the international political web. Relative to the caste system, this kind of interdependence could mean widespread discord in core industrialized nations should a major change occur. The political and economic ties binding countries together assures that other nations will feel the effects of any fundamental change in India's social structure. It will be interesting to see how India reacts to its place in the hierarchy of nations now that any movement requires careful consideration of the world economy's social and economic future.

CONCLUSION

One limitation of evaluating the possibility of radical change in India's social structure is that it is primarily confined to the caste system as it is represented in agrarian India. Crowded living conditions in cities such as Calcutta, Mumbai (Bombay), and New Delhi, have relaxed inter-caste rules. However, the arguments presented still hold, because roughly three-quarters of India was considered rural as recently as 1998 (UN Indicators on Human Settlements 1998)

Another argument against change in the caste system is that it works for India. From a functional standpoint, caste is a clear-cut source of guidance in an extremely diverse society. Preservation of order is essential to the continued growth of the nation. With rules of social behavior and sanctions for breaking them clearly laid out, there is little room for maladjustment or alienation within Indian society.

There are three major routes for alteration of India's social structure. India has been successfully meeting the challenges of rapid change in industry, technology, and the economy. The challenge to the social structure by low-caste Indians has caused much controversy. For advocates of human rights and individual merit, there are ongoing questions of why the disadvantaged classes do not persist in demanding the overthrow of the caste system.

The most obvious path for radical change could come in the form of a transformation of Hindu ideology. At the very least there will need to be a break or a turning away from the 'purity/pollution' philosophy at the root of the caste system. This is the most unlikely scenario, as India is still predominately Hindu (CIA 1998 p.3). This situation is not impossible, however. Hinduism characteristically absorbs elements of other religions and philosophies rather easily, and orthodox Hinduism will probably adapt to changes in other areas of Indian civilization. But it is unrealistic to expect the whole basis of the *varna ashrama dharma* system to be altered or dismissed in India.

A second path to change in the social structure could come in the form of the changing composition of Indian society. There is a sizable youth contingentcy in India. According to UN data, 34% of the total population of India was under age 15 in 1998. This cohort could prove valuable to the cause of eradicating the caste system. The youth of India, often educated abroad, could embrace the Western ideal of meritocracy and, like Gandhi and Nehru, bring a valuable flow of ideas to the masses. The flaws in this plan are twofold: first, most of the Indians with the resources to attain a Western education are from the upper castes, and therefore might be unwilling to give up their status as India's premier citizens; second, it will still be in the hands of the lower-caste citizens to organize the resources necessary for a successful struggle.

Perhaps trade sanctions for human rights violations, like those used in China, are another possible route to a breakdown of the system. Because of India's socioeconomic dependence on core countries, outside sanctions could be a powerful tool. India depends on international support for the capital it needs to improve its infrastructure. Refusal to cooperate could mean an end to the stream of economic aid used to prepare India for the global market.

Clearly, no course of international action will be above criticism. Economic sanctions may drive Indian nationalist leaders to extreme isolationist policies. If this happens, 'most favored' status as a trading partner will not matter, and the focus could become one of preserving impoverished life in a stagnant economy. Granted, much of success in India is measured on a horizontal plane. The acquisition of power or wealth, for example, is actively used to maintain social status among one's peers. It is different from 'getting ahead' in the Western sense in that the expansion of influence is within one's own peer group. Yet by all accounts, India is reluctant to be perceived as an intractable, though venerable, pariah in the international political hierarchy.

Furthermore, Hindu beliefs are designed to accept the life of one being as inherently fixed to the existence of others. To that end, Hinduism could possibly be used to reinforce the *dharma* of life in a shrinking world -- if an entity ignores its responsibility and fails to fulfill its 'social contract', the entire organism, be it a society, a nation, or an economic system, is thrown out of balance.

Ultimately, any reform will have to come from within. India has proven that it is capable of facing the next century in terms of industry, technology, and economic growth. What Indians must examine now is the importance of caste and the repercussions of its continuation.

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Gender and Race in
José Martí's Children's Literature

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ABSTRACT

This article examines the role of gender and race in the intellectual production of José Martí (Cuba 1853-1895), one of the most important and influential intellectuals in Latin American history. Martí dedicated his life to gaining Cuban independence from Spain and was an early and outspoken critic of U.S. imperialism. As a symbol of Cuban and Cuban American resistance to Fidel Castro's Cuba, Marti continues to be relevant to discussions about Latin American society and identity. My research examines the question of race in Martís children's magazine, La Edad de Oro (The Golden Age), and will demonstrate that Martí uses his fictional feminine protagonists to combat racism. This use of little girls demonstrates that Martí challenges the nineteenth century gendered division between the domestic (what is considered "feminine") and the political/public (the "masculine").

INTRODUCTION

In the nineteenth century children were not considered citizens and to this day they are the citizens with the least rights by law. In the Western tradition, children's literature has been very conservative since the seventeenth century, reflecting biblical influence. The Oxford Book of Children's Verse, an anthology of literature from this time period, demonstrates this conservatism with titles such as: "Moral", "The Father and His Children", "Hymn for Saturday", and "Consideration for Others". Texts such as these often suggest a horrific wrath to follow if the child allows the inherent evil within to lead him or her astray. Picture books were not popular, and society would not see the worthiness of this type of literature until the nineteenth century with the rise of the Romantic Movement.[1] Under the influence of Romanticism educators, writers, and political officials sought to nurture children's inherent potential for imaginative thinking. Notwithstanding these changes in the concept of "children's literature", children have been relegated to an inferior social position, requiring literature and conduct manuals to "discipline" them into society (Higgonnet, 130).

One exception was the French Revolution (1789-1804), when along with women, children where thrust into the forefront of the political world. During the French Revolution a new conceptualization of children emerged, one of the child "as a member of society at a tender age, already in possession of moral integrity and an active capacity to contribute to the common good" (130). This new and radical view of children transformed French children's literature. The literature was still heavily laced with didactic messages but it was now accompanied by the assumption that children could participate and bring about social change. For example, Rousseau's vision of children was popular because it encouraged the idea that society could "build a new state with the help of younger, purer citizens" (131). Children's literature reverted to the old style of manners and discipline when this revolutionary attempt failed. In spite of its ultimate failure, the French Revolution added a new, political dimension to children's literature.

This article examines the politicization of children in the intellectual production of José Martí (Cuba, 1853-1895), one of the most important and influential intellectuals in Latin American history. Martí dedicated his life to gaining Cuban independence from Spain and was an early outspoken critic of U.S imperialism. He made a living as a reporter, but he was also a novelist and a poet. He popularized and canonized the phrase <u>Nuestra América</u> (Our America) which to this day is used by Latin American intellectuals to express anti-imperialist pan-Americanism. His continued relevance to discussions about Latin American society and identity (Martí is a symbol of Cuban Marxism as well as a symbol of Cuban-American resistance to Fidel Castro's socialist regime) underline the importance of understanding his intellectual production. The children's magazine <u>La Edad de Oro</u> (<u>The Golden Age</u>), which Martí edited and in which he published, is his least known work.

My research will demonstrate how Martí imparts knowledge about race through his fictional feminine protagonists. This use of females is a direct contradiction of what was considered to be the feminine ideal in Martí's time. In these didactic fictions for children Martí supersedes the gendered division between the domestic ("feminine") and the political/economic ("masculine") realms by utilizing the feminine child to teach all children how to deal with the issue of race. His feminine protagonists must then deal with a political realm historically associated with a masculine public sphere. Although Martí utilizes the separation of spheres to deal with highly sensitive issues, he also struggles with that division, raising questions about its validity.

It is important to review Martí's political and personal life experiences in order to understand and analyze his fictional work for children. In the initial portion of this paper I will discuss some of the more important aspects of his life. The next step involves a discussion about Martí, children, and the magazine <u>La Edad de Oro</u>. I will examine the importance of children to Martí and how his ideological strategies for education are revealed. The three literary pieces I will analyze include the preface to the first edition of <u>La Edad de Oro</u>, "Nené Traviesa", and "La Muñeca Negra." The methodology utilized in this analysis will be interdisciplinary, combining historical and literary analysis.

JOSÉ MARTÍ'S LIFE

José Martí was born to Mariano Martí and Leonor Pérez, both of Spanish descent, in Cuba on January 28, 1853. Although both of his parents were loyal to the Spanish crown, Martí supported Cuban independence. His abusive father had difficulty holding down various jobs, which created financial difficulties for Martí. This allowed the schoolmaster/poet Rafael María de Mendive to introduce a different ideological viewpoint about Cuba to Martí. Mendive would prove to have a great influence over Martí and became a surrogate father to him thus providing him with the much needed love and support (financial and moral) that was sadly lacking in his home life. Under Mendive's direction, Martí began questioning the philosophy of the Spanish crown towards Cuba.

At a very early age (in his teens), Martí realized that the two major factions in Cuba, Spanish Colonialists and Cuba's Revolutionary Party, would always have

goals that were diametrically opposed. The colonialists sought to exploit the island's resources and subjugate the Cuban people to the Spanish Crown, while the Revolutionary Party fought for Cuba's right to govern itself. José Martí was incarcerated for printing articles about the unjust practices of the Spanish. His stay in prison created within Martí a sensitivity towards injustice in any situation (Turton 7). Sentenced to six years Martí was released after six months at the age of sixteen and was exiled to Spain.

In Spain he attended the Central University of Madrid where he was greatly influenced by the neo-Kantian movement known as Krausism, an idealistic movement that combined rationalist humanism with Christian thought.[2] Martí also continued the fight for Cuba in articles like "La República Española ante La Revolución Cubana" ("The Spanish Republic and the Cuban Revolution") (Madrid, 1873) and "La Cuestión Cubana" ("The Cuban Question") (Sevilla, 1873). In these early years Martí was extremely naïve in his thinking on Cuban independence. His stance on the matter was that Cuba was entitled to her freedom because of the innate goodness and prosperity found on the island. The Spaniards were despotic intruders. After his stay in Spain where many of his grievances were for the most part ignored, Martí went to Mexico.

At first in Mexico Martí was ebullient about the political climate and thought of it as a model for the other Latin American countries. Mexico came in close second place to Cuba in Martí's heart. Martí was a reporter in México and admired President Lerdo de Tejada, whom he considered an intelligent and democratic leader (Turton 65). Martí understood that there were some problems with the government in Mexico, but he felt that these problems would be easily overcome. Unfortunately for Martí, Porifirio Diaz staged a military coup and took over the Mexican government. In Mexico Martí began to see some of the problems that most Latin American countries would face if they wanted to be truly independent and free. The focus of his interests in respect to these problems was, in the words of John Turton "the workings and maintenance of democracy in the face of the unruly habits of a politically uneducated population, the economy of an underdeveloped Latin American nation and the evil influence of the Catholic Church" (65). Martí felt that there was immense potential in Mexico as in all countries of Latin America, especially because of its wealth of agricultural resources. Perhaps his impression of agriculture as the foundation from which Cuba derived her riches predisposed his opinion on the matter. He felt that in order for a country to survive in a world economy it should find its most abundant resources and utilize them. "Aquí se va creando una vida; créese aquí una Economía" ("Here is a life being created. Let an economic system also be created") (Marti 3: 784).[4] In this statement made by Martí we can see the dualism inherent in his thoughts (the influence of Krausism): the feeling of everything being related and all the parts being equally valuable.

The other problem Martí saw in Mexico was the people's reliance on government. He felt that it was their responsibility to make the government what they wanted it to be. After the military coup in Mexico, Martí returned to Cuba for two months before traveling to Guatemala. In Guatemala we can see how Martí's optimism for progress was overshadowed by his rejection of dictatorial forms of

government. Martí traveled to Spain, France and Venezuela before settling in New York City. During his stay in Venezuela, Martí witnessed its economic dependency and political authoritarianism, and his writing began to expound the need for political self-reliance and independence from foreign powers (Turton 76). He also took up the idea of a united Latin America envisioned by Simon Bolivar (1783-1830), the Liberator of Venezuela, Colombia, Ecuador, Peru, and Bolivia, and the first proponent of a republican brotherhood among Latin American nations. After his brief stay in Venezuela he went back to the United States where he developed this new ideology further.

During his stay in the United States, both before and after his Venezuelan trip, Martí realized the dangers inherent for all Latin American countries that dealt with the United States. Martí observed first hand the prejudice that many North Americans had against non-whites and Latin American countries. When Martí began to organize the Cuban revolutionary movement in earnest he knew that he must be careful of how he spoke about the United States because of its interests in Cuba. He likened the United States to a monster and said "Viví en el monstruo, y le conozco las entrañas: -y mi honda es la de David" ("I lived in the monster, and I know his entrails: and my sling is that of David") (Martí 1: 271). When the United States decided to allow Cuba free export of sugar, it tied the two countries together even more tightly. Later the United States began adding fees to the Cuban exports and this plunged Cuba into economic turmoil. When influential public figures of the United States began to publicly scorn and ridicule Cuba, Martí became embittered towards the United States. In August of 1893 he gave a scathing indictment of the United States. He went so far as to say that the "democratic and universal Yankee" of the United States had been transformed into a "authoritarian, greedy, and aggressive Yankee" and added that everyone in the United States valued only one thing - force, above all else (Turton 45). He accused the United States of being a continuation of an old monarchy. Here we can see parallels between the United States and the dictatorial governments that he saw in Latin America. He said that Cubans should leave the United States before they became as corrupt as the Anglo-American people. Against the Anglo-American threat, Martí's writing exalted the revolutionary potential of the Latin American continent. In his article "Nuestra América" we get an in-depth look at this pan-Americanist, anti-imperialist ideology. In the article Martí chastises those Latin Americans that would kowtow to the United States government out of fear. He boldly attacks the United States' imperialist policies and attitudes and reminds Latin Americans that political and economic autonomy is crucial for progress.

During his lifetime Martí experienced racial prejudice at the hands of the Spaniards, while in prison in Cuba, and from Anglo-Americans in the United States. Therefore he was strongly opposed to racism, yet he often made hasty typological judgements based on race (Turton 123). For example, in one essay, Martí referred to Native Americans as "criaturas serviles" ("servile creatures") and "hombres bestias" ("beastly men") (Martí 3: 747). Today people would argue that Martí himself was a racist, but in the 1880's he stood alone in a sea of hostility directed at him for his radical beliefs on the subject. In his article "Mi Raza" he says "La afinidad de los caracteres es más poderoso entre los hombres que la afinidad del color" ("The

affinity of character is more powerful among men than the affinity of color") (1: 487). This clearly delineates Martí's thoughts on equality among racial groups. The only thing a people lacked was proper education.

How to sum up Martí? Martí was a man who thought on a greater plane. He was strongly opposed to racism and felt that with the proper education every race could overcome what he believed to be its natural shortcomings. This is illustrated when he says: "La medida de la responsabilidad está en lo extenso de la educación" ("The measure of responsibility lies in the amount of education") (3: 748). He believed in an innate goodness within men and was vastly opposed to the massive accumulation of wealth. He wanted prosperity and progress but felt that it should be tempered so as not to become too ostentatious. Martí's continued defense of political and economic independence of Latin American countries faced with U. S. interests have made him an icon for Latin American leaders past and present who continue to encounter U. S. economic domination. Clearly, his was a true democratic vision. Finally, Martí was not only a man of words but also of actions. In the end he died fighting for his country's independence in a small battle with Spanish troops at Dos Rios on May 19, 1895. His death was a great loss to Cuban independence and politics, as well as to Latin American intellectual and literary history. Sadly, Martí's fears concerning the United States and Cuba were ultimately realized, as Cuba acquired a partial and limited independence thanks to US military intervention and supervision of the island's affairs.

MARTÍ IN LITERARY HISTORY

Since the death of Martí, many scholars have analyzed his literary and polemical works. Due to the great contributions Martí made to Latin America and Cuba with respect to politics and literature, there has been an overall glorification of him. In many articles he is often referred to as the "Apóstol." One author, Bibi Arenas, takes this glorification even further saying "un padrazo es el hombre de La Edad de Oro" and the actual literary work is "un evangelio vivo" ("a great father is the man of The Golden Age...[it is] a living gospel") (116-122). Arenas also states "Con profunda reverencia debíamos pronunciar el candoroso título de estas revistas" ("with profound reverence we should pronounce the title of this magazine") which gives the text a biblical connotation making any critical analysis of the work almost sacrilegious (115). Herminio Almendros describes La Edad de Oro as "un hermoso fruto y una rica promesa" ("a beautiful fruit and a rich promise") which further glorifies the text (118). Almendros, like others, compares Martí to other writers for children of his time while still glorifying him. Almendros looks at how Martí was different from other writers and makes a rebuttal to anyone that criticizes Martí for his use of upper level vocabulary in La Edad de Oro. Almendros says current literature for children is "hinchado, hueco, desmedido y feo," ("swollen, empty, unmeasured and ugly") which invokes the question: How can any literature written now compare to what Martí wrote in La Edad de Oro (129)? This glorification of Martí and his literature has created an impediment to the analysis of his work for children with regard to pedagogy and ideology.

Only recently has this glorification appeared dated, allowing for a more in-depth discourse to occur regarding his literature. For instance Esther Pozo Campos

analyzes the style in which Martí writes for children and how he captures their attention within his original stories. Her analysis, while still glorifying Martí's work, takes a different tone which involves setting, characterization, plot, narrative structure, and syntax of the story. However, she does not consider the ideological implications of Martí's fiction. In Ángel Esteban's introduction to one edition of La Edad de Oro he says

> El agitador de las masas, el hombre para todo los diferentes consulados, ése que apenas puede ofrecer un refugio a su timidez, en una época especialmente ajetreada y peligrosa para los destinos de su país, dedica una gran parte de su tiempo a escribir cuentos... (11) ("The agitator of the masses, the man of so many consulates, that man that can hardly give refuge to his own timidity, in a particularly risky and dangerous time for his country, spends a great deal of his time writing diverse stories...")

The passage still celebrates Martí but also takes a more objective approach. In his introduction Esteban looks at Martí in relation to other writers for children in Latin America and how Martí was different. His focus is general, and he briefly analyzes individual stories in La Edad de Oro. He does, however, mention the racial issue in "La Muñeca Negra" which he considers a radical statement against racism, one which situates a bourgeois girl on the side of the oppressed (37). This edition of La Edad de Oro was published in 1995, and we can still see some glossing over of how Martí dealt with these sensitive issues. This passage divulges a small bit of information about this story and leaves the reader with an incomplete picture of how the story deals with race. L.B. Klein also forms conclusions similar to Esteban when he calls the same story an opportunity to see the triumph of love over prejudice, but again the author is vague about the intricacies involved in the delivery of these concepts (Klein 25). The complexity of the stories Martí composed does not allow for an easy analysis. The racial and gender issues in his stories merit further analysis, and for this reason the stories in his magazine for children, La Edad de Oro, need to be revisited.

MARTÍ, EDUCATION AND LA EDAD DE ORO

In many of Martí's works he alludes to the importance of youth and education for the future of Latin American society. In several articles Martí emphasized how a good education was beneficial to society as a whole. This can be seen when Martí says: "Educar es depositar en cada hombre, toda la obra humana que le ha antecedido: es hacer a cada hombre resumen del mundo viviente hasta el día en que vive: es ponerlo al nivel de su tiempo: es prepararlo para la vida" ("To educate is to deposit in each man, all of the work of humanity that has preceded him: it is to make each man a summary of the living world until his present: it is to place him at the same level as his time") (Quesada 40). This passage clearly shows that Martí sees a need for adequate educational standards in Latin America to enable children to understand what is best for these countries. With his magazine he strives

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to properly educate Latin American children. Properly educated children will lead the masses out of dictatorship into liberty.

Martí puts forth the question: "Cómo han de salir de las universidades los gobernantes, si no hay universidad en América donde se enseñe lo rudimentario del arte del gobierno, que es el análisis de los elementos peculiares de los pueblos de América?" ("How can rulers come out of universities if there is no university in Latin America where the rudimentary arts of government, the analysis of the elements peculiar to the Latin American peoples, are taught?") (Martí 3: 108) From this question we can see why Martí is interested in education. Not only does he see the need for informing children of their heritage but he also sees the need to explain the inner workings of political entities in Latin America. The other reason children are important to Martí is their impact on the future "los jóvenes de América se ponen la camisa al codo, hunden las manos en la masa, y la levantan con la levadura de su sudor" ("the young people of America are rolling up their sleeves, sinking their hands in the dough and making it rise with the leaven of their sweat") (Marti 3: 110). There are also certain passages where he describes America as a child needing direction and proper care to grow to its full potential. His comparison of the country to a child reveals the belief that the future of Latin America could be shaped by properly educating the children of said country. Martí sums it up best: "porque los niños son la esperanza del mundo" ("because the children are the hope of the world") (Quesada 40).

In his magazine for children, La Edad de Oro, Martí attempts to provide some key elements which he feels are missing in education. He does it in such a way that it reflects many of the characteristics of the French Revolution's short-lived politicization of children. We see this in the introduction of the magazine when Martí talks to his young readers as if they were equals. He creates an ambiance of friendly dialogue between the authors of the magazine and the children reading it. This further reveals the importance of children and education to Martí. Martí also evokes the use of imagination. He draws a picture with his words in the mind's eye and one cannot help but see what he writes about. He relies on the vivid imagination of the child to help him or her reach the understanding he is trying to convey. He exalts children to the highest degree of importance in that he sees them as the future of Latin America.

La Edad de Oro (The Golden Age) was a short-lived magazine having only four issues published in New York. Those issues were published in July, August, September, and October of 1889. In a letter that Martí wrote to a friend he disclosed the reasons behind the discontinuation of the magazine: "...y sobre La Edad de Oro, que ha salido de mis manos a pesar del amor con que la comencé porque, por creencia o por miedo de comercio quería el editor que yo hablase del 'temor de Dios' y que el nombre de Dios..."("...and about The Golden Age, it has left my hands despite the love with which I began it because, due to conviction or for fear of commerce the editor wanted me to speak of the "fear of God" and of the name of God...") (Marti 4: 314). Martí's principles would not allow him to transform his modern political magazine into a conservative religious magazine as requested by the editor. Originally the demand for change within the magazine's content was caused

by the financial difficulties it was experiencing. In order to avoid compromising his principles, Martí stopped publishing the magazine.

In the different issues of the magazine Martí inserts articles about traveling, games, fables and fictional stories. He also includes many summaries about scientific and historical investigations. In each issue there is a preliminary note to children who will read the magazine, which is directly followed by the articles and stories.[4] The various titles give insight to the thrust of La Edad de Oro. Some of the articles, such as "El camaron encantado" ("The Enchanted Shrimp"), are literary works by other authors that Martí has translated and annotated for publication in his magazine. He also includes an article describing the World's Fair in Paris. At the end of each edition Martí reserved a page to converse with children. This illustrates Martí's need to foster a friendship with the child to create a sense of familiarity. From these editions we can draw many conclusions about what Martí wanted to teach children, as well as make parallels to the political climate during Martí's time.

GENDER IN THE PREFACE TO LA EDAD DE ORO

In the introductory paragraph of the first edition of the magazine, Martí makes it clear that there is a need to teach boys and girls together. He clearly states that you cannot properly teach one gender without teaching the other; it must be done in unison. He does this by adding girls to his first sentence in the opening paragraph. "Para los niños es este periódico, y para las niñas, por supuesto" ("This newspaper is for boys, and for girls, of course") (Retamar 29). He suggests that it is a foregone conclusion that the magazine will be for boys and girls with the words "por supuesto" ("of course") (29). He takes this concept of unity even further by saying "Sin las niñas no se puede vivir, como no puede vivir la tierra sin luz" ("Life is not possible without little girls, like the soil cannot live without light") (29). After this first line he goes on to discuss what a boy should do in life. He has a litany of virtues that are inherent in a boy. Even if the child is ugly on the outside, if he has these attributes he will be beautiful. These virtues have nothing to do with outside sources. They all come from a spiritual well.

He takes inner beauty even further when he talks about the interaction between children of the opposite sex. When a male child gives to a female child, he is at his most beautiful. This suggests that men should honor and revere woman and in so doing they will engender a goodness in themselves. With respect for one another they can become spiritually whole:

> "nunca es un niño mas bello que cuando trae en sus manecitas
> de hombre fuerte una flor para su amiga, o cuando lleva del
> brazo a su hermana, para que nadie se la ofenda: el niño crece
> entonces, y parece un gigante" ("...never is a boy more
> beautiful than when he brings in his little hands of a strong
> man a flower for his feminine friend, or when he holds his
> sister's arm, so that no one may offend her: the boy grows that
> way, and looks like a giant") (29).

In that same line Martí tells children what they should become as adults. The boys will become "caballeros" ("gentlemen") and the little girls will become "madres" ("mothers") (29). This introduction exhibits Martí's belief in a dualistic

model of gender. He goes on to tell them that them that the magazine will be an ongoing conversation between the magazine and themselves "con los caballeros de mañana, y con las madres de mañana" ("with the gentlemen of tomorrow and the mothers of tomorrow") (29). Martí puts the two genders together reiterating his belief that they must be taught simultaneously.

He then explains what kind of education his magazine will contain for girls and boys. The girls will get cute stories to entertain company and play with their dolls, revealing Martí's progressive yet bourgeois view of the enlightened, maternal housewife (29).

"Las niñas deben saber lo mismo que los niños, para poder hablar con ellos como amigos cuando vayan creciendo; como que es una pena que el hombre tenga que salir de su casa a buscar con quien hablar, porque las mujeres de la casa no sepan contarle más que de diversiones y de modas..." ("Little girls should know the same things that little boys know, in order to be able to speak with them as friends as they grow; it is a shame when a man needs to leave his house to find someone with whom to speak, because the women of the house only know how to speak of diversions and fashions") (31).

The boys will get "lo que deben the saber para ser de veras hombres" ("what they need to truly be men") (29). This magazine will aid them in becoming real gentlemen suggesting that Martí does not believe the educational system is fulfilling its duties. Martí wants the magazine to teach children everything they ever wanted to know and more. He also wants the magazine to do it in a way that children will be able to understand and enjoy. Here Martí concedes the necessity of speaking to children in a simpler and clearer discourse. "Todo lo que quieren saber les vamos a decir, y de modo que lo entienden bien, con palabras claras y con láminas finas" ("Everything they want to know we will tell them, and in such a way so that they may understand us well, with clear words and beautiful illustrations") (29). Martí is going to reveal to children all that has happened up to this point in time and beyond.

In the next paragraph Martí limits the magazine to children of Latin America.[5] He makes this magazine for Latin Americans as if he believes there is not sufficient education for those children whom he feels are the future of Latin America. He wants to educate them on the history of Latin America. Again we can see his views of an inadequate education system that does not teach history as it should be taught. Martí wants to teach about other lands, geography, and science. He also wants children to be familiar with famous books and to have an understanding of the basic nature of things. He wants to relate the beauty and mystery of progress (which is as magical as nature) as well (30). And, after teaching all the subjects, Martí wants the children to have some fun with his magazine. We can see that Martí understands the need for diversion and play in the midst of the learning and studying that must occur. Without balance you have scholars that are too tired to continue on the road to enlightenment. Martí also feels that adults should work hard at educating the children because "los niños son los que saben querer, porque los niños son la esperanza del mundo. Y queremos que nos quieren, y nos vean como cosa de su corazón" ("children are the ones who know how to love,

because children are the hope of the world. And we want them to love us, and to see us as a part of their heart") (30). Martí wants children to have a bond with the magazine and feels that they will learn better because of this bond.

The bond that Martí wants to create allows children to be confident in their correspondence with the magazine. They should not be ashamed of their letters but should write to him with confidence. They should write what they know about because "los niños saben mas de lo que parece" ("children know more than what might be expected"). Here Martí shows his belief that children are more intelligent than they are given credit for (31). Again, we have the idea of the empowered child that can bring about the kind of societal changes that children's literature of the French Revolution promoted. Martí goes on to say that "Así queremos que los niños de América sean: hombres que digan lo que piensan, y lo digan bien" ("Thus, we want the children of Latin America to be: men that say what they think and speak it well") (31). This further emphasizes the idea there is more than meets the eye (of adults) where children are concerned. We also have the concept of competition as something that is good among children. Martí gives the feeling that if a child competes he will want to do his best. He also suggests that girls should write as well. Again we see the duality of education for boys and girls. Martí tells us "De seguro que van a ganar las niñas!" ("The girls are sure to win!") and this portrays a feeling of girls being capable of doing work that is better than that of boys (31). Marti was ahead of his time to believe that a girl could possibly do better than a boy. In that day and age it was believed that girls could not possibly compete on the same level.

At the end of his introduction, Martí comes back to the notion of friendship between the writers of the magazine and the children that read it. He does not want to be an authoritarian figure for children; he wants to be their friend. A teacher today is told not to be a child's friend but to be his/her teacher. It is interesting that Martí broke with the tradition of making a child subordinate to the adult and instead made the child his friend. This only enhances the feeling that Martí felt children had much power over what would become of the world. This led to Martí's need to teach children how to make changes by empowering them and giving them equal footing within the relationship between the adults writing in the magazine and the children. "Y si alguna vez nos encuentra un niño de América por el mundo nos apriete mucho la mano, como a un amigo viejo, y diga donde todo el mundo lo oiga: 'Este hombre de La Edad de Oro fue mi amigo!'" ("And if some time a Latin American child squeezes our hand a lot, like an old friend, and says so that everyone may hear: 'This man from The Golden Age was my friend!'") (31).

NENÉ TRAVIESA (MISCHIEVOUS NENÉ) AND THE CRITIQUE OF THE UNITED STATES

In this story we meet a five-year-old motherless little girl, Nené, that loves to play at being a mother, a store clerk and to make candies. We get the picture of a little girl that generally does the right thing but occasionally strays from the straight and narrow. Once she went to the store to buy a pencil, but she ends up buying a sweet pie. She completely forgets to buy the pencil. Nené's father is a good man that works hard to provide for his little angel, but he is often sad. When he comes

home from work Nené often comes out to give him a hug, and he often brings books home from work, and, if they have pictures in them, he shows them to her. One day Nené looks at a large 100-year-old book that has been left lying open on a chair and that her father has explicity forbidden her to look at. In the book, Nené sees a monster as big as a mountain with many men climbing on it. She tears a page of the book in her excitement to see more pictures of the same caliber. The next page is different but just as beautiful as the first. This one has animals playing with one another. She becomes so engrossed that she tears out the whole page and another after that. When her father catches her and chastizes her for damaging the costly book, Nené is broken-hearted and embraces her father, fearing that she will now not go to heaven because of what she has done.

In this story Martí begins by putting the little girl into the expected domestic domain. This does not last long because directly after placing Nené in her domain, he reveals the economic/political spheres to her by way of her father. This public domain is usually reserved for boys. Martí allows the father to reveal bits and pieces of this world to the little girl in the books that he brings home. Nené's natural curiosity brings about her complete immersion in this masculine domain when she disobeys her father and looks at the 100-year-old book. Further, Martí gives his young protagonist power over the adult. When he says "Las niñitas deben querer mucho, mucho a los papás cuando se les muere la madre" ("Little girls should love their fathers very much after their mothers die"), he initiates the shift in power from the adult to the child which also indicates Martí's belief that little girls are important (108). The household does not have the adult feminine influence that is necessary; therefore, the implication is that Nené should take over the absent mother's influence. Although Nené shoulders this responsibility of the feminine role in the story, she does have some faults, such as forgetting what she should do at times: sometimes doing what she wants to do, such as buying a sweet cake instead of buying the pencil she was supposed to buy with the money her father gave her. We get the picture of a precocious little girl who generally is good. At times she falters, perhaps because of the lack of guidance from a maternal figure, yet this allows the child reading the story to breathe a sigh of relief because shouldering this responsibility does not require perfection.

After the initial description of the child, Martí begins to talk about the father and the relationship between him and Nené. The father needs to be able to talk about his days at work, but his wife is no longer there, so he talks to Nené. Father and daughter begin to discuss death and the aspects of life after death. The questions the little girl asks suggests a deeper understanding of death as it is explained within the text. This duality of knowledge about the world through books and an understanding of spirituality returns to the feminine understanding of the domestic sphere. Yet this conflicts with the general atmosphere of what was expected from females during this time period. Nené wants to know why everyone is sad and feels that people should be happy for the dead person because she will be in a beautiful place. Here the child is more knowledgeable than the adult, further empowering the feminine child. The beauty of a child's reasoning is seen, and the selfishness of adults is also seen when the father asks her if she intends to go alone to heaven. There is a lack of understanding in the father, and the child could enlighten him but the child's

inherent fear of losing the father frightens her. This idea of being alone frightens the child so much that she will not leave her father's side that night. Martí attempts to empower the child, yet he continues to make her vulnerable at the same time.

That same night the father brings a book home which they talk about. This reiterates the point that Martí felt education was important for children. Martí takes the conversation between the father and daughter in the direction of books and the father tells the daughter that "Un libro bueno es lo mismo que un amigo viejo" ("A good book is the same thing as an old friend") (108). This illustrates the importance Martí places on history and involves Nené, a part of the domestic sphere, in a subject that would normally be reserved for the public sphere. The child cannot resist the temptation of looking at such a book even if her father tells her not to touch it. Here Martí suggests that the feminine sphere has been suppressed and denied information about the masculine sphere, yet Nené is capable of breaking with the expressed norms. She goes to the room where the books are located and there the book is open as though it were waiting for her the whole time. The sensation here is one of information waiting to be discovered, and the protagonist only has to gather the courage to approach and it shall be hers for the learning.

Nené enters the room and does the unthinkable: she steps into the masculine/political world. Martí writes the story in such a way as to make this invasion nonthreatening. As Nené is looking at the book while her father is at work, she becomes entranced with the pictures and begins to rip the pages of the book out. Martí gives a description of the pictures that Nené tears out. One picture depicts men of different color climbing a mountainous giant that has one eye. In his article "Nuestra Patria" he refers to the United States as a giant whom Latin Americans should regard with suspicion because of its unknown agenda. This reference to the United States as a giant reinforces the interpretation that the picture is a representation of the United States. Martí is exposing the protagonist to this highly sensitive issue of race. With the picture Martí is also making a strong statement about the United States. Everyone thinks the best place to be is the United States, so everyone strives to go there as the men climbing up the beast are trying to do. Upon reaching the summit of the beast (the United States) they will be horrified at what they discover and will eventually be crushed by the monster. This is additionally supported by Martí's own words in a letter written to Manuel Mercado in 1895 in which he describes the United States as a monster.

Another picture that Nené tears out is very different from the previous page. It is a world of dolls. There are many small dolls of different colors playing with each other. There is one doll that is bigger than the other dolls, and it has a big stick and walks like a man. One of the dolls is biting the big doll on the rear. There are also children that are holding on to one another. This is also a reference to the way in which the United States sees people from other countries and races. The general idea is the same as the previous picture only in this one there is a sense of the larger doll not being entirely in control. In this picture the other entities are playing together and are not concerned with the doll representing the United States. All of this Martí puts in a story meant for little girls. Nené, the little girl, is being exposed to this political sphere of criticism against the United States. In the end though,

Martí allows the child to revert to the domestic sphere by allowing her to be contrite for her misdeeds.

From the distance the girl can hear someone talking to her. She has become so engrossed in her task and the book that she does not realize that her father is home and is upset with her actions. When she realizes what has happened she is deeply ashamed. She sees her father's anger, and in his anger he grows to astronomical proportions in her eyes. By having the father take on the aspects of the giant in the picture, Martí reveals the struggle he has with the gendered division of spheres. The denial of information has made the father no better than the monster. Yet the child conforms to the accepted feminine ideal when Nené realizes she has done wrong. Nené says she has made her father unhappy, and this means she will never get to the blue star.

LA MUÑECA NEGRA (THE BLACK DOLL) AND RACE

This story starts with the parents coming into their daughter's room on the eve of her birthday. The room is filled with an array of toys as any child's room might be. The room is like the world they live in. Out of all the toys in the room the little girl, Piedad, is sleeping with her black doll. The next morning Piedad wakes up and talks with Leonor, her black doll. She knows something is up, and she wants Leonor to tell her what is going on. Piedad combs her doll's hair and converses with her. Then an entourage of the people in the house comes into Piedad's room. They are celebrating Piedad's birthday. Her father is home early, and he is hiding something behind his back. He holds his little girl in his arms and she reaches for the surprise he has for her. It is a porcelain doll with blue eyes and blond hair. The doll is dressed similarly to the little girl. Piedad tries to teach the doll to walk. She sits the doll down and watches her without smiling. She touches the doll's chest where there should be a heart and says "Talk to me doll, talk to me!" But the doll does not talk. The little girl understands what the doll wants. The doll wants carriages, fine candies and lackeys. After her parents have tucked her in and made sure she is alright, they turn out the light and leave the room. Piedad turns the light back on and finds her Leonor. She lies down with her and has a conversation with the doll. She holds the doll lovingly and begs to be forgiven for having left her alone for the other doll. Piedad gives the bouquet to the doll and professes her love saying "Te quiero, porque no te quieren" ("I love you because they don't love you") (224).

In this second story, La Muñeca Negra, the issue of race is obvious. There are two major aspects within the story that I wish to look at, the black doll and the white doll. Martí uses the dolls to put forth the question of race to the child, Piedad. Again we see the feminine protagonists being thrust into the public realm, a traditionally nonfeminine domain, much like Nené in the first story. The major difference between the two protagonists is that Piedad has a mother and Nené does not. Yet the feminine child still ends up being smarter than the parents by making the right choices.

As the story begins the parents are walking into Piedad's room. Martí describes the child's room in great detail. At the very end of his description he tells the reader of this inconsequential doll from the viewpoint of the parents. The black doll with "la boca desteñida" ("faded mouth") is sleeping with the little girl (220).

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The mention seems like an afterthought at the very end of the paragraph, which makes the doll seem less important than she later proves to be. This all appears from the adult's viewpoint. In the very next paragraph we see the little girl waking up and noticing something is afoot. The little girl begins to talk to the doll and here is where we see the difference of opinion between the little girl and the parents. The little girl even calls her mother bad because the mother has not allowed her to take the black doll with her on previous outings because of the doll's raggedy appearance. Yet in the very next ruminations of the child she admits that the doll has become rather ugly. Even with the features the doll has, the little girl loves the doll. "te he puesto muy fea con tantos besos, y que no tienes mucho pelo; pero yo te quiero así, sin pelo" ("I have made you ugly with so many kisses, and you don't have much hair; but I love you that way, without hair") (220).

Martí suggests that different races may have superficial shortcomings but they still have merit and should be respected and loved. The child can see past these shortcomings to the spirit that is hidden beneath them. When the little girl says "tus ojos son los que quiero yo, porque con los ojos me dices que me quieres" ("your eyes are the ones that I want, because your eyes tell me you love me"), Martí expresses his belief that black people have inherent spirit (220). There is an implication of existing spirit or goodness that the adults obviously cannot see in the story. These supposedly intelligent and educated adults in the child's life do not love the black doll. The child on the other hand sees beyond the outside appearance of the doll and accords a greater importance to the doll than would be given by someone of supposedly greater intelligence. Piedad loves the doll and then runs down a list of the doll's faults, which would seem to be a direct contradiction to the message that Martí wants the children reading the story to receive. Perhaps Martí wants the children to understand that even if someone looks different than us and appears ugly in comparison to our self image, they should nevertheless look beneath the outside appearance and accept the goodness that is inherent in all people. The black doll has spirit and intelligence according to Piedad. The new doll that the little girl receives does not.

The new doll is brought for the little girl on her birthday and she is unaware of the gift. She jumps up on her dad and reaches for the hidden gift. She wants the gift with the natural impatience of a child about to open a present she has been anticipating for several weeks. The little girl is excited, and when she reaches over her father's shoulder to get the hidden gift, we see her impatience. Here Martí expresses the enthusiasm of people towards something that they know nothing about. The outward appearance may seem like something we want, but if we do not know the interior of that object we should not be so eager to have it. The feeling that the girl was eager to have something is revealed later in the story, and she comes to the realization that the object of her desire was not all she thought it would be. She is lucky in that she was able to go back to her black doll and beg forgiveness.

If we were to read the story as a political allegory it could be said that people strive to have the freedom offered by the United States (the new doll) but may not be pleased as the United States reveals her true attributes. The attributes of the porcelain doll are all on the surface: "Es como el sol el pelo... Tiene el vestido

rosado!... las medias, de encaje como las mías... la muñeca de seda y porcelana... los ojos azules" ("The hair is like the sun...She has a pink dress!...lace stockings like mine...the porcelain and silken doll... the blue eyes") (221-22). All of these attributes make the doll beautiful in appearance, yet the girl senses something missing in the doll, as Martí sensed something missing in the United States. When the child first sees the doll she is enamored of it. All of her comments are made in excitement for having such a wondrous gift bestowed upon her, and she runs off to play with doll. After a time the little girl stops playing with the new doll and only plays with it to please her mother. Piedad wants the doll to talk to her "Pero muñeca hablame, hablame" ("But doll, speak to me, speak to me") (222). But the doll will not speak. The reader gets a sense of urgency in the child's voice. We sense the child's distress. After the doll will not talk to the little girl, the little girl says she understands and knows what the doll wants, "Usted querrá coches, y lacayos, y querrá dulce de castañas, señora muñeca" ("You will want carriages, and lackeys and chestnut sweets, Miss Doll") (222). Here we have the implication that the doll perhaps will not speak without those grand things being given to her. This shallow portrayal of the doll that would represent the Anglo-Saxon United States is a strong statement against the acquisition of wealth. This interpretation is supported by Martí's article written in New York in September of 1881 where he describes the United States as a selfish woman.

> ...esas abominables figurillas que a modo de maniquíes escapados de los aparadores de las tiendas, dislumbran por estas calles ricas a extranjeros incautos y a jóvenes voraces...esas criaturas frívolas y huecas, vivas sólo para la desenfrenada satisfacción de los sentidos, que aflijen y espantan el espíritu sereno con su vulgar y culpable concepto de los objetos más nobles de la vida... ("...those abominable figures that like mannequins escaped from store windows, shine down streets that seem rich to careless and voracious young outsiders...those frivolous and hollow creatures, alive only for the free indulgence of the senses, that afflict and frighten the serene spirit with their vulgar and guilty concept of the more noble objects of life") (Martí 2: 252).

The porcelain doll is empty of spirit and full of materialistic wants. What the little girl wanted with such enthusiasm has turned out to be something that should not have warranted so much excitement. This story further states Martí's beliefs about the United States and the race issue through the use of something so small and insignificant as a child's play things.

In the end the little girl goes to bed with the realization that the old doll is the more beautiful of the two. "Ésta es mi muñeca linda" (224). The child has realized that the beauty of the new doll cannot compare to the inherent spirit of the old black doll. The spirit within the black doll makes it beautiful which is illustrated by Piedad's words: "tú no éstas fea, no, aunque no tengas más que una trenza: la fea es ésa, la que han traído hoy, la de los ojos que no hablan" ("you are not ugly, no,

although you only have one braid: the ugly one is that one, the one that they brough
today, the one with the eyes that do not speak") (224).

CONCLUSION

These stories may be used to understand Martí as a political thinker. In
these stories Martí reveals an idea similar to those which erupted from the French
Revolution, allowing for the participation of children as a force for social change
The major difference is that Martí gives the feminine child the power and
intelligence that adults in his time did not have. Martí enabled the feminine
protagonist to enter the political world, which was for the most part off-limits to girls
during his time, by making her a pleasing feminine character and by giving her
angelic qualities. This was an ingenious approach to enlightening that sector of
society which was characteristically ignored in regard to the political/economic
realm. Martí's girls are spiritually stronger than the adults in the stories. Martí uses
these stories to convey his views on racism, social class, and the United States. By
writing the stories for little girls, he gives them the information he wants all children
to have. Therefore, we see the reason for his emphasis on teaching little girls along
with little boys. What little boys do not learn from the political/economic world they
can learn from little girls.

This is an important concept to study in more depth because this
politicization of children was rare during Martí's life time. It is necessary to
understand the groundwork laid by Martí for the more modern approach to
politicizing children. This is a more common practice in recent years, but it is not
done with the same amount of finesse with which Martí was able to do so. I truly
believe that Martí was correct in his belief that children are the future of society, and
his influence prevails to this day. Therefore, he will continue to affect the future of
society. Consequently there is a need for further research and analysis of José
Martí's literary work for children.

[1] John Newbery published one of the first books meant specifically for children in
1744. In his book, The Pretty Little Pocket Book, Newbery used entertainment to
educate children. Although primitive by today's standards it was in fact a break
from the norm in that time period. Children's books did not exist as a separate
literary genre before Newbery. Many would like to say he sparked the beginning of
the proliferation of children's literature for enjoyment, unfortunately this is not the
case. The children of the world would wait approximately 100 years after Newbery
wrote his book before that explosion would occur (Encarta Encyclopedia).
[2] Krausism which was developed by Karl Krause (1781-1832) was a strange mixture
of moralistic idealism and positivism. Krause envisaged humanity as arriving at an
organic completeness that represents the maturity of the race, and with visionary
eloquence he depicted the unification of all mankind, as all men and all associations
of men enter into a common life. He often muddled his philosophy by using words
that could not be translated to any understandable language which made it an
unpopular philosophy. Although it was not popular in Germany where it originated,
it gained a wide following in Spain. (Edwards 363-65)
[3] Translations from the Spanish originals are by myself and Dr. Chris Conway.

[4] The titles of the articles are as follows: First Issue: 1.)Tres Heroes 2.)Dos Milagros y Cada uno a su oficio (two poems) 3.)Menique (cuento de magia) 4.)La Iliada de Homero (fragment of "historia cunetizada") 5.)Un juego nuevo y otros viejos (about games) 6.)Bebe y el senor Don Pomposo (original story by Marti)
2nd Issue: 1.)La historia del hombre: contando por sus caas y Las Ruinas Indias (anthropological and cultural) 2.)Los does principes de Paris y La Perla de la Mora (two poems) 3.)Nené Traviesa (original story by Marti) 4.)Musicos, poetas y pintores (about art)
3rd Issue: 1.)La exposicion de Paris (documentary about the "feria mundial") 2.)El Camaron Encantado (Story about magic by French author Laboulaye) 3.)El padre Las Casas (historical fiction - historia cuentizada) 4.)Los Zapaticos de rosa (poem)
4th Issue: 1.Un paseo por la tierra de los Anamitas y Cuentos de elefantes (anthropological articles) 2.)Historia de l Cuchara y el Tenedor y La galeria do las maquinas (uses industrial to teach morals) 3.)La muñeca negra (original story by Marti) 4.)Los dos ruisenores (story by Anderson)
[5]In Martí's political vocabulary, "América" stood for Latin America, as opposed to the U.S. and Anglo-America. In this essay, Martí's "América" is translated into English as "Latin America."

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A Psychological Investigation into the Literary Case Study of Dr. Jekyll and Mr. Hyde by Robert Louis Stevenson

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ABSTRACT

In attempting to arrive at a better literary understanding of Stevenson's Victorian novel, *Dr. Jekyll and Mr. Hyde*, it is analyzed as a case study of various psychological theories and disorders. References to Victorian and contemporary psychological terms of assessment are used in a parallel attempt to achieve an increased knowledge of these same psychological disorders that have affected a multitude of persons from the Victorian age up to modern society. Via quotes from the text, the novel is examined in the light of Sigmund Freud's theories on the structural model of personality and repression, Gordon Allport's idiographic approach to personality, multiple personality disorder, anti-social and borderline personality disorders, and the psychology of addiction.

Robert Louis Stevenson's gothic novel, *Dr. Jekyll and Mr. Hyde*, is not a story of a monster. It is not about a madman or a serial killer. It is a story about an entity—the one who dwells inside most of us, externally conforming to culture, yet internally lusting for liberty. It is a story of a man that can transcend time in its telling; its central character seems to have always been present, "Surely he has always existed in the collective imagination, or, like Jack the Ripper, in actual history?" (Oates, 603). It is the story of Dr. Jekyll and Mr. Hyde-- not two people that dwell inside one man, but one man with two impulses roaring to be heard inside of him. These two inclinations need not be binary opposites. The lines between the two characters blur the story's interpretations and yet often blind the story's readers to the misconception and myths surrounding the story created by its immense popularity in modern pop culture. "The two sides compare almost as conscious and unconscious. In a sense they never meet: Jekyll develops on his own, and his development and no other person determines his fate"(Manlove, 89). Often seen in films simply as the story of a *good* man taking a ghastly "potion" and becoming an *evil* man, the vast and complex psychological implications of the story extend to the benefit of an understanding of not only the true nature of this allegorical piece of fiction but also to an awareness of the countless psychological struggles that the average person deals with in a lifetime and the not so average person suffering from a psychotic disorder deals with on a day-to-day basis.

It is ventured to say that if the original groundbreakers of the psychology of personality, from Sigmund Freud to Gordon Allport, were armed with a copy of Stevenson's *Dr. Jekyll and Mr. Hyde* with intentions into seeking out its psychological ramifications as a genuine case study, it alone could have been used by them as a substantial springboard and fruitful source of research. Therefore, theories and research from Victorian as well as modern day psychology can be used to analyze the novel in terms of various interpretations of the text in regards to a

multitude of psychological topics, including Freud's theories on the structural model of personality and repression, Allport's idiographic trait approach to personality, multiple personality disorder, antisocial and borderline personality disorders and finally, the psychology of addiction.

THE SUBCONSCIOUS SOURCE AND PSYCHOLOGICAL ENVIRONMENT OF STEVENSON'S INSPIRATION FOR THE NOVEL

The dream of reconciliation between conflicting selves is but a dream after all.
Rosenfield, *The Shadow Within*

Published in 1886, Stevenson drafted the story in three days and completed its writing in six weeks. The story was developed in an unconscious state of sleep. "All I dreamed about Dr. Jekyll was that one man was being pressed into a cabinet, when he swallowed a drug and changed into another being...All that was given me was the matter of three scenes, and the central idea of a voluntary change becoming involuntary" (Swearingen, 99). The dream served as a catalyst for every other aspect of the story to Stevenson, and it was the "missing" link for what he had been looking for so long. He had long been "trying to write a story on this subject, to find a body, a vehicle, for that strong sense of man's double being, which must at times come in upon and overwhelm the mind of every thinking creature" (Swearingen, 99).

According to his wife, Fanny Stevenson, her husband's ultimate inspiration for Dr. Jekyll and Mr. Hyde was "a paper he read in a French scientific journal on subconscious." The article is said to have "deeply impressed" Stevenson and eventually came to visionary action in his dream. The unidentified article apparently appeared in the 1870's or the late 1860's (Swearingen, 101) The Victorian psychology of Stevenson's time consisted of complicated theories on the degeneration of personality and its multiplex aspect. The theories of Sigmund Freud had another ten to fifteen years before becoming widely known. The published psychology articles of Stevenson's time contained many prominent case studies, perhaps one or a combination from which Stevenson used to outline the characteristics of his now infamous Dr. Henry Jekyll. Referring to his most famed literary creation, Stevenson wrote to J.A. Symonds, "Jekyll is a dreadful thing, I own; but the only thing I feel dreadful about is that damned old business of the war in the members" (Manlove, 100). This idea of a war in the members seems to suggest a notion of a compound division in the mind and body of man, a dual character. Not denying the obvious aspects of this .multiplex personality disorder apparent throughout the story, and not dismissing its relevance to its psychological investigation, the conscious reader is aware that it is only one interpretation of the Victorian text. In 1893 Stevenson told an interviewer that he had never heard of a real case of "double personality" as he was writing the book. "After the book was published I heard of the case of Louis V., the man in the hospital at Rochefort. Mr. Myers send it to me" (Swearingen, 101).

The Mr. Myers Stevenson spoke of was Frederic W.H. Myers. A Victorian psychologist, Myers authored many psychological articles on personality throughout the 1880's. The case study of Louis V. is one of his most note-worthy and insightful ventures into the personality of man. A traumatic experience in his early childhood (receiving a great fright from a viper) permanently damaged Louis V.'s mental health and caused him paralysis and indistinct speech habits, causing him to be in and out of hospitals for the rest of his life. This example of an illustrated case study involving a "hysterical transfer, of morbid disintegration" is very characteristic of the psychology of Stevenson's time (Myers, 648). In the case of *Dr. Jekyll and Mr. Hyde*, it seems as though art does not imitate life, but that the experience of Louis V. and the like imitates Stevenson's literary work of art. Communicating his theory of how man can adjust himself into society although his personality may be disintegrating, Myers stated "I ...show that these spontaneous readjustments of man's being are not all of them pathological or retrogressive; nay, that of familiar changes of sleep and waking contain the hint of further alterations which may be beneficially acquired" (Myers 648). Thus, Jekyll's dastardly doings are not limited to strange phenomena in his being, but are as ordinary and natural—and if slightly tempered might prove to be essential to his character and well being. Generalized to the masses of society whose states of consciousness and unconsciousness alter constantly within the cycle of sleep, what happened to Dr. Henry Jekyll could very well happen or be happening to anyone at anytime...*The Strange Case of Dr. Jekyll and Mr. Hyde* (Stevenson's original title) may not be so *strange* after all.

PART I :

A PSYCHOLOGICAL ANALYSIS OF STEVENSON'S TEXT

The Theory of Personality: Freud vs. Stevenson;

Victorian vs. Contemporary Views

Not until Freud revealed the importance of the irrational in man have we been willing to admit the possibility that each of us has within us a second or a shadow self dwelling beside the eminently civilized, eminently rational self.

Rosenfield, *The Shadow Within*

Though Sigmund Freud's contribution to the development of personality has often been criticized, it must be acknowledged as the root of modern theories of personality. Therefore, a discussion of Freud's theories of the structural model of personality and repression in conjunction with their relevant interpretation in Stevenson's characters opens up fresh areas of thought on the contemporary psychology of personality. Believing personality to be the product of the subconscious mind, Freud and Stevenson alike were both impressed by the profound actions stemming from the personality, actions apparently of a subliminal state of

man, a man ruled by hidden impulses. Stevenson described such a man in Dr. Henry Jekyll a decade before Freud did in psychological discourse. Clearly Stevenson lamented the fact that he would not receive full recognition for his ideas on the division of man when he predicted "others will follow, others will outstrip me in the same lines" (Stevenson, 55). Nevertheless, giving credit where due, perhaps it is the allegorical theories presented in Stevenson's most legendary novel that can be recognized as the root of modern theories of personality.

Along with these observations on the link between Stevenson and Freud, a brief examination of the interconnection between Victorian and modern psychology proves insightful. It seems that Victorian psychology possessed theories on good and evil, the moral convictions of man's mind which could be altered by external stimuli: "I shall point out that we can already by artificial means induce and regulate some central nervous changes which effect physical and moral good" (Myers, 648). These significant psychological concepts relate directly back to the story of Dr. Jekyll and Mr. Hyde, a story of (but not limited to) good and evil. Furthermore, modern psychology uses no terms as morally judgmental as *good versus evil* to diagnose any mental disorder. The closest that contemporary views come to such a concept is moral anxiety, which is a term first coined by Freud to describe the condition in individuals that is brought about by their personal value system when reacting to the natural desires that violate their stringent moral codes (Burger, 153).

This condition presents itself in contemporary clinics of psychology in the form of severe shame and guilt (Burger, 52). A person experiencing moral anxiety could possibly be feeling the same shame that Jekyll felt when realizing the severity of his deeds as Hyde, "I was often plunged into a kind of wonder at my vicarious depravity" (Stevenson, 59). While the psychologists of Stevenson's time believed that external artificial inducements could affect the moral status of an individual, moral anxiety seems to be caused by the internal stimuli of thoughts and subconscious impulses. While Dr. Jekyll and Mr. Hyde is the story of that artificial inducement, that external stimuli that changes Henry Jekyll's bodily chemistry to somehow transform his original good nature into his evil alter ego, it is at the same time the story of Jekyll's moral anxiety, the tumultuous friction brought about by the id's violation of the superego.

Freud's Structural Model of Personality as Applied to Stevenson's Text

The Ego cannot escape from itself.

Freud, *"The Ego and The Id."*

Freud's widely published and publicized structural model theory divides personality into three parts: the id, the superego, and the ego. Known as the pleasure center, the id is the part of the subconscious wailing as an advocate and chief of the brain's desires. Buried away from awareness in the unconscious, the id harbors impulses that thrive on themes of sexuality and aggression (Burger, 50). The superego, the id's arch nemesis, rules forcefully as the moral conscious and accountant. The superego provides restrictions to our actions and guides the ego in assessing the virtue of the id's impulses (Burger, 51). The ego acts as a mediator

between the id and the superego (Braun, 3). It is the ego's job to satisfy the impulses of the id, but in a way that fits reality into the particular situation. Since the impulses are rarely realistically satisfied, it is the ego's job to keep them beneath the individual's awareness (Burger, 50).

It can be said that Jekyll's experiment with the potion is his way of trying to "reify" his superego and id into separate parts (Hendershot, 36). Nevertheless, Jekyll's "experiment fails because the novella, like Freud's "The Ego and Id", demonstrates the interpenetration between id and superego"(Hendershot, 36). It is Hyde as the symbol of id, "This familiar that I called out of my own soul, and sent forth alone to do his good pleasure, was a being inherently malign and villainous; his every act and thought centered on self; drinking pleasure with bestial avidity from any degree of torture to another; relentless like a man of stone" (134) that so stretches to the extreme that Jekyll's ego can not rectify the damage caused by such imbalance in his spirit. His experiment disassembles the ego, imparting a multifaceted view of personality.

The ego is how the id and the superego communicate in order to function properly. Freud describes the ego as "a bodily ego; it is not merely a surface entity, but is itself, the projection of a surface" (Freud, 26). Jekyll's consumption of the draught destroys the ego entirely because it literally transforms his body into a different form and fails to distinctly separate the id from the ego (Hendershot, 36). Jekyll speaks about the ego's instability, "I began to perceive more deeply than it has ever yet been stated the trembling immateriality, the mist-like transience, of this seemingly so solid body in which we walk attired" (Stevenson, 55). In his statement, Jekyll never refers to himself as Hyde. Jekyll says, "He [Hyde], I say--I cannot say, I" (73) Jekyll is unable to say "I" when referring to Hyde because the ego has been eliminated and by default so has the ego's function as a mediator (Hendershot, 36). If there is no ego, there is no separation. Thus, the experiment fractures Jekyll's spirit but does not seem to split the id and the superego.

This is also the case in Freud's "Ego and the Id" in which the id and the superego display the same characteristics. Freud says, "the normal man is not only far more immoral than he believes but also far more moral than he knows,"(Freud, 52) implying that the unconscious id owns a sense of morality, and thereby is not truly separate from the superego. Various examples from the text illustrate how Jekyll's id does not escape his superego. For example, though Hyde tramples the young girl (an action consistent with Freud's assertion that the id has a sadistic death drive aimed at random external objects) (Freud, 41-45)), his reaction to the public's condemnation of his violent behavior is characteristic of an upright, moralistic Victorian gentleman. Hyde states, "No gentleman but wishes to avoid a scene...name your figure" (Stevenson, 10). Hyde pays off the girl's family politely, demonstrating the id's ability to understand the laws of the superego (Hendershot, 37). Also, when Hyde appears before Lanyon, he demonstrates a respect for social institutions as a sincere scientist, and goes so far as to condemn Lanyon: "you who have denied the virtue of transcendental medicine, who have decried your superiors...!"(58). Jekyll also speaks of the interconnectedness between the id and

the superego. He states that he "projected and shared in the pleasures and adventure of Hyde"(68).

Clearly, Jekyll as superego obtains some pleasure as well from the so-called evil side from which he superficially claims to want to separate himself. At one point, Dr. Jekyll reluctantly commits to living in the transparent shell of his superego, the life of the "elderly and discontented doctor" (Stevenson, 63). Still, he does so with a sort of sadness because he is aware that he is giving up the id's principles of liberty and vital instinct (Guerard, 8). Jekyll speaks of his commitment to his superego, "…I… bade a resolute farewell to the liberty, the comparative youth the light step, leaping impulses and secret pleasures, that I had enjoyed in the disguise of Hyde. I made this choice perhaps with some unconscious reservation" (Stevenson, 63). This quote from the text demonstrates how "Jekyll as superego is the mask of respectability that seeks to 'undo the evil done by Hyde' (Stevenson, 66) while deriving pleasure from that evil" (Hendershot, 38). Thus, the study of Freud's psychological concept of the id, ego, and superego lends itself to the understanding of the literary text as stated previously in the introduction as not two people that dwell inside one man, but one man with two impulses roaring to be heard inside of *him*. "My devil had been long caged," Jekyll states, "he came out roaring" (Stevenson, 90). It is this statement that implies that Jekyll did his best to pacify his id, but when his superego failed in this repression, he could not escape himself.

Freud's Theory of Repression as Applied to Stevenson's Text

> [Repression is] the cornerstone on which the whole structure of psychoanalysis rests.
>
> Freud, *"Repression."*

Freud's theory of repression lifts the curtain on the possible motivations behind Jekyll's experimentation with the draught. It is a defense mechanism used by the ego to keep threatening material away from the consciousness of an individual (Burger, 53). "One of the vicissitudes an instinctual impulse may undergo is to meet with resistances the aim of which is to make the impulse inoperative. Under certain conditions…the impulse then passes into the state of *repression*" (Freud, 87). Jekyll admits in his statement that he had long been haunted by inner impulses that pushed his sense of peace deep inside him into an untouchable and forgotten place:

> I concealed my pleasures; and that when I reached years of reflection, and began to look round me and take stock of my progress and position in the world, I stood already committed to a profound duplicity of life. Many a man would have even blazoned such irregularities as I was guilty of; but from the high views that I had set before me, I regarded and hid them with an almost morbid sense of shame (Stevenson, 54).

It is apparent from Jekyll's confession that he was possessed with certain inherent instincts that troubled him because their desire for satisfaction were in contradiction with his reputation as the respectable and controlled doctor about town. At the same time, it was his insatiable need to maintain such a high position in the eyes of society, "to carry his head high...before the public"(Stevenson, 54) that divided him. These are the needs that lead to the "profound duplicity" (Stevenson, 54) that torments Jekyll. Speaking of moralistic Victorian individuals like Jekyll, Freud said, "they would have been more healthy if it could have been possible for them to be less good" (Heath, 97). Repressing a multitude of commanding thoughts and inclinations can drain the ego of energy. This weakening of the ego causes the struggle to maintain a stable personality to end in defeat. (Burger, 53).

Freud maintained that satisfaction of instincts is always pleasurable to man in their initial fulfillment. Still, under irregular circumstances, a psychological process takes place which transforms the pleasure of satisfaction into "pain" (Freud, 88). It is Jekyll's consumption of the chemical tincture and its effects in aftermath that no doubt turns his seeking of pleasure into a great source of physical as well as spiritual anguish. "The most racking pangs succeeded: a grinding in the bones, deadly nausea, and a horror of the spirit that cannot be exceeded at the hour of birth or death" (Stevenson, 56). Jekyll uses the drug to fulfill his yearnings, but its side effects prove painfully sickening. Moreover, though this satisfaction of instincts is possible, it becomes "irreconcilable with other claims and purposes" (Freud, 88), thereby causing pleasure in one part of the mind and pain in the other. Jekyll claims to indulge his pleasures for the sake of tempering his inner cravings; yet he released the second entity of Hyde to preserve the veneer of his reputable reputation as Jekyll—a directly irreconcilable claim and purpose. He feels his mind sharply divided by separating his indulgence of Hyde from his intentions. Because he has let his darker side relish some liberty, Jekyll is more resolute in the maintenance of his respectability. He severely divides himself this way, because the more room he makes for his vile energy to be released, the harder that energy turns him away from his intention to also dwell in the approval of community and society:

> ...therefore the stronger *that* impulse becomes until he digs a
> trench for himself and has to live two lives, each of which
> fights for dominance in him. The drug Jekyll discovers is thus
> only an alleviation of a situation which he himself has created
> through numbers of voluntary acts: it allows him to put into
> concrete form the duality he has begotten in himself, and in so
> doing remove the pain (Manlove, 96).

Additionally, those in the state of repression find themselves in pursuit of avoiding that pain; it becomes a pursuit that gains more strength than gratifying their pleasure (Freud, 88). Once Jekyll finds his spirit terrified at the implications and consequences of his transformation, he discovers he can no longer own Hyde only as a personal instrument of gratification, but he must bow to the pain and give Hyde

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more power than originally intended. "This incoherency of my life was daily growing more unwelcome. It was on this side that my new power tempted me until I fell into slavery. I had but to drink the cup…and to assume like a thick cloak, that of Edward Hyde" (Stevenson, 59). This "thick cloak" is equivalent to the "guise of an affect of a particular qualitative tone" (Freud, 93) that appears as the altered form of the initial instinct:

> It ramifies like a fungus, so to speak, in the dark and takes on extreme forms of expression, which when translated and revealed to the neurotic are bound not merely to seem alien to him, but to terrify him by the way in which they reflect an extraordinary and dangerous strength of instinct. This illusory strength of instinct is the result of an uninhibited development of it in fantasy and the damming-up consequent on lack of real satisfaction (Freud, 90).

Ultimately, repression does not hold. Though it seems at first successful, the fear of being found out by one's community, along with personal self-reproaches leads to its failure as a state of equilibrium in the personality. The repressed individual is troubled by the ambivalent nature from and into which his instinct is subdued, and though repression produces a cyclical coping effect for a time, it becomes a barren and never-ending struggle for sanity (Freud, 97). In many cases including that of Henry Jekyll, "the belated tragic life drive and violent escape from repression is often suicide" (Guerard, 10). Stevenson himself offers no positive escape from the repressive nature of the Victorian society that he indirectly criticizes in the novel; "the socio-psychological conflict is articulated but left unresolved" (Roberts, 42). Though Stevenson does seem to leave Jekyll's conflict with repression unresolved, the questions that surround the text and its plot overlap to form a complex mosaic of psychological issues that often find their answers through the curiosity initiated by the questions.

Gordon Allport's Idiographic Approach to Personality via Stevenson's Description of Setting

> For the buildings are so packed together about that court, that it's hard to say where one ends and another begins.
>
> Stevenson, *Dr. Jekyll and Mr. Hyde*

In concluding the psychological analysis of the text, the question persists for both the erudite reader of the novel and the dilettante of Jekyll/Hyde as to the precise nature of the two names in the title. Are they two? Are they one? Is it two beings coming out of one or is it one coming out of two? The student of personality

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in psychology finds this relation relevant to the study of what psychologist Gordon Allport called the idiographic approach to the trait theory of personality. The idiographic approach concerns itself with "identifying the unique combination of traits that best accounts for the personality of a single individual"(Burger, 185).

Allport maintains that there are *central* traits: the main few traits that form a composite of a person's personality. *Secondary* traits are also incorporated into the personality, but to a much lesser extent. (Burger, 185). According to Allport, a *cardinal* trait is a possession of only a rare number of individuals, persons whose behaviors are so dominated by a single trait that their identities become synonymous with the trait. (Burger, 186). This is important in understanding the concept that a man is not one way or the other, but his character is an overlapping of traits that incorporate themselves into the person's identity, forming a whole person. The lines of the various traits can be blurred, and it may be difficult to see *where one ends and another begins.*

Stevenson seemed to understand and explain this idiographic approach to trait theory quite some time before Allport, and its understanding is best conveyed when examining the pains Stevenson took to describe the immediate surroundings in which Jekyll and Hyde dwelled. "The relations of the two are typified by Jekyll's house, which is half Jekyll and half Hyde" (Nabokov, 12). Although it is so often applied to the generic rendition of Dr. Henry Jekyll in popular culture, he does not possess the cardinal trait of genuine goodness. His persona as Jekyll combines a tendency to want to do good and another leaning toward bad intentions, "for when he is Hyde, he is simple, but when he is Jekyll he is, as he tells us, a mixture of the two" (Manlove, 98). Interestingly, just as Jekyll himself is a mixture of sorts, his home is also. It is a symbol of the Jekyll/Hyde relationship. The characteristics of his home could represent parallel traits found in his personality:

> The street shone out in contrast to its dingy neighborhood, like a fire in a forest; and with its freshly painted shutters, well-polished brasses, and general cleanliness and gaiety of note, instantly caught and pleased the eye of the passenger...Two doors from one corner, on the left hand going east the line was broken by the entry of a court; and just at that point a certain sinister block of building thrust forward its gable on the street. It was two storeys high; showed no window, nothing but a door on the lower storey and a blind forehead of discoloured wall on the upper; and bore in every feature, the marks of prolonged and sordid negligence. The door, which was equipped with neither bell nor knocker, was blistered and distained (Stevenson, 2).

So, while the street on which Henry Jekyll's house rests has a pleasant calm about it that is engaging to the general public, the building is "thrust forward" with no windows to demonstrate life within and a downtrodden door with no bell or knocker to use in order to gain entry. Similarly, Jekyll's outward appearance as the sensible and professional doctor is as "well-polished" as the brasses of the street, but

the "sinister block of building" in which Jekyll gives refuge to Hyde is the personification of Hyde, "a blind forehead" marked by features that convey his long neglect and active oppression in the life of Jekyll. If Jekyll is the symbolic representation of the streets and Hyde is a metaphor for the house, "The streets of shops look outward to a public…[the house's] preoccupation is with exclusion" (Manlove, 90). Hyde is also "thrust forward" as the line (of Jekyll's respectability) is broken when the doctor attempts to give Hyde a taste of freedom by consuming the concocted potion.

The street and the home form a whole persona… "the one by the extremity of its cheer and vitality, seeming almost to beget the other—variety spawning uniformity, care neglect, light darkness" (Manlove, 90). The door to the house (or the way to reach Hyde) is non-existent; there is no way in—only a way out. "The man who began by letting Hyde out ends by having to let him in" (Manlove, 96). The home (Hyde) can not gracefully become part of the street (Jekyll); Hyde must be let out in a "certain sinister block", in a hideous manner, "I sought…to smother down…the crowd of hideous images…and still…the ugly face of my iniquity stared into my soul" (Stevenson, 64). Accordingly, Stevenson's brilliant literary description of the setting speaks allegorically of his main characters psychological makeup; he uses a technique parallel, if not more skillful, in illumination to Allport's approach.

Allport's idiographic approach provides for a more enlightened landscape of personality. Instead of obtaining finite portraits of individuals based on peripheral observations of surface traits, a precise journey into the inner characteristics of individuals can reveal complex psychological tendencies (Burger, 186). Similarly, an examination of Stevenson's 'theoretical trait' text reveals that the distinction between the street and the building it holds is blurred, and the line between the two merge just as the distinction between Jekyll and Hyde fuses into the "whole landscape of the story, with its city streets, darkness and fog, [which] can be seen as images of a journey into the interior: certainly the narrative moves progressively inward from the streets into the buildings" (Manlove, 94).

PART II :

PSYCHOLOGICAL DISORDERS EVIDENT IN STEVENSON'S TEXT

The Significance of Multiple Personality Disorder in

Dr. Jekyll and Mr. Hyde

If a man splits, he splits along the grain. When the grain is gnarled and knotty, the split is not a smooth one, that is, it does not follow easily predictable lines.

Rogers, *A Psychoanalytic Study of the Double in Literature*

Split personality is the psychotic disorder most exclusively fitted to the theme of *Dr. Jekyll and Mr. Hyde.* The average reader, as well as the historical and cultural experts, seem to emphatically agree that, "Mr. Stevenson's idea [in the story]…is that of the double personality in every man" (Lang, 55). The disorder is a vital part in the discussion of the psychology of Stevenson's text. There should be careful examination of the matter, for a cavalier attitude toward the subject may exist because it is not extraordinary to know of people who seem to possess separate personalities. Who among us have not expressed a cultivated temperament on one occasion, while conveying an untamed disposition on another? Still, the seriousness of the disorder as a disease should not be overlooked, for its repercussions could prove just as devastating to modern society as it was to Henry Jekyll's society. "We must approach the whole subject of split or duplicated personalities with no prepossession against the possibility of any given arrangement or division of the total mass of consciousness which exists within us" (Myers 204).

Multiple personality disorder (MPD) is officially defined as the existence of two or more distinct personalities existing within a person, "the first being restrained and dull" (Brennan, 1), the second being "impulsive and uninhibited" (Brennan, 1). There is clearly a similar division of personalities within Jekyll and Hyde respectively. Personality can be defined as a predictable pattern of thinking, feeling, and behaving across various situations. MPD eliminates that predictability. Sufferers of MPD own alternate personalities who have different behaviors, physical qualities, and ways of relating to others (Arbetter, 18). Accordingly, Hyde differs considerably from Jekyll. Along with the obvious dissimilarity in the actions of the doctor and his so-called assistant, Jekyll's alter differs in appearance from the original man as well, "so much smaller, slighter and younger than Henry Jekyll (Stevenson, 57)…Mr. Hyde was pale and dwarfish, he gave an impression of deformity without any nameable malformation, he had a displeasing smile"(Stevenson, 12). When Hyde was found in Jekyll's clothes, they were much too big for the man, a symbolic expression that Hyde was an entity not separate from Jekyll, but simply smaller in size, a dwarfish personality always taking refuge in the cave of Henry Jekyll's larger external self, "Hyde was indifferent to Jekyll, or but remembered him as the mountain bandit remembers the cavern in which he conceals himself from pursuit" (Stevenson, 62).

Scientists have known about the reality of this disorder for hundreds of years. Still, they refused to see it any other way but as a rare and isolated happening. Seen only as the result of the mind escaping to cope with the trauma of childhood abuse, Sigmund Freud openly dismissed it in many of his diagnoses because he refused to accept that such a great number of his patients were abused as children (Arbetter, 18). Because of this limited view of the disorder, it proves uniquely insightful to assess this interpretation of the story as a case of MPD (with only a slight glance at the Victorian view and to consider it in the majority via references from the contemporary perspective).

Modern times have found the courtrooms full of defendants claiming that although their fingers pulled triggers, their feet ran from crime scenes, and their actions broke the law—someone else planned their crimes and controlled their minds at the time. That "someone else" often turns out to be an alternative personality

living inside the perpetrator. Comparatively, it is not until the end of Stevenson's novel that the reader is made acutely aware of the fact that the man responsible for such crimes as the violent assault on the young girl and the vicious murder of Sir Danvers Carew is not someone else outside of Henry Jekyll, but Jekyll himself. Jekyll made a conscious effort to distinguish himself from Hyde, "it was Hyde, after all, and Hyde alone, that was guilty" (Stevenson, 60). Thus, it can be concluded that Hyde is an alternative personality of the doctor, his alter ego, so to speak.

In today's world there are most definitely thousands of people incarcerated for violent crimes committed by one of their alternate personalities, or "alters". It is impossible to punish one personality without punishing the others. One such sufferer of MPD found himself on trial for the serial killings of 53 people. He was a respected school teacher, loving husband, and devoted father, "but when I found myself in a different setting, I became a different person, uncontrollable, as if some evil force controlled me against my will and I could not resist" (Arbetter, 17). This real-to-life internal confession mirrors the dual complexity found in Henry Jekyll. He struggles to maintain the appearance of a dull livelihood, shut-away in his laboratory, while under peculiar circumstances the world finds him out and about in the streets, speaking and acting outrageously—one could say almost in evil--under the guise of Edward Hyde, "about three o'clock of a black winter morning...the man trampled...over the child's body and left her screaming on the ground... it was hellish to see. It wasn't like a man; it was like some damned Juggernaut" (Stevenson, 3). In unique settings, the man respected as Jekyll loses control and becomes Hyde, an undeniable evil force. Jekyll's plight is similar to many of those with MPD who lose control and end up paying the price in imprisonment of some sort. This subject is discussed in detail in Behnke and Saks' *Jekyll on Trial: Multiple Personality Disorder and Criminal Law.*

Multiple personality disorder belongs to a group of psychiatric disorders called dissociation (Arbetter, 18). Many of us have experienced simple experiences of dissociation, which is a fracture in memory, a breach in consciousness, or split in our normal sense of identity. Many of us have acted out of character, lost consciousness, or lost a sense of reality, but we have done so in isolated incidents. Jekyll curiously questions this common strife, "it was the curse of mankind that these incongruous faggots were thus bound together—that in the agonized womb of consciousness, these polar twins should be continuously struggling. How, then, were they dissociated?" (Stevenson, 53). Victims of MPD dissociate by losing extensive pieces of their lives (Arbetter, 18).

The splitting of identity and the formation of other personalities allow the person to blank out dreadful experiences such as childhood abuse. Modern research has found that in the majority of cases these dreadful experiences are of chronic childhood physical or sexual abuse (Arbetter, 18). Victorian psychologist Frederic W. H. Myers also attested to the significance of childhood trauma, "...it may be well that we must look even further back than our own childhood for the origin of many haunting troubles"(Myers, 41). To cope with the trauma of the experience, children relinquish the memory to another personality, burying its awareness (Arbetter, 18). In his statement, Jekyll attempts to separate his awareness of his other self by

referring to Hyde in third person, "he sat all day...he dined...he set forth...He...I cannot say, I" (Stevenson, 67).

There is no explicit mention of childhood trauma experienced by Jekyll in Stevenson's text, but rather there is a muted, mysterious reference to his father. The conscious reader must extrapolate its significance in order to understand the importance and relevance of it to Jekyll's personality formation. As an adult, Jekyll remembers his first recognition of a strangeness inside of him followed immediately after a reference to a memory of time spent with his father, "I saw my life as a whole: I followed it up from the days of childhood, when I had walked with my father's hand...to arrive again and again, with the same sense of unreality, at the damned horrors of the evening" (Stevenson, 64). When describing Jekyll's relationship to Hyde, Stevenson presents a discerning reference to the father-son relationship, perhaps related to Jekyll's own relationship with his father, "Jekyll had more than a father's interest; Hyde had more than a son's indifference." (Stevenson, 62). Curiously, the reader of Jekyll's statement finds that he has destroyed the portrait of his father when in the final stages of his rampage as Hyde. This seems to correspond to a "patricide motif" (Rogers, 94) connected to the inexplicable murder of Carew, "an aged and beautiful gentleman with white hair" (Stevenson, 18). And finally, the last hint of early childhood abuse in Jekyll's young life comes from *Dr. Jekyll and Mr. Hyde*'s quintessential modern counterpart, *Mary Reilly*. A woman abused as a child by her father, Mary is a maid in Jekyll's household. She ponders on her strange feelings of connection with her master: "we are both souls who knew this sadness and darkness inside and we have both of us learned to wait" (Martin, 36).

According to modern research findings, traumatic experiences can change the functioning of chemicals in the brain that influence thoughts and feelings— neurotransmitters. Understanding how this happens may make it possible to lessen the pain felt by victims of ongoing trauma and reroute its devastating effects (Arbetter, 18). Along these same lines, whatever childhood trouble it is that haunts Jekyll's soul, it is possible that the trauma itself not only changed the functioning of his neurotransmitters, but that this transformation is further compounded by the fact that Jekyll repeatedly ingests the chemical substance. The effects of the draught could correlate with the major malfunction in Jekyll's personality brought on by whatever traumatic experience that made him inclined to so often lose touch with normalcy, "the drug had no discriminating action; it was neither diabolical nor divine; it but shook the doors of the prisonhouse of my disposition"(Stevenson, 58).

Classified by the American Psychiatric Association as a disorder in 1980, there may be 24,000 people with MPD in the United States alone. Experts from Harvard Medical School say a person can have from two to two hundred personalities (Arbetter, 18). They may know about each other, but according to one source, "what gets left out of summaries of case histories of multiple personality, inevitably, is the almost uncanny quality of seeming autonomy which the alternating personalities possess" (Rogers, 92). Correspondingly, Hyde's life seems far removed from Jekyll's. Jekyll creates for Hyde his own identity. Hyde has his own position in employment and society, his own claims in Jekyll's will, his own room in Soho, his own clothes and his own key to the door of the laboratory. Furthermore, the alternate personalities may be amiable or hostile to each other (Arbetter, 19). Referring to the

text, Jekyll seems to despise and adore Hyde all at once, "[Hyde's] love of life is wonderful; I go further; I, who sicken and freeze at the mere thought of him" (Stevenson, 69). The personalities may try to protect each other, or may push each other to suicide or homicide (Arbetter, 19). Along these lines, Jekyll harbors hateful impulses deep inside of him, feelings he can not dare release as the respected doctor, feelings that are finally released through the alter called Hyde. Jekyll relishes his ability to save himself from capture, to protect his personality from blame after pushing Hyde to commit fiendish acts ending ultimately in homicidal action with the murder of Carew:

> Men have before hired bravos to transact their crimes, while their own person and reputation sat under shelter. I was the first that ever did so for his pleasures. I was the first that could plod in the public eye with a load of genial respectability, and in a moment, like a schoolboy, strip off these lendings and spring headlong into the sea of liberty. But for me, in my impenetrable mantle, the safety was complete. Think of it--I did not even exist! (Stevenson, 59).

Though Jekyll celebrates the duality of his life with cheer, the doom of the end is inevitable. Two-thirds of MPD sufferers attempt suicide as did Henry Jekyll. When the demands of family and career get in the way of these memory lapses, the MPD sufferer must seek help or he will self-destruct (Arbetter, 19). When it is clear to Jekyll that he can no longer escape the identity of Hyde, that his dual life is no longer under his control, and the demands of sustaining his reputation and associations are becoming too much of a burden, he begins to bow to his inevitable self-destruction:

> The powers of Hyde seemed to have grown...[but] I know how he fears my power to cut him off by suicide...This, then, is the last time...that [I] can...see [my] own face...Hyde will tear it to pieces...the doom that is closing on us both has already changed and crushed him...when I shall again and forever reindue that hated personality...Will Hyde die upon the scaffold?...I am careless; this is my true hour of death...Here then... I bring the life of that unhappy Henry Jekyll to an end (Stevenson, 68-70).

Thus, finally, Jekyll does end his own life, knowing that to destroy Hyde, he must also destroy himself.

Of the various types of MPD, *enmeshed* MPD patients have "dissociated" lifestyles. Like, Hyde, these patients linger in unfit surroundings, experience rough relationships and aggressively participate in self-destructive and anti-social (sadistic) behaviors (Brennan, 2). Hyde's dissociated doings were exposed as "tales came out of the man's cruelty, at once so callous and violent; of his vile life, of his strange associates, of the hatred that seemed to have surrounded his career"(Stevenson, 28).

Hyde was seen coming home at 3 am on the night of the young girl's trampling "from some place at the end of the world" (Stevenson, 3), perhaps returning from a night of lewdness in his room in "the dismal quarter of Soho...with its muddy ways"(Stevenson, 20). Hyde was also the attacker in two assaults of apparently helpless victims, one being a young girl, another an elderly man. The reader can assume that Hyde enjoyed inflicting pain on others; his dissociated lifestyle involved sadistic tendencies that Jekyll could not *as himself* indulge in. "What Stevenson desired to convey in the person of Hyde was the presence of evil wholly divorced from good. Of all wrongs in the world Stevenson most hated cruelty, and the inhuman brute...in his savage indifference"(Nabokov, 25). In accordance with the self-destructive and/or antisocial behaviors such as substance abuse or reclusiveness common to enmeshed MPD patients, (Brennan, 2) Jekyll not only shut himself in his room for months, but he also abused a substance that no doubt contributed to his self-destruction, the discussion of which will follow in later sections.

Whatever the causes and symptoms, Stevenson diagnosed this multiple personality disorder in his literary case study long before any trained psychologist, seeing it as an inevitable state of man: "I hazard the guess that man will be ultimately known for a mere polity of multifarious, incongruous and independent denizens"(Stevenson, 55). Stevenson predicted this tumultuous state of man quite accurately; thousands of files in mental health care facilities today describe case studies complete with these incongruent and autonomous personalities and personality disorders.

The Significance of Anti-Social and Borderline Personality

Disorders as Applied to the Text

The irony of Jekyll's situation is that his normal public self is seen as shut away...while for all his name, and fundamentally anti-social self, Hyde inhabits the streets and acts and speaks.

Manlove, *"Closer than an Eye":The Interconnection of Stevenson's Dr. Jekyll and Mr. Hyde.*

Other personality disorders that can be extrapolated from interpretations of Jekyll and Hyde include antisocial and borderline personality disorders. Antisocial personality disorder is a "pattern of disregard for, and violation of, the rights of other people (Braun, 3). This antisocial behavior is exemplified in the text as Hyde carelessly tramples the young girl, "[Hyde] trampled calmly over the child's body and left her screaming on the ground" (Stevenson, 40); as he sadistically murders Sir Danvers Carew, "with ape-like fury, he was trampling his victim under foot and hailing down a storm of blows, under which the bones were audibly shattered and the body dumped upon the roadway" (Stevenson, 60); and as he selfishly manipulates his old friend Lanyon by warning him of the consequences of choosing to follow his own sense of right and wrong instead of Jekyll/Hyde's orders, "you might have charged your conscience with my death" (Stevenson, 95).

Furthermore, by examining his pattern of instability in persona relationships, self-image, and impulsivity (Braun, 3), Dr. Jekyll could have very wel suffered from borderline personality disorder. Firstly, Lanyon's falling out wit Jekyll can illustrate his instability in personal relationships. Lanyon confirms tha though he once shared a bond with the doctor, "…Jekyll became too fanciful for me He began to go wrong, wrong in mind…I see and have seen…little of th man"(Stevenson, 8). Jekyll's on and off again close association with Utterson is als an example of his unstable relationships. Secondly, an instability in self-image i symbolized by Jekyll's relationship with the mirror. Jekyll "seeks out the mirror a an affirmation of his identity, but it affirms not stability but instability" (Hendersho 36). Jekyll rushes to the mirror to reassure himself that he had once again bee transformed back into Hyde. He states, "I rushed to the mirror. At the sight that me my eyes, my blood was changed into something exquisitely thin and icy. Yes, I ha gone to bed Henry Jekyll and I had awakened Edward Hyde"(Stevenson, 61). Thus the mirror symbolizes Jekyll's unstable self-image. Finally, Hyde's outrigh inhibitions are part of the pattern, demonstrating an unhinged impulsivenes characteristic of a man suffering from borderline personality disorder. Personalit disorders such those discussed above very well serve as the gateway to a number o various ailments and demonstrate Jekyll's predisposition to self-destruction.

The Psychology of Addiction as Applied to the Text

There is a sense in which Hyde, for all his monstrosity, is but an addiction like alcohol, nicotine, drugs.

Oates, *Jekyll/Hyd*

With recognition of Jekyll's predisposition to self-destruction illustrated b examples attesting to foregoing personality disorders, the story can also be examine in the light of the psychology of addiction. Dr. Henry Jekyll is a "man victimized b a chemical dependency that is aggravated both by a pre-existing psychopatholog and maladaptive behaviors which follow his repeated consumption of th undisclosed psychoactive substance that turns him into Edward Hyde" (Wright, 254) Jekyll's immediate reactions to his self-created, self-altering potion are very simila to the reactions attributed to the drug, lysergic acid diethylamide, or LSD (Guerard 9) including a preliminary queasiness followed by a feeling of being "younger lighter, happier in body" (Stevenson, 56). Jekyll continues to describe the "current o disordered sensual images running like a mill race in [his] fancy"(Stevenson, 56) which corresponds to the disorientation felt by users of LSD and a variety of othe hallucinogenic drugs (Levinthal, 178). The addictions running rampant i Stevenson's day, however, seemed to be obsessions with opium, cocaine or alcoho (Levinthal, 8). Whatever the drug of choice, it is clear in Jekyll's statement that h was accustomed to a "profound duplicity" of the mind and in desperate search for way to adapt his impulses to hidden behaviors. This division of personality i characteristic of an addict attempting to excuse his addiction and blame it on hi "darker side" in order to deny himself as one who is addicted.

An addict who cannot confront his illness often believes his disability is a moral issue and not a physiological one. This belief is illustrated as Jekyll confesses, "neither had I, long as I had considered my position, made enough allowance for the complete moral insensibility and readiness to evil which were the leading characters of Edward Hyde" (Stevenson, 63). Though not a popular notion, morality in addiction is common also to the modern day 12-Step recovery program for alcohol addiction, Alcoholics Anonymous: "The religious nature of Alcoholics Anonymous and the 12-Step program it initiated is not always noted"(Steffen, 728). The "moral insensibility and readiness to evil" described by Jekyll is often termed by modern day "clinicians who use the 12-step model…to induce motivation in people referred to their programs by challenging them to overcome denial of their addiction and to heed a higher spiritual power"(Bower, 297). Thus, morality plays a key role in both the Victorian and modern-day psychology of addiction.

To admit one is addicted would be to acknowledge a dependency, something addicts constantly deny. This denial of addiction is illustrated through Jekyll's statement to Utterson regarding Hyde (the symbol of Jekyll's addiction), "to put your good heart at rest, I will tell you one thing: the moment I choose, I can be rid of Mr. Hyde" (Stevenson, 16). Unaware of the pathology of addiction, the addict wrongly assumes that he can control the use and effects of the intoxicating substance he consumes. Jekyll's statement to Utterson is a sign of his denial. This illusion of self-control allows the addict to reject the addiction as a fundamental part of his being. Jekyll admits, "I smiled to myself, and, in my psychological way, began lazily to inquire into the elements of this illusion, occasionally, even as I did so, dropping back into a…doze" (Stevenson, 60). Though he may be a prisoner to his addiction, the addict separates it from himself (Wright, 254) as does Jekyll, "It was Hyde, after all, and Hyde alone, that was guilty" (Stevenson, 60).

It is often when the addict is in the depths of despair that he can finally recognize the severity of his weakness for his drug, "I fell in slavery. I had but to drink the cup" (Stevenson, 58). When Jekyll is in his final moments of existence, he assesses his condition with a small degree of truth. At the same time, while he awaits either suicide or execution by the authorities, Jekyll still maintains a unrelenting appreciation for his darker self, "his love of life is wonderful; I go further…I find it in my heart to pity him"(Stevenson, 69). Even as he approaches certain destruction, Jekyll still refuses to abandon and take responsibility for Hyde, a sign of the immensity of his dependence. Although it seems that Jekyll is at first renouncing Hyde, "a resolute farewell to the…leaping impulses and secret pleasures that I have enjoyed in the disguise of Hyde," an inconsistent fact is disclosed as he admits that he not given up Hyde's house in Soho, nor has he destroyed Hyde's clothes. Jekyll indicates an "unconscious reservation" (Stevenson, 63) for this lapse in resolution. This lapse in complete finality of the former addiction is the result of purposeful thought processes that addicts use to protect themselves from reality and maintain the maladaptive patterns of thinking which enable the continuation of their addiction (Carnes, 19). Jekyll echoes this fact as he reasons, "I do not suppose that, when a drunkard reasons with himself upon his vice, he is once out of five hundred times

affected by the dangers that he runs through his brutish, physical insensibility (Stevenson, 57).

A distorted value system is another characteristic of the modern psychology of addiction apparent in Stevenson's text (Wright, 257). Though Jekyll considers Hyde "the evil side of [his] nature" (Stevenson, 57) and a "child of Hell" (Stevenson, 67), he still maintains an affection and pity for Hyde. These distorted values reveal that Jekyll cannot resist the state of intoxication that the drug produces. "I began to be tortured with throes and longings, as of Hyde struggling for freedom; and at last in an hour of moral weakness, I once again compounded and swallowed the transforming draught" (Stevenson, 63). It is not the drug itself, but the reaction to the intoxicant that drives the addict (Wright, 257). Jekyll is not captivated by the drug that turns him into Hyde; he is charmed by the persona that is Hyde. Hyde is symbolically the creature of desire that the sober Jekyll strives to be. After his transformation into Hyde (his state of intoxication), Jekyll states: "I knew myself...to be tenfold more wicked...and the thought...braced and delighted me like wine" (126). Incidentally, this allusion to wine strengthens the assessment of Jekyll's addiction since it is known that alcoholism was one of the primary Victorian addictions (Levinthal, 8).

The modern psychotherapy of cyclical activity in addictive behaviorseasily lends itself to the nineteenth century story of *Dr. Jekyll and Mr. Hyde* (Wright, 257). This psychotherapeutic investigation into Jekyll's consumption of the potion provides answers that explain the behavioral chaos let loose by it. The addict pursues the state of intoxication within a four-step cycle—preoccupation, ritualization, compulsive behavior, and despair (Carnes, 9).

The first step of the cycle, preoccupation, is demonstrated as Jekyll sends Poole, the butler, on frantic searches "flying to all the wholesale chemists in town" (Stevenson, 37) for his insidious powder, oblivious to all other demands and responsibilities. Also, Jekyll commands his colleague Lanyon to ask no questions and to do as he bids, "I want you to postpone all other engagements...the door of my cabinet is to be forced...breaking the lock if it be shut; and to draw out, with all its contents as they stand...some powders..." (Stevenson, 46-47). Preoccupied with his one obsession, Jekyll isolates himself from all tasks and relations except for those that minister to his pursuit for the drug.

The stage of preoccupation also finds the addict discounting the severity or even the existence of a problem (Wright, 260). Jekyll assures Utterson that "indeed [the situation] isn't what you fancy; it is not as bad as that"(Stevenson, 16). Another characteristic of addictive behavior in this stage is the addict's manipulation of others, using them to enable his disease (Wright, 260). Jekyll does this with Poole, the housekeeper of Hyde's residence in Soho, and even uses his old friend Utterson's "approved tolerance for others" (Stevenson, 1) to his advantage by convincing Utterson to assist him and to do so clandestinely. Still, the most outstanding abuse of another's good will is Jekyll's coercion of Lanyon. Jekyll takes advantage of Lanyon's emotional sentiments before asking him to obtain drugs for him:

Dear Lanyon,--You are one of my oldest friends; and although we may have differed at times on scientific questions, I cannot remember, at least on my side, any break in our affection. There was never a day when, if you had said to me, `Jekyll, my life, my honour, my reason, depend upon you,' I would not have sacrificed my left hand to help you. Lanyon my life, my honour, my reason, are all at your mercy; if you fail me to-night, I am lost (Stevenson, 46).

Jekyll goes on in his vain appeal to insist that Lanyon's assistance can produce nothing but a positive outcome, "[my] troubles will roll away like a story that is told"(Stevenson, 47). Jekyll's poignant appeal to Lanyon is very characteristic of a sufferer of addiction (Wright, 261); he manipulates others' loyalties and senses of obligation in order to progress carelessly into his downward spiral. The addict knows no boundaries of fair friendship. In order to maintain his illusion of control he may even threaten and demand attention, using old friends' guilt and fear against them (Wright, 261). Jekyll warns of tragic consequences if his orders are unfulfilled: "by the neglect of one of them, fantastic as they must appear, you might have charged your conscience with my death or the shipwreck of my reason" (Stevenson, 47). This is the addict's reasoning and, just as Jekyll, the average addict has no qualms when forcing his flawed reasoning onto others.

The second feature of the addiction cycle, ritualization, is also seen in Jekyll's tendency to over-inflate his omnipotent fantasies as the creator of this miraculous chemical substance (Wright, 258). He uses florid diction to evoke a sense of awe in the presence of the draught as he prepares its consumption, "Will you be wise? will you be guided? will you suffer me to take this glass...?"(Stevenson, 51). As he begins to consume the drug, he continues to prod Lanyon, "you who have denied the virtue of transcendental medicine, you who have derided your superiors—behold!" (Stevenson, 52).

As Jekyll puts the glass to his lips and drinks (his invulnerable ritual), the third stage of the addictive cycle, compulsive behavior, is reached. In this stage, the addict "consumes his intoxicant and completes that which the preparatory episodes of preoccupation and ritualization have enabled" (Wright, 258). Lanyon reluctantly witnessed Jekyll's compulsive transition:

He put the glass to his lips and drank at one gulp. A cry followed; he reeled, staggered, clutched at the table and held on, staring with injected eyes, gasping with open mouth; and as I looked there came, I thought, a change--he seemed to swell—his face became suddenly black and the features seemed to melt and alter... (Stevenson, 52).

In the beginning stages of the addiction, particularly ritualization and compulsive behavior, the addict anxiously attempts to manage his life as if he has personal control of his appearance to the outside world, but "this unending struggle to manage two lives...takes its toll...The impaired mental processes result in faulty problem-solving in all areas of the addict's life" (Carnes, 26). These impaired mental

processes lead into the end of the addiction cycle, the end of the ritualized compulsive behavior, which is marked by despair. As the addict emerges from the intoxicated and intense routines of ritual and maladaptive behaviors, he is seemingly astonished by his actions (Wright, 258). Jekyll declares "my pleasures were (to say the least) undignified" (Stevenson, 58). The addict will experience unmitigated periods of severe regret, indignity, self-pity, and self-deprecation (Wright, 258) Jekyll models this behavior and confesses, "In the hands of Edward Hyde, [the actions] soon began to turn toward the monstrous. When I would come back from these excursions, I was often plunged into a kind of wonder at my vicarious depravity...Henry Jekyll stood at times aghast before the acts of Edward Hyde (Stevenson, 59-60).

In this state of sober realization, the average addict will earnestly pledge to abstain from further compulsive behavior in disgust at his intoxicated imprisonment to the pursuit of sordid desires (Wright, 258). "Utterson, I swear to God," cried the doctor, "I swear to God I will never set eyes on him again. I bind my honour to you that I am done with him in this world. It is all at an end...mark my words, he will never more be heard of" (Stevenson, 24). The addict focuses on a power greater than himself and acknowledges an ashamed awareness of his transgressions, beseeching for another chance, covered in embarrassment, ""I have had a lesson--O God Utterson, what a lesson I have had!" And he covered his face for a moment with his hands" (Stevenson, 25). The addict may feel he has learned his lesson and attempt to single-handedly end his addiction (Wright, 259). This resolve may see some temporary self-improvement as Jekyll relates:

> I resolved in my future conduct to redeem the past; and I can
> say with honesty that my resolve was fruitful of some good.
> You know yourself how earnestly, in the last months of the
> last year, I laboured to relieve suffering; you know that much
> was done for others, and that the days passed quietly, almost
> happily for myself (Stevenson, 65).

Nevertheless, the addict who attempts to *save himself by himself* finds the road to recovery is *short-lived*. Over time, as the addict continues to isolate himself from the interceptions of others rather than to "reverse...the alienation that is integral to the addiction [by] establish[ing] roots in a caring community," (Carnes, 19) he will usually fail in his supercilious attempts to conveniently cure himself. Jekyll walks the road to temporary relief unassisted by anyone, assuming that he has expelled Hyde from himself, dismissing him like an unwelcome visitor rather than the inherent symbol of an addiction. "Stevenson's description of Jekyll's reformation during his hiatus from self-abuse reads colloquially like a case study's post interventionist history" (Wright, 259):

> Now that that evil influence had been withdrawn, a new life
> began for Dr. Jekyll. He came out of his seclusion, renewed
> relations with his friends, became once more their familiar
> guest and entertainer... He was busy, he was much in the open
> air, he did good; his face seemed to open and brighten, as if

with an inward consciousness of service; and for more than two months, the doctor was at peace (Stevenson, 28).

The acknowledgment of lessons learned is often followed by thoughts of suicide, especially in situations where the addict might be forced to deal with public persecution, social humiliation, loss of reputation, job, family, or any other severe consequence of his actions while in the addicted state (Wright, 258). In Dr. Henry Jekyll's case, once it is made evident to Jekyll that he can not escape Hyde, he realizes that he cannot escape the consequences of Hyde's deeds, including the murder of Sir Danvers Carew. Previous declarations of abstinence are trodden down as the addict realizes the power his addiction holds over his life and finally acknowledges his uncontrollable dependency to the drug (Wright, 258). Jekyll describes this awareness of defeat: "...much the same inducements and alarms cast the die for any tempted and trembling sinner; and it fell out with me, as it falls with so vast a majority of my fellows, that I chose the better part and was found wanting in the strength to keep to it" (Stevenson, 62-63). Jekyll finds himself turning into Hyde spontaneously and he knows that to destroy Hyde, he must destroy himself. Jekyll confesses in his statement, "I had gone to bed Henry Jekyll, I had awakened Edward Hyde. How was this to be explained? I asked myself; and then, with another bound of terror--how was it to be remedied?"(Stevenson, 61). The despair inundates the addict as he enters the final stage of withdrawal; suicide-prone and sorrowful, the addict enters a silent world and cuts all ties to the living (Wright, 258):

> You must suffer me to go my own dark way. I have brought on myself a punishment and a danger that I cannot name. If I am the chief of sinners, I am the chief of sufferers also. I could not think that this earth contained a place for suffering and terrors so unmanning; and you can do but one thing, Utterson, to lighten this destiny, and that is to respect my silence (Stevenson, 30).

The addict will then often commit to ending his life (Wright, 258). This decision to end his life is also a commitment to end his suffering, therefore the addict may seem calmer than usual, relieved at the thought that his suffering may indeed come to an end. The addict enters a period of isolated solitude. Jekyll hid himself in his room, away from his society and friends, "I mean from henceforth to lead a life of extreme seclusion"(Stevenson, 30). Withdrawing more and more into himself and his thoughts of suicide, the addict loses all hints of vibrant spirit, causing those who may worry about him to give up their attempts at reaching him in hopelessness:

> The doctor, it appeared, now more than ever confined himself to the cabinet over the laboratory, where he would sometimes even sleep; he was out of spirits, he had grown very silent, he did not read; it seemed as if he had something on his mind. Utterson became so used to the unvarying character of these reports, that he fell off little by little in the frequency of his visits (Stevenson, 31).

As Jekyll sits peacefully at his window, he addresses his old friend below "I am very low, Utterson," replied the doctor drearily, "very low. It will not last long thank God." (Stevenson, 32). And it does not last long. Shortly after the incident a the window Utterson finds his old friend dying on the floor, a twisted unrecognizabl body convulsing in pain. At the instance of this pitiful display, the catastrophi consequences of a life tormented by addiction is evident to all:

> Right in the middle there lay the body of a man sorely contorted and still twitching... the cords of his face still moved with a semblance of life, but life was quite gone: and by the crushed phial in the hand and the strong smell of kernels that hung upon the air, Utterson knew that he was looking on the body of a self-destroyer (Stevenson, 42).

This concept of a self-destroyer is relevant to the discussion of addiction Though the addict may not consciously choose to commit suicide, a self-destruction takes place as the addict continuously barrels down into the abyss of his addiction Whether the addict directly ends his life through suicide, the unassisted addiction is self-inflicted death wish. The destructive behavior brought on by the addiction inevitably leads to the destruction of a productive life.

What makes someone susceptible to an addictive disorder? What was about Dr. Jekyll that made him such a likely candidate for addiction? Jekyll' personality disorder was characterized by "the addict's belief system"(Carnes, 5) which is fostered by a collection of disordered personal perceptions of the self. A addict will often think of himself as someone who is not capable of achievin "ordinary human happiness." The addict feels a compelling inner loss within himse and attempts to make up for that missing piece of himself by "indulging dark desire that seem to promise the happiness and self-satisfaction that he otherwise think himself denied"(Wright, 261). By Jekyll's own explanation, he lived "nine-tenths life of effort, virtue, and control" (Stevenson, 57). He felt overwhelmed an uncompensated by his "bonds of obligation"(Stevenson, 56) and "the self-denyin toils of...professional life"(Stevenson, 64). It is these inhibited feelings that compe Jekyll to break himself free from the bonds of his life and revel in the pleasures an careless happiness that he had so long sacrificed. Jekyll admits that he had searche long for a way to become other than he felt cursed to be. He found that way throug Hyde, the symbol of his addiction. Jekyll describes the psychological change brough on by the draught:

> There was something strange in my sensations, something indescribably new and, from its very novelty, incredibly sweet. I felt younger, lighter, happier in body; within I was conscious of a heady recklessness, a current of disordered sensual images running like a millrace in my fancy...an unknown but not an innocent freedom of the soul (Stevenson, 56).

The combination of risky distorted perceptions and self-abuse created i Jekyll a "pre-addictive personality disorder" (perhaps an antisocial or borderlin

personality disorder?) that provides the reader of the nineteenth century novel with a clear case study complete with contemporary clinical evidence of the psychology of addiction. This evidence allows a justifiable "diagnosis of chemical addiction in Henry Jekyll"(Wright, 261). The development of modern psychology allows the reader of the novel to see beyond its Victorian gothic terror into a "premiere revelation, intended or not, of the etiology of chronic chemical addiction, its character and effects"(Wright, 261).

CONCLUSION

The above presentation of clinical evidence and theories of various psychological entrapments exemplifies the present thesis proposing that Stevenson's text is more than literary gothic fiction, that it is, indeed, a literary case-study of true-to-life, even modern-day life, addictions and afflictions. "The idea behind the story is thus mirrored in its style: what appeared to be separated is shown to be more intimately joined than could ever have been supposed. Each isolated episode, event and figure, apparently so scattered, comes together in the final design" (Manlove, 101). To further illustrate this point, one can examine the ironic circumstances of Stevenson's own death. According to the witness of Fanny Stevenson, when returning from the basement of their home, Stevenson was afflicted with an abrupt pain to his head. He fell dying to the floor immediately after crying out, "What's the matter with me, what is this strangeness, has my face changed?" (Oates, 608). Thus were the final words of a man, the creator of a character who could have spoken the same words a hundred times from the moment *The Strange Case of Dr. Jekyll and Mr. Hyde* was conceived in dream, brought to reality in a way never forgotten.

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Structure and Anti-Structure in the French Revolution: Jacobinism and the Creation of "Communitas"

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ABSTRACT

The conceptual frameworks of historian Edward Muir and anthropologist Victor Turner, supplemented by René Girard and the ideas he developed in *Violence and the Sacred*, are employed to yield an understanding of the ritual nature of the French Revolution. This study interprets the Revolution in its symbolic forms – particularly within the Jacobin Republic -- as a shared rite of passage for the French nation. Emphasis is placed on the transitional (liminal) stage of this rite of passage from the Old Regime to the new French Republic. In *communitas*, a condition reached through liminality, rites of passage invest relationships with a sense of equality, brotherhood, and a rejection of the oppressive features of structured life. I intend to demonstrate that Jacobinism anticipated institutionalized *communitas* through the creation and extension of a liminal state. Also examined is the possibility that liminality, with its emphasis on utopia and *communitas*, also houses the potential for social tension and violence. The notion of Louis XVI as a sacrificial victim, the inherently purgative nature of the Reign of Terror, and the shift in the distribution of sacredness and sovereignty are considered as they relate to revolutionary nation-building. Within and between social structures, fundamental cultural elements undergo constant transformation in their outward appearance but remain analogous through underlying patterns, mechanisms, and needs. It is a concern of this study to observe the transcendence of cultural imperatives within the inimitable context of the French Revolution, and to investigate these inner absolutes as they were manipulated by revolutionary passions.

"The relevance of historical fact for sociological analysis," writes anthropologist Clifford Geertz, "rests on the perception that though both the structure and the expressions of social life change, the inner necessities that animate it do not."[6] Geertz's insight into the transcendence of cultural imperatives suggests the purpose of my research: to examine the French Revolution in its symbolic forms – particularly within the Jacobin Republic – as a rite of passage between "expressions of social life." I do not propose to simplistically link Revolutionary France to all transitional cultures or reduce it to a window for viewing universals; instead, I intend to bear in mind the complexities and idiosyncrasies of the Revolution as I examine the ritual characteristics that it does indeed share with other societies. An equal concern is to accomplish the converse: to observe the "inner necessities" of life within the inimitable context of the French Revolution, to investigate these cultural absolutes as they were manipulated by revolutionary passions.

History is a continuum of linear, profane time, but is simultaneously composed of cyclical, sacred phases. Underlying this continuum is a vacillation between stability and instability, order and transition, structure and anti-structure. Within and between social orders, fundamental cultural elements undergo constant

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[6] Clifford Geertz, "Centers, Kings, and Charisma: Reflections on the Symbolics of Power," in *Local Knowledge: Further Essays in Interpretive Anthropology* (New York: Basic Books, Inc., 1983), 142-3.

transformation in their outward appearance but remain analogous through underlying patterns, mechanisms, and needs. Society has a need for sacred authority, a need for unity, and a need for identity. These tenets were vividly confirmed during the Jacobin Republic through striking, often disturbing, but always distinctive means. The French Revolution, according to Michel Foucault, "functions as a complex articulated, describable group of transformations that left a number of positivities intact, fixed for a number of others rules that are still with us, and also established positivities that have recently disappeared or are still disappearing before our eyes." My study, aided as it is by anthropological frameworks, may not correspond with Foucault's resistance to discursive association; I am nevertheless influenced by his outlook on the Revolution and its legacy.

The exceptional circumstances of the Revolution have stimulated brilliant intellects and inspired countless volumes of scholarly analysis; the historiography of Revolutionary events, as much as the events themselves, has molded our notion of national origins and maintains a presence in existing ideologies. The Revolution is mesmerizing because is at the crux of modernity, but also because it compels us to consider the forces which drive mankind – whether they be riveting triumphs of terrifying impulses. "It is not whether phenomena are empirically common that is critical in science . . . but whether they can be made to reveal the enduring natural processes that underlie them."[8] The ability of the French Revolution to expose these abiding social processes never weakens its empirical uniqueness; for this reason, the Revolution captures our boundless fascination as an historical phenomenon.

Before proceeding further, I find it necessary to define the terminology employed in this study. My analysis centers on the models of rites of passage that I encountered in Edward Muir's *Ritual in Early Modern Europe* and in Victor Turner's pioneering work, *The Ritual Process: Structure and Anti-Structure*. Both authors credit the anthropologist Arnold van Gennep as the originator of these models, and van Gennep himself defines his rites de passage as "rites which accompany every change of place, state, social position and age."[9] Although these rites most frequently are viewed on an individual level, they may also be experienced collectively; it is the latter which concern this study.

Rites of passage – though manifesting diverse networks of ceremonies and symbols in seemingly disparate societies – maintain a common sequence from culture to culture. They follow an explicit and remarkable blueprint, here explained by Muir:

> The sequence unfolds in three distinct phases: (1) the rites of
> separation (preliminary), which displace the individual from

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[7] Michel Foucault, *The Archaeology of Knowledge and the Discourse on Language*, trans. A.M. Sheridan Smith (New York: Pantheon Books, 1972), 177.

[8] Clifford Geertz, "The Impact of the Concept of Culture on the Concept of Man," in *The Interpretation of Cultures: Selected Essays* (New York: Basic Books, 1973), 44.

[9] Arnold van Gennep, *The Rites of Passage*, trans. Monika B. Vizedom and Gabrielle L. Caffee (London: Routledge and Kegan Paul, 1909), quoted in Victor Turner, *The Ritual Process: Structure and Anti-Structure* (Ithaca: Cornell Paperbacks, 1969), 94.

his or her previous station; (2) the rites of transition (liminary), which temporarily suspend the subject betwixt and between his or her old and new state, providing an experience of the sacred or a utopian vision of an alternative social world; and (3) the rites of aggregation or incorporation (postliminary), which bring the person into the embrace of the new community.[10]

The parenthetical terms (preliminary, liminary, postliminary) emphasize that the liminal phase is the nucleus of the ritual process. In liminality, an experimental re-ordering and restructuring occurs, in which "new ways of acting, new combinations of symbols are tried out, to be discarded or accepted."[11]

Of rites of passage, there are two main types (and two corresponding types of liminality): rituals of status elevation, and rituals of status reversal. Turner presents a detailed description of each in *The Ritual Process*. The French Revolution first appears to be a rite of status reversal, in that the king and nobility are stripped of their privileges and superior statuses while the people, the "commoners," rise to the rank of sacred sovereign. During the French Revolution, Old Regime statuses were inverted and reversed, with the Third Estate on top and the Second and First Estates below. However, in rituals of status reversal, this would be the case only for the liminal phase, and the Old Regime statuses would be reinstituted once the rite had concluded. The Revolution instead resembles a ritual of status elevation, in which the elevation of the Third Estate is not a temporary condition but the ultimate objective of the rite itself. From now on, I will be referring only to this type of passage and its liminal phase.

During the liminal phase, participants progress – symbolically and physically – "from a profane to a sacred space," where their existence defies categorization and stratification.[12] There is a leveling in which they exchange their previous standing and responsibilities for an ambiguous identity. In the liminal phase, they receive instruction for the roles they will assume upon emergence from the ritual and re-entry to societal structure. It is in liminality that *communitas* may be reached. The concept of *communitas*, as developed by Turner, should be recognized as part of a necessary transition from structure to structure; liminal *communitas* is the interceding "anti-structure" in which transformation takes place. Turner argues that "the history of any great society provides evidence at the political level for this oscillation."[13] In *communitas*, rites of passage invest relationships with a sense of equality, brotherhood, and a rejection of the oppressive features of structured life. *Communitas*, then, is an entity that gives "recognition to an essential

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[10] Edward Muir, *Ritual in Early Modern Europe* (Cambridge: Cambridge University Press, 1997), 19.
[11] Victor Turner, "Variations on a Theme of Liminality" in *Secular Ritual*, eds. Sally F. Moore and Barbara G. Myerhoff (Assen: Van Gorcum & Company, 1977), 40.
[12] Muir, *Ritual in Early Modern Europe*, 20.
[13] Victor Turner, *The Ritual Process: Structure and Anti-Structure* (Ithaca: Cornell Paperbacks, 1969), 129.

and generic human bond, without which there could be *no* society." [14] In this way liminality reinforces societal structure by creating an atmosphere of social solidarity and harmony. Conversely, the rituals of liminal communities destabilize and displace former relationships, pointing towards the reformation of social relations on a new footing. Muir states: "Although rituals often appear to be conservative, preserving the most ancient traditions of a society, through liminality they also make change possible and can even become the instrument of dramatic social reform."[15]

This potential of liminality to produce revolutionary change is of principal interest. In my study, I offer an interpretation of the French Revolution as a shared rite of passage for the French nation. I intend to demonstrate that Jacobinism anticipated institutionalized *communitas* through the creation and extension of a liminal state. Also examined is the possibility that liminality, with its emphasis on utopia and communitas, also houses the potential for social tension and violence. This dynamic between liminal *communitas* and liminal violence is crucial to my perception of the Jacobin Revolution. To supplement Turner and Muir's models of sacred rites of passage, I look to the work of René Girard and the ideas he developed in *Violence and the Sacred*, in which he holds that "violence is the heart and secret soul of the sacred."[16]

It should at this point be stressed that the notions of the sacred and the secular are not necessarily mutually exclusive; there is often a great deal of overlapping. Whereas "sacred" and "profane" are binary opposites, with "sacred" and "secular" this is not always the case. Sacredness is not confined to the religious sphere but also pervades the civic arena. François Furet observed that "the Revolution was akin to a religious annunciation but in a secularized mode." A common denominator of the spiritual and secular realms is the capacity of each to contain that which is considered sacred. Everywhere we see that society provides "sacred, non-religious objects and ideas: the flag, patriotism, loyalty to family and country, and the like."[17] Where one finds desacralization, one also finds resacralization in novel forms. During the Revolution, this resacralization was also a secularization, in which sanctity was conferred by the collective people and not through any divine sanction. No entity is inherently sacred until society deems it as such, since "an object or symbol is sacred not because of what it is, but because of the way it is treated . . ."[18] By destroying traditional symbols and institutions, the Revolution facilitated a massive relocation of the sacred. Emile Durkheim explained it best:

> This aptitude of society for setting itself up as a god or for
> creating gods was never more apparent than during the first

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[14] Ibid., 97.

[15] Muir, *Ritual in Early Modern Europe,* 20.

[16] René Girard, *Violence and the Sacred*, trans. Patrick Gregory (Baltimore: Johns Hopkins University Press, 1977), 31.

[17] Sally F. Moore and Barbara G. Myerhoff, "Secular Ritual: Forms and Meanings," in *Secular Ritual* (Assen: Van Gorcum & Company, 1977), 21.

[18] Ibid, 21.

years of the French Revolution. At this time, in fact, under the influence of the general enthusiasm, things purely laical by nature were transformed by public opinion into sacred things: these were the Fatherland, Liberty, Reason. A religion tended to become established which had its dogmas, symbols, altars and feasts .... It remains true that in one determined case we have seen society and its essential ideas become, directly and with no transfiguration of any sort, the object of a veritable cult.[19]

The liminal phase of the French Revolution must be defined relative to established orders preceding and following, within the context of the "profane social organization or secular space-time bracketing the rite as a whole."[20] It was very clear that the Old Regime was the established order to be destroyed and transformed; however, identifying a discretely organized "new regime" was a far more difficult task. Furet writes:

For the same reasons that the Ancién Regime is thought to have an end but no beginning, the Revolution has a birth but no end. For the one, seen negatively and lacking chronological definition, only its death is a certainty; the other contains a promise of such magnitude that it becomes boundlessly elastic. Even in the short term, it is not easy to 'date': depending on the significance the historian attributes to the main events, he may encapsulate the Revolution within the year 1789, seeing in it the year in which the essential features of the Revolution's final outcome were fixed, when the final page of the Ancién Regime was turned – or he may go up to 1794 and the execution of Robespierre, stressing the dictatorship of the Revolutionary committees, and of the *sections*, the Jacobin saga and the egalitarian crusade of the Year II. Or he may use 18 Brumaire 1799 as the terminus, if he wants to acknowledge the extent to which Thermidorians had remained Jacobins, and include the government of the regicides and the war against the European monarchies . . . a case can be made for any of these time frames.[21]

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[19] Emile Durkheim, *The Elementary Forms of Religious Life, a Study in Religious Sociology*, trans. Joseph Ward Swain (London: Macmillan, 1915), 214.
[20] Terence S. Turner, "Transformation, Hierarchy, and Transcendence: A Reformulation of Van Gennep's Model of the Structure of *rites de passage*," in *Secular Ritual*, eds. Sally F. Moore and Barbara G. Myerhoff (Assen: Van Gorcum & Company, 1977), 53.
[21] François Furet, *Interpreting the French Revolution*, trans. Elborg Forster (Cambridge: Cambridge University Press, 1981), 3-4.

For the purposes of my research, I have focused on the "radical" phase o
the revolution, which began on 10 August 1792. My study initially centers on th
demise of the king and of kingship, from 21 September 1792 (the abolition of th
monarchy) to 21 January 1793 (the execution of Louis XVI); I also examine th
Reign of Terror, and extend no further than 27 July 1794 (9 Thermidor, Year III)
with the arrest of Robespierre and his followers. Emphasis will therefore be place
upon the Jacobins: their policies, their speeches, and their ideology. Rather tha
become embroiled in the debate over the exact birth and conclusion of the Frenc
Revolution, I chose instead to focus on the seminal period in which the Mountai
vigorously sought to dismantle the Old Regime and lay the foundation for a ne
Republic of Virtue. To combat the constraints of time and space, but mos
importantly to offer a more convincing portrayal of the French Revolution as a rite o
passage, selecting a discrete period was critical. By no means do I intend to impl
that the radical phase was the most important aspect of the revolution or the mos
significant, although this is a moot point. Nor do I suggest that other stages do n
exhibit liminal characteristics. I will argue, however, that the Jacobin Republic, wit
its festivals, institutions, and calls for "regeneration," is an exceptionally fecun
episode for interpretation as a rite of passage. In addition, an extensive amount o
primary and secondary literature is available for this period.

There are numerous justifications for my choices of the beginning and en
dates. The opening dates were momentous ones, for it is at this point that th
sovereignty of the king shifted most conclusively and most symbolically to th
people. Sacredness would shift to the people as well – a transferral that the Jacobin
constantly and vigorously sought to reinforce, implying an understanding of "th
inherent sacredness of sovereign power."[22] As of September 1792, the monarch
was considered defunct; in December, the king was placed on trial and then, i
January of the following year, was publicly executed. That this signifies
foreshadowing of the Terror is arguable[23]; nonetheless, these actions clearly severe
ties with the Old Regime and even with the earlier days of the revolution. Th
initiation of a new era began, considered more radical, in which the Jacobins gaine
and exercised power. From this perspective, one may see the king's execution as th
inaugural episode in a revolutionary restructuring of society along Jacobin terms.

The end date was more easily determined, as the authority of the Jacobin
was abruptly, but perhaps not unexpectedly, halted in a coup d'état – th
Thermidorean Reaction of 27 July 1794. The nature of the revolution was altere
dramatically. The Terror ended, and the efforts towards a reinvented culture wer
altered and curbed, though not abandoned. My evaluation here is not so muc
directed at the long-term effects of the first years of the revolution or the actua
characteristics of any new regime. Rather, my interest is in determining the nature o
the societies that Jacobinism sought to destroy and to found.

Under the Jacobin Republic, therefore, a massive re-ordering occurred – no
only a reordering of sacredness and sovereignty, but also, as Mona Ozouf ha

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[22] Geertz, "Centers, Kings, and Charisma," 123.
[23] Michael Walzer, *Regicide and Revolution: Speeches at the Trial of Louis XVI* (New York: Cambridge University Press, 1974), 78.

written, of space and time.[24]   What then, were the "orders" which were altered and created?   To answer this question requires an understanding of the concept of regeneration.   Ozouf wrote specifically on this idea in *A Critical Dictionary of the French Revolution*.   "Regeneration" was pervasive and ubiquitous, an ambition that was "physical, political, moral, and social, which aimed for nothing less than the creation of a 'new people.'"[25]   The revolution had revolted against the Old Regime, shed its royal past and created a new political discourse.   However, remnants of this Old Regime were ingrained in the revolutionary present: in institutions, activities, religion, language, space, time, in the people themselves.   The old order to be eliminated, then, was not only the Old Regime but also living memories of that ancient rule.   The perceived inadequacies and abuses of the Revolution's beginnings were equally subject to eradication.   During the Terror the most brutal instrument of regeneration, the guillotine, "simultaneously wiped out the Old Regime and the first years of the French Revolution."[26]

The Revolution was a national rite of passage, designed to transfer and establish sovereignty in the body of the people.   It was a movement towards adulthood in which the nation sought to shed not only that which preceded (and even aided) its birth, but also its adolescence. The maturation of an active citizen required that he disengage from the past and be absorbed into a nation that was still, according to Robespierre, far from being fulfilled: "The Revolution is finished: I would certainly like to join you in supposing this to be true, although I am not entirely clear what meaning you attach to this proposition I have heard repeated with such pomposity."[27]   He would later declare, "All has changed in the physical order; all must change in the moral and political order.   One half of the world revolution is already achieved, the other half has yet to be accomplished . . .."[28]   The Jacobins, with their idioms of regeneration, renewal, and terror, emphasized the unfinished nature of the revolution and implied the threefold character of liminality: creation, transition, and destruction.

The trial and execution of the king in the winter of 1792-93 marks the beginnings of Jacobin liminality.   To declare that the mere condition of kingship entailed guilt, to maintain the necessity of regicide, was to engage in a rite of separation from the Old Regime.   To the Jacobins, Louis XVI no longer represented sacredness and sovereignty which had shifted to the nation and the *patrie*.   Louis

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[24] Mona Ozouf, *Festivals and the French Revolution*, trans. Alan Sheridan (Cambridge: Harvard University Press, 1988), 126-96.

[25] Mona Ozouf, "Regeneration," in *A Critical Dictionary of the French Revolution*, ed. François Furet and Mona Ozouf, trans. Arthur Goldhammer (Cambridge: Belknap Press of Harvard University Press, 1989), 781.

[26] François Furet, *Revolutionary France, 1770-1880*, trans. Antonia Nevill (Oxford: Blackwell Publishers, 1988), 138.

[27] "National Assembly Debate on Clubs (20 September, 1791)," in *University of Chicago Readings*, 284.

[28] "On the Cult of the Supreme Being (May 7, 1794)," in *Robespierre*, ed. George Rudé (Englewood Cliffs: Prentice-Hall, Inc., 1967), 69.

belonged to "an order that had already been emptied of its powers of persuasion."[29] In the minds of his contemporaries, Louis lived in a new era, in which "monarchy, and above all hereditary monarchy, is incompatible with liberty,"[30] and "opinion makes and unmakes kings."[31] Regardless of the desacralization that had already occurred in the overthrow of the monarchy on 10 August 1792, those who demanded the king's trial argued that any abstract loss of charisma or authority in the institution of monarchy had to be embodied in a tangible national act.

But the Jacobins also saw that to effectively symbolize the transferral that was in progress, the king –ironically – had to be portrayed as still possessing a sacred, albeit malevolent, power. As a consequence of doing so, Louis's execution would signify not only the death of an individual but also the dissolution of the monarchy. Their demise at the hands of the people would be a fruitful and legitimate seizure of sacred authority. In the words of Lynn Hunt, "The French Revolution may have marked a gigantic leap forward in the long term process of western desacralization by cutting politics off from its roots and tradition and making it in theory subject to human will alone but the revolutionaries at the same time sought their own sources of resacralization."[32] The political and corporal death of the king was the first step towards this resacralization. The nation and the monarchy could not co-exist, could not simultaneously share in sacredness or charisma. Only after the king's desacralization and expulsion could the Republic of Virtue arise to fill the vacancy and assume its momentous role as sovereign. "Charisma does not appear only in extravagant forms and fleeting moments," says Geertz, "but is an abiding, if combustible aspect of social life that occasionally burst into open flame."[33] The furor surrounding the person of the king and the weight attached to his death are evidence of this eruption. The Jacobins never ceased to glorify the transferral or emphasize the overwhelming necessity of the king's death. "He must die to assure the tranquility of the people,"[34] proclaimed Saint-Just, whose words were echoed by Robespierre: "Regretfully I speak the fatal truth – Louis must die because the nation must live."[35]

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[29] Roger Chartier, *The Cultural Origins of the French Revolution*, trans. Lydia G. Cochrane (Durham: Duke University Press, 1991), 187.

[30] "Petition of the Society of Friends of the Rights of Man and of the Citizen [Cordeliers Club] to the Representatives of the Nation (21 June 1791)," in *University of Chicago Readings in Western Civilization*, eds. John W. Boyer and Julius Kirshner, Vol. 7, *The Old Regime and the French Revolution,* ed. Keith Michael Baker. (Chicago: University of Chicago Press, 1987), 273.

[31] "Address of the Mauconseil Section to All the Citizens of the Department of Paris (read to the Legislative Assembly on 4 August 1792)," *University of Chicago Readings*, 294.

[32] Lynn Hunt, *The Family Romance of the French Revolution* (Berkeley: University of California Press, 1992), 197.

[33] Geertz, "Centers, Kings, and Charisma," 123.

[34] "Saint-Just, 13 November 1792," in *University of Chicago Readings*, 306.

[35] "Robespierre, 3 December 1792," in *University of Chicago Readings*, 306.

The most compelling view of Louis XVI is that of sacrificial victim. Much has been written on this notion, most notably examined in Susan Dunn's intelligent and exhaustive study, *The Deaths of Louis XVI*, in which she writes that "as far as the Jacobins were concerned, regicide dispelled a state of sin by eliminating the monster responsible for the nation's ills, and, at the same time, it induced a state of sanctity by making possible a virtuous and virtually sacred republic, the reign of popular sovereignty, happiness, and security."[36] She alludes here to the paradoxical victim, who is portrayed not only as the source of great iniquity, but who also, through his death, becomes the basis of an ensuing serenity. He was mythologized as "a transcendental symbol not only of violence and disorder, but of peace and order as well."[37] Also pivotal is the assertion made by Hunt in *The Family Romance of the French Revolution*, that "the French killed the father in an act that comes as close as anything does in modern history to a ritual sacrifice."[38] In their arguments, both authors draw from or refer to René Girard and his theories on sacrifice and scapegoating.

If one views the radical phase of the Revolution through Girard's model, King Louis XVI was indeed an ideal scapegoat and sacrificial victim. As with all scapegoats, he lived on the fringes of society – in this case, formerly positioned above society and isolated in his status. Scapegoats may be P.O.W.s, slaves, the handicapped, kings, that is, anyone who lacked between themselves "and the community a crucial social link . . . ."[39] Dunn points out that Louis's identity was uncertain, that he "was alternately characterized as monarch, citizen, rebel, alien, tyrant, traitor, and supernatural monster."[40] Saint-Just, in a speech urging an execution without trial, emphasized the king's marginality, referring to him as "the assassin of a people," "its enemy," "a rebel and a usurper," and "a barbarian, an alien, a prisoner of war."[41] Louis was an anomaly as well: he was a king in a society where kings no longer existed. Neither could he ever truly be a citizen, "because men called him king, because he acted like a king, because he intrigued and conspired, . . . to 'be really king again.'"[42] As such, he constituted a quandary for the Jacobins: there was no place for him in the Republic. Moreover, because this "crucial social link" was lacking, Louis could be the victim of social tensions – aggressions redirected at him without the fear of provoking any retaliation that would threaten social harmony.

Louis XVI was also an ideal scapegoat because he was perceived to be guilty. According to Girard, "we can expect the victim to be seen as guilty and

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[36] Susan Dunn, *The Deaths of Louis XVI: Regicide and the French Political Imagination* (Princeton: Princeton University Press, 1994), 20.

[37] René Girard, "Generative Scapegoating," in *Violent Origins*, ed. Robert G. Hamerton-Kelly (Stanford: Stanford University Press, 1987), 92.

[38] Hunt, *Family Romance*, 9.

[39] Girard, *Violence and the Sacred*, 12.

[40] Dunn, *Deaths of Louis XVI*, 16.

[41] "Saint-Just, 13 November 1792," in *University of Chicago Readings*, 304-7.

[42] Michael Walzer, ed., *Regicide and Revolution: Speeches at the Trial of Louis XVI* (New York: Cambridge University Press, 1974), 69.

therefore to *be* mythically guilty."[43]   To Marat, Louis was a "monster still covered with the blood of those friends of France whose slaughter he had commanded."[44] Saint-Just maintained that "he oppressed a free nation; he declared himself its enemy; he abused its laws . . . he intended that the people be crushed."[45] Robespierre accused him of being not only a traitor, but also "a criminal toward humanity."[46] In addition, Louis's indictment of 11 December 1792 closed with the accusation: "You caused the blood of Frenchmen to flow."[47]   Robespierre and Saint-Just, who dismissed the prospect of any absolution for the king, saw that to suggest a trial – and therefore a possibility that he was innocent – was to suggest that the Revolution itself might be illegal. The Jacobins portrayed his guilt as absolute and undeniable.

Yet, of what was Louis personally guilty, beyond his kingship, beyond thinking and acting according to a role he understood to be legitimate? Girard's model of the scapegoating mechanism requires that – although his sacrificers see the victim as guilty – he is in fact innocent. Louis, like all scapegoats, has "little or no subjective guilt and a lot of objective responsibility."[48]   In reality, he is "guilty" because of an assumed accountability for malevolence, and by virtue of his marginal position relative to the group.   Girard writes: "Arbitrary scapegoats will be presented, if not as culprits deliberately bent on evil, at least as individuals unwittingly responsible for some disastrous event."[49] Louis is depicted as both. To the Jacobins, Louis was no longer the embodiment of the nation; yet he still possessed the ability "either to trouble the tranquility of the state and to undermine liberty, or to strengthen both."[50] Here lies Louis's dual mythical role: to be blamed as the origin of society's ills, but also – through his removal – to provide a social catharsis.   As the source of supposed transgression, his presence endangers the community.   Violence against the scapegoat "appears to be justified,"[51] for his elimination is akin to the purgation of a contaminant. His persecution rallies the community around a public menace, whose elimination is followed by harmony and the deterrence of further corruption. Robespierre implied this connection in a speech during the king's trial: "What is it that demands your attention to Louis? . . . it is the need to strengthen public liberty and tranquility through the punishment of a tyrant."

Girard's model also holds that all men rely on a "regulated system of distinctions to establish their identity and their mutual relationships," and that "order, peace, and fecundity depend on cultural distinctions."[52] A breakdown of this cultural

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[43] Girard, "Generative Scapegoating," 79.

[44] "Marat, 3 December 1792," in *Regicide and Revolution*, 159.

[45] "Saint-Just, 13 November 1792," in *University of Chicago Readings*, 306.

[46] "Robespierre, 3 December 1792," in *University of Chicago Readings*, 311.

[47] "The Indictment of Louis XVI, 11 December 1792," in *A Documentary Survey of the French Revolution,* ed. John Hall Stewart (New York: The Macmillan Company, 1951), 391.

[48] Girard, "Generative Scapegoating," 96.

[49] Ibid., 82.

[50] "Robespierre, 3 December 1792," in *University of Chicago Readings*, 308.

[51] Girard, "Generative Scapegoating," 79.

[52] Girard, *Violence and the Sacred*, 49.

order causes what he describes as a "crisis of distinctions" in which cycles of vengeance contaminate the community with reciprocal violence. Without differentiation, without an established "us" and "them" system of identification, violence will threaten if not actually destroy society. The elimination of a scapegoat therefore serves to redirect this internal violence at an external – but related and therefore effective – source. He is chosen because his persecution creates the illusion of social unity through collective victimization.

A revealing example of the liminal potential for scapegoating and violence is found in Edward Muir's description of the youth-abbeys of traditional Europe, and especially those of fifteenth century southeastern France. According to Muir, the youth-abbeys represented a term of extended liminality for male adolescents, who "bonded" with each other by persecuting "marginal" women: "Certainly the most extraordinary way in which youth-abbeys ritualized a passage of status for young males was through participation in a gang rape."[53] In this violent ritual, the victim was chosen based on her reputation as someone who "had broken or appeared to break the normal rules of sexual behavior."[54] She was chosen as a scapegoat, as someone who lived on the margins of acceptable society, and whose persecution and stigmatization would produce solidarity in the community by "[enforcing] community moral standards," and within the youth-abbey, through a collective mobilization against a common target.[55] "After the rape, the rest of the community considered her to be the guilty party," writes Muir, and the gang members entered manhood.[56] This reinforced her designation as a scapegoat. As the object of collective persecution, she was blamed for violating society's laws and upsetting the implied order, yet as the object of collective aggression she became the source of new order and social unity. As Girard states, "sacrifice, as we know it, is essentially a communal institution."[57]

This may at first appear to undermine Turner's depiction of liminality, in which the collapse of structure provides harmonious communities of brotherhood and sacred but unstable unity. However, a synthesis of Girard and Turner's models instead reveals the dynamics that operate during times of cultural, political, and social change. The disintegration of structural life is natural, inevitable, and essential; yet the ensuing liminal *communitas* or violence that always serves to encourage the reinstitution of structure. The burgeoning tensions which arise in both structure and anti-structure – in order and in liminality – heighten the need for a salutary alternation from one condition to the other. Girard refers to "the two faces of the sacred, the interplay of order and disorder, of difference lost and retrieved."[58] He also alludes to the dichotomy of creation and destruction inherent in the process: "Sometimes [the sacred] rallies the whole community around itself in order to save mankind and restore culture, sometimes it seems intent on destroying its own

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[53] Muir, *Ritual in Early Modern Europe*, 28.

[54] Ibid., 29.

[55] Ibid., 28.

[56] Ibid.

[57] Girard, *Violence and the Sacred*, 101.

[58] Ibid., 257.

creations."[59] Likewise, Turner remarks that society is "a process rather than a thing – a dialectical process with successive phases . . ."[60] and emphasizes an equilibrium between "both key modalities of human relatedness, structure and communitas, if the social process and personal life are to develop fruitfully and usefully."[61]

Nowhere in the Revolution is the liminal potential for purgative and destructive violence more apparent than during the Terror. "The history of a society is also a history of the clash that exists between its instinct for survival and desire for union and collaboration with its taste for destruction and ashes," writes Arlette Farge.[62] Violence was an instrument of regeneration, used to create a "society purged of its dubious members."[63] How else could society be unified and regenerated than through a removal of all nonconforming elements? "[The Terror coincided with and was inseparable from the Revolution," argues Furet, "because there was no other way of someday molding a republic of citizens."[64] The Terror also appeared to facilitate a unified order of brotherhood and peace. "In conscious discourse, fraternity was an idea associated with political solidarities and the drawing of political and social boundaries within the community."[65] Aristocrats and royalists were the most obvious targets of the Terror, because, as Girard notes, "yesterday's idol becomes today's scapegoat."[66] In the words of Robespierre, émigrés (like the king) were surely considered to be "worthy of death,"[67] and at the very least, were declared "civilly dead."[68] The accused, according to Saint-Just, also included "not only the traitors, but even those who are indifferent; you have to punish whoever is passive in the republic, and who does nothing for it."[69] Whosoever did not share in the revolutionary enthusiasm was an object of suspicion. "Perish the scoundrel who ventures to abuse the sacred name of liberty,"[70] said Robespierre.

However vivid and assured were the Jacobin's claims, the lines between revolutionary and traitor were, in reality, not so clearly drawn. With the Revolutionary leveling of society, we return to Girard's "crisis of distinctions." It is a crisis of this kind, he says, which brings about violence in the community when differences evaporate, former identities disintegrate, and the ability to discern the

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[59] Ibid., 258.

[60] Turner, *Ritual Process*, 203.

[61] Turner, "Variations on a Theme of Liminality," 47.

[62] Arlette Farge, *Fragile Lives: Violence, Power and Solidarity in Eighteenth Century Paris*, trans. Carol Shelton (Cambridge: Harvard University Press, 1993), 285.

[63] Ozouf, "Regeneration," 784.

[64] François Furet, "Terror," in *Critical Dictionary,* 148.

[65] Hunt, *Family Romance*, 12.

[66] Girard, "Generative Scapegoating," 82.

[67] "Robespierre, 28 December 1792," in *Regicide and Revolution*, 318.

[68] "Decree against Émigrés, 28 March 1793," in *Documentary Survey*, 415.

[69] Saint-Just, "Report to the Convention on Behalf of the Committee of Public Safety (10 October 1793)," in *University of Chicago Readings,* 355.

[70] Robespierre, "Report on the Principles of Political Morality (5 February 1794)," in *University of Chicago Readings*, 376-77.

enemies from allies rapidly disappears. Isser Woloch asserts that "when the *constituants* situated power in the unbounded space of popular sovereignty without strict limitations, they gave the representatives of the people – or those claiming to speak for the people – license to justify in the name of the people any policy that served their objectives."[71] This trend was instigated and exemplified when members of a Parisian *section* declared, "Let us at last obtain the right to forget the law in order to save the *patrie.*"[72] Although sovereignty had surely transferred from the monarchy to the people, it did so in the absence of a firmly established written law or stable institution of political authority.[73] The open and generic nature of authority allowed for a dangerous volatility and intense suspicion that echoes throughout Jacobin rhetoric. "To remain anxious is not madness" said Robespierre, who encouraged "the watchfulness that reason imposes."[74] Lynn Hunt explains the impetus for such paranoia: "The unwillingness to fix charisma in any particular location" resulted in the notion that "because power could now be located anywhere, enemies could be found anywhere too."[75] Calling for a search for "enemies within and without,"[76] the Jacobins stressed the urgency to act and "either destroy our enemies, or be destroyed by them."[77] Hannah Arendt, in *On Revolution*, argues that the predicament can be traced back to Rousseau. In his philosophy, she says, can be found the idea that "the common enemy is the particular interest or the particular will of each man."[78] She notes the solidarity that arises through the designation of a common foe, for "only in the presence of the enemy can such a thing as *la nation une et indivisible,* the ideal of French and of all other nationalism, come to pass."[79] Mobilization against an abstract enemy was all encompassing, for "we cannot destroy them without a general and extraordinary deployment of all the moral and physical forces of the republic."[80]

The guillotine was an apparatus which satisfied a number of needs for the Jacobin Terror; it provided public punishment and ritual spectacle, purgation and equalized executions. "In France," argues Foucault in *Discipline and Punish*, "the guillotine, that machine for the production of rapid and discreet deaths, represented a

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[71] Isser Woloch, *The New Regime: Transformations of the French Civic Order, 1789-1820s,* (New York: W. W. Norton & Company, 1994), 431.

[72] "Address of the Mauconseil Section," 294.

[73] Keith Michael Baker, *Inventing the French Revolution: Essays on the French Political Culture of the Eighteenth Century* (Cambridge: Cambridge University Press, 1990), 198.

[74] "National Assembly Debate on Clubs (20 September 1791)," in *University of Chicago Readings*, 284.

[75] Hunt, *Family Romance*, 199.

[76] "Not a Moment to Lose, or Discourse by Citizen Lacroix to the Unity Section, at the Meeting of 28 July 1793," in *University of Chicago Readings*, 335.

[77] "Proceedings of the National Convention (5 September 1793)," in *University of Chicago Readings*, 343.

[78] Hannah Arendt, *On Revolution* (New York: The Viking Press, Inc, 1963), 73.

[79] Ibid., 72.

[80] "Not a Moment to Lose," 335.

new ethic of legal death. But the Revolution had immediately endowed it with a great theatrical ritual."[81] The guillotine, besides providing the dramatic spectacle of punishment, offered uniform treatment of the guilty through beheadings: "let the avenging blade fall upon every guilty head, let no criminal be spared."[82] In this somewhat grotesque manner, all men were theoretically held to be equal; anyone could be accorded this noble death, formerly reserved only for the aristocratic and the privileged. Writes Lynn Hunt: "The recently installed guillotine had been designed as the great equalizer; with it, every death would be the same, virtually automatic, presumably painless."[83] Through it, the Republic could punish the "specious arguments, slanders, and all the petty means used by the petty men who are at once the shame and the scourge of revolutions."[84]

According to the Jacobin plan, Ozouf writes that, "once the purge was accomplished, it then became necessary, in a second phase, to surround each individual with a web of myths, rituals, and beliefs as restrictive as possible and as confining as what had gone before.[85] Furet also writes that the Terror "designated those who were to be excluded in order to purify the body of the nation."[86] The Revolutionaries themselves were fully conscious of the "purification" that they advocated. Revolutionary discourse is fraught with the language of purgation. "Blood is necessary to punish so many liberticidal and nationalcidal crimes; still more is necessary to prevent those that would follow."[87] During the National Convention, it was hoped that "soon the land of liberty will be purged of all the brigands infesting it,"[88] because the nation, "sullied by the presence of its enemies, is going to be freed from them."[89] It was thought that only with the removal of all suspected persons could harmony and security be restored. "Frenchmen Republicans," urged Robespierre, "it is up to you to cleanse the earth [the tyrants] have sullied and restore the justice they have banished from it."[90] The following is taken from a Jacobin circular of April 1793, a few months before the Terror was at its most devastating – captures their ethos of violence and purgation: "The Republic condemns the friends of kings! They are the ones who dismember her, ruin her, and

[81] Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Pantheon Books, 1977), 15.

[82] "Petition of the William Tell Section to the Convention, 22 Brumaire (12 November) 1793," in *University of Chicago Readings*, 340.

[83] Hunt, *Family Romance*, 1.

[84] "National Assembly Debate on Clubs (20 September 1791)," 285.

[85] Ozouf, "Regeneration," in *Critical Dictionary*, 785.

[86] Furet, *Revolutionary France*, 140.

[87] "Petition of the William Tell Section to the Convention, 12 November 1793," in *University of Chicago Readings*, 339.

[88] "Proceedings of the National Convention (5 September 1793)," in *University of Chicago Readings*, 345.

[89] Ibid., 346.

[90] "The Festival of the Supreme Being," in *University of Chicago Readings*, 387.

have sworn to annihilate her . . . with them your liberty disappears! And by their prompt expulsion the *patrie* is saved!"[91]

However, the purge initiated by the Jacobins was never completed, and in reality never could be. Enemies were everywhere because as the Revolutionaries feared, the Revolution could never be unanimously accepted. Scapegoats, "in the nonconscious and psychosocial sense to which we all spontaneously resort when we speak about political or racial witch-hunts,"[92] were in endless supply. Girard points out that "historical 'texts of persecution' such as . . . the arguments of terrorists in the French Revolution, are often called 'mythical' by those who refuse to be fooled" by the scapegoating mechanism.[93] As the overt threats of foreign wars and counter-revolution waned, Robespierre shifted his focus to the perceived hidden threats within the Republic. Furet emphasizes that, "As Mona Ozouf has demonstrated, from the autumn of 1793 to the spring of 1794 the case for the necessity of the Terror abandoned the circumstantial grounds of the war in favor of a more fundamental justification: nothing less than the Revolution itself."[94] The Terror raged at the peak of its intensity until 9 Thermidor, when the orchestrators of terror were deposed and themselves purged. The Jacobins "instituted an administrative violence whose purpose was protection of the civil community, but which became available for political solutions to conflicts in the individual sphere."[95] In doing so, they never cleansed themselves of "the elementary violence inherent in all strength and detrimental to all forms of political organization."[96] Perhaps it is true that, as Hannah Arendt stipulated, "violence appears where power is in jeopardy, but left to its own course it ends in power's disappearance."[97]

In characterizing the Jacobins, how does one reconcile their passion for social equality with the institutionalized brutality of the Terror? All historians of the French Revolution face this dilemma. Isser Woloch observed that "while democratic space contracted brutally in the political and religious spheres during the Terror, the Jacobin government of 1793-94 thus opened other kinds of democratic or egalitarian prospects. Whatever their conceptual weaknesses or practical shortcomings, most of the programs for free public schools, welfare entitlements, and procedural reforms in civil justice . . . were implemented by the revolutionary government with conviction.[98] The Jacobin likewise sought *communitas* with conviction. In *The Ritual Process*, Turner writes: "Maximization of *communitas* provokes maximization

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[91] "Circular from the Paris Jacobins to Local Branches of the Club (5 April 1793), in *A Documentary Survey of the French Revolution,* ed. John Hall Stewart (New York: The Macmillan Company, 1951), 428.

[92] Girard, "Generative Scapegoating," 81.

[93] Ibid., 144.

[94] François Furet, "Terror," in *A Critical Dictionary of the French Revolution*, eds. François Furet and Mona Ozouf, trans. Arthur Goldhammer, (Cambridge: Harvard University Press, 1989), 148.

[95] Roger Chartier, *Cultural Origins*, 195.

[96] Arendt, *On Revolution*, 83.

[97] Hannah Arendt, *On Violence* (New York: Harcourt, Brace & World, 1969), 56.

[98] Isser Woloch, *New Regime*, 429.

of structure, which in its turn produces revolutionary strivings for renewed *communitas*."[99] Jacobin strivings for *communitas* are evident in every aspect of their speech and policy. They sought through pervasive systems of rituals and representations to enhance the liminal spirit of the Revolution, to provide an arena for the observable transference of sovereignty and sacredness. They simultaneously infused the traditional with the innovative, to destroy the old order and eventually once the revolution had been completed, to fully replace it with a new national order. Jacobin culture was an educational system that provided instruction for the "regeneration" of those whom they governed, but also provided support for their own authority. Explains Geertz, "[The governing elite] justify their existence and order their actions in terms of a collection of stories, ceremonies, insignia, formalities, and appurtenances that they have either inherited or, in more revolutionary situations invented."[100]

Habitually, Jacobin rhetoric and policies called for or faced qualities similar to those found in a liminal phase. These qualities, as listed by Turner, include homogeneity, equality, absence of status, uniform clothing, absence of rank, no distinctions of wealth, unselfishness, total obedience, sacred instruction, anonymity, and acceptance of pain and suffering.[101] Homogeneity was certainly encouraged through clothing, from the glorified sans-culottes dress to the tri-color cockade. A recognition of the new society of civic equality was encouraged by the use of the informal "tu" over the formal "vous," as well as by the use of "citoyen" and "citoyenne" rather than "monsieur" and "madame." The nationalization of language was a civic strategy that aimed at uniformity and homogeneity. "As such," said David A. Bell, it "entered irrevocably into the larger ideology of the nation." [102]

This lofty goal of homogeneity and equality extended to the demarcation of space and time. A decree in 1790 established 83 départements in France, redividing the nation in an attempt to undercut regional loyalties and establish spatial uniformity. Streets, cities, and places received new names, such as the *Place Louis XV*, where in 1792, a statue of Liberty replaced one of Louis XV and it was renamed the *Place de la Révolution*.[103] The metric system proposed this same spatial uniformity, and the Revolutionary calendar was its temporal counterpart. The Revolutionary calendar was an extraordinary creation that, according to Mona Ozouf, had four objectives: rationalization, commemoration, purgation, and replacement.[104] It was part of "the regeneration of the French people" said Fabre

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[99] Turner, *Ritual Process*, 129.

[100] Geertz, "Centers, Kings, and Charisma," 124.

[101] Turner, *Ritual Process*, 106.

[102] David A. Bell, "Lingua Populi, Lingua Dei: Language, Religion, and the Origins of French Revolutionary Nationalism," in *The American Historical Review* C, no. 5 (1995): 1421.

[103] John Paxton, *Companion to the French Revolution* (New York: Facts on File Publications, 1988), 159.

[104] Mona Ozouf, "Revolutionary Calendar," in *A Critical Dictionary of the French Revolution*, eds. François Furet and Mona Ozouf, trans. Arthur Goldhammer (Cambridge: Harvard University Press, 1989), 540.

d'Eglantine, who recognized that "our understanding only proceeds by means of images, our memory only rests and relies upon them."[105] The calendar instituted new years, new weeks, new commemorations, new rhythms, and a new beginning; the counting of time now began not with the birth of Christ, but with the birth of the Republic. It was to be a commemoration of "regenerated France" and the "renewed souls of Frenchmen."[106] The calendar, which was widely resisted and later revoked by Napoleon, was designed to surround "new man" with "luminous images, disciplining rituals, and instructive habits."[107]

In establishing festivals such as the Festival of the Supreme Being, the Jacobins recognized the importance of public ritual for creating social solidarity. Through ritual, the Jacobins could act as "sacred instructors" to ensure that the participants recognized the transferral taking place and understood their roles in the new order. As such, festivals were designed to allow for glimpses of *communitas*: "Through the festival the new social bond was to be made manifest, eternal, and untouchable . . .."[108] Festivals were also an instrument of regeneration, of creating new citizens, for "although the legislator makes the laws for the people, festivals made the people for the laws."[109] However, staged amid an atmosphere of terror and coercion, festivals fell short of the utopian vision. The artificiality of this *communitas* was evident to Mona Ozouf, who wrote "the festivals were merely a false celebration of peace and unanimity of feeling; they became a camouflage, a façade plastered onto a gloomy reality that it was their mission to conceal."[110]

It is the function and goal of public ritual, at least in part, to obscure differences and present not realism but idealism. "Political ritual or ritualized politics," writes Muir, "tends to camouflage tensions, especially by representing more political *harmony* than may actually exist."[111] Meanwhile, there is an element of force. In the midst of convocations of "an immense chain of love and happiness," and the "sublime love of country," the Festival of the Supreme Being featured marching soldiers; flowers and "the cherished colors of liberty" were to be surrounded by sabers, "guns or pikes," and swords.[112] The Jacobins exploited the power of ritual not only to depict the semblance of unity, but also to strengthen and personify power. In this way, they were no different from traditional authorities, who used civic rituals that "reproduced power relationships" while they simultaneously "represented the utopian ideal of a harmonious community and

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[105] Fabre d'Eglantine, "Report on Behalf of the Commission to Draw up the Calendar, Day 3 of the 2d year of the French Republic" in *University of Chicago Readings*, 365.
[106] Romme, "Report on the Republican Era (20 September 1793)," in *University of Chicago Readings*, 363.
[107] Ozouf, "Revolutionary Calendar," 546.
[108] Ozouf, *Festivals*, 9.
[109] Ibid.
[110] Ibid., 11.
[111] Muir, *Ritual in Early Modern Europe*, 230.
[112] "The Festival of the Supreme Being (8 June 1794)," in *University of Chicago Readings*, 385.

reminded citizens of the possibility of coercion if they failed to accommodate themselves to those in power."[113]

Lay religion provided another avenue for the transferral of sovereignty and sacrality, although "lay cults were not official and were not authorized by either church or state."[114] In the brilliant *Reclaiming the Sacred*, Suzanne Desan describes how participants took "traditional sacred symbols and the rituals themselves"[115] and subsequently "adapted and created new rituals to respond to the Revolutionaries challenge to traditional religious assumptions, social structure, and community identity."[116] In addition, lay religious leaders and rioters "created spiritual and political authority by fusing traditional popular culture with new revolutionary techniques."[117] The blending of old and new was present in pre-revolutionary days as well, indicating the Revolution's position as part of an ongoing process. For example, during political centralization in the Old Regime and "the gradual transfer of political power from the local level to the Crown,"[118] Périgordan peasants alternated between either popular justice or royal justice, depending on the advantages of each. Their actions may have encouraged political centralization, but additionally, they constituted "an amalgamated form of behavior that combined both traditional and modern strategies."[119] We also find during the Enlightenment – and what followed – the development of transitional forms that would anticipate and facilitate the Revolution. Keith Michael Baker writes that "public opinion can be seen as functioning historically as a kind of liminal concept between absolutist authority and revolutionary will."[120] It "had become the articulating concept of new political space with a legitimacy and authority apart from that of the crown. . . Within this space, the French Revolution became thinkable."[121]

"The great constructive experience of the French Revolution"[122] provides evidence that structure and liminality are part of a continuum manifesting both creative and destructive forces. Passage in and out of structure – for individuals and for society – is a necessary and undeniable mechanism through space and time. This dialectic allows for transformation and transferral through a process of social formation, in which old bonds must be severed and new ones forged. The

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[113] Muir, *Ritual in Early Modern Europe*, 238.

[114] Suzanne Desan, *Reclaiming the Sacred: Lay Religion and Popular Politics in Revolutionary France* (Ithaca: Cornell University Press, 1990), 99.

[115] Ibid.

[116] Ibid., 121.

[117] Ibid., 167.

[118] Steven G. Reinhardt, *Justice in the Sarladais, 1770-1790* (Baton Rouge: Louisiana State University Press, 1991), 270.

[119] Ibid., 267.

[120] Baker, *Inventing the French Revolution*, 198.

[121] Ibid., 199.

[122] Geoff Eley and Ronald Grigor Suny, "Introduction: From the Moment of Social History to the Work of Cultural Representation," in *Becoming National: A Reader* (New York: Oxford University Press, 1996), 4.

Revolution provided a context in which "people became able to reimagine the boundaries of their worlds, replacing allegiance to universal religions and divinely ordained dynasts with a new kind of community based on citizenship . . .."[123] It was the objective of the Jacobins to facilitate this replacement, to construct a new society, and teach Frenchmen how to be citizens. They wanted the best of both *communitas* and structure. On the one hand, they desired the control and stability of an ordered environment. Yet, they believed that "liberty comes from salutary anarchy, and slavery returns with absolute order."[124] The harmonious brotherhood of liminality may bring about the same enslavement, however, for as Turner has written, an "exaggeration of *communitas*, in certain religious or political movements of the leveling type, may be speedily followed by despotism, overbureaucratization, or other modes of structural rigidification."[125] In an effort to oversee such a leveling, the Jacobins themselves fulfilled their own prophecy, and so instituted a tyranny similar to that which they had condemned.

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[123] Ibid., 24.

[124] Saint-Just, "Report to the Convention," 360.

[125] Turner, *Ritual Process*, 107.

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Effects of Teacher Pronunciation on the Development of Authenticity in Student Pronunciation at the Introductory Level of Spanish Learning

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ABSTRACT

The purpose of this study is to examine the relationship between the pronunciation of three teachers and the development of authenticity in the pronunciation of their students. Thirty-six students from three separate sections of an introductory Spanish course at The University of Texas at Arlington were administered a pronunciation pre- and posttest designed to gauge subject pronunciation of a predetermined set of allophones in the target language. The same test was administered to the teachers of each section in order to obtain individual ratings of their pronunciation as well. Both teachers' and students' pronunciations of specific allophones were rated by a panel of three judges. Pearson product moment correlations provided preliminary indications as to those variables that related most to student acquisition of a non-native phonological system in a formal classroom setting. Furthermore, subject concern for acquiring native or near-native pronunciation in Spanish as measured by the Pronunciation Attitude Inventory (PAI; Elliott, 1995) was correlated with subject accuracy of L2 pronunciation both on the pretest and posttest. Other variables that proved to have little or no relationship to variation in pronunciation were included: a) gender; b) age; c) overall student grade point average (GPA); d) total number of years of formal instruction in Spanish; e) enjoy learning Spanish; f) Spanish mode; g) Spanish importance; h) course attendance; i) Spanish skills, j) motivation and k) Spanish grade. A multiple regression analysis was carried out in order to determine which factors best explain individual variation in subject pronunciation of the second language (L2). The present researcher believes that teachers pronunciation may be one of the most influential factors in students' acquisition of a non-native phonological system.

INTRODUCTION

Several different approaches for foreign language instruction (FL) have been developed throughout this century. Such methods include: the grammar translation approach, the audio-lingual approach, and proficiency oriented instruction as well as other methods generally falling under the rubric of the communicative approach. Currently, the communicative approach is the most popular, albeit misunderstood, methodology used in the United States for FL instruction. Although most methodologies strived to develop second language (L2) proficiency, the role of formal instruction in phonological acquisition differed depending upon the approach or method being used. For example, the grammar translation approach abandoned phonological development in favor of developing students' metalinguistic knowledge of the L2 linguistic system. The audio-lingual method, heavily influenced by behaviorist theories, was characterized by its emphasis on pronunciation training. Critics of this method in the late sixties and early seventies argued that too much stress on pronunciation hampered other skill development, such as the ability for free expression of ideas and experimentation of utterances (Terrell, 1989). Students studying under the audio-lingual method evidenced statistically significant improvement in L2 pronunciation. Several empirical studies have corroborated

previous research on the beneficial effects of formal phonological instruction using this approach. With the onset of the communicative approach and the decline of the audio-lingual method, pronunciation no longer occupied the forefront of L2 instruction.

Consequently, many teachers today consider pronunciation as a non-crucial skill or, at least, a skill that should be emphasized minimally, if not acquired peripherally, without formal instruction in the classroom. In addition, Elliott asserts that "teachers tend to view pronunciation as the least useful of the basic language skills, and, therefore, they generally sacrifice teaching pronunciation in order to spend valuable class time in other areas of the language" (1995, 531). Similarly, Tarone states " the lack of emphasis on pronunciation development may be due to 'a general conviction on the part of the second language acquisition researchers, second language teachers, and students, that pronunciation of a second language is simply not very important'" (15). Pennington and Richards affirm that pronunciation is "traditionally viewed as a component of linguistic rather than communicative competence or as an aspect of accuracy rather than conversational fluency" (207). Elliott supports this claim by stating that pronunciation "has come to be regarded as of limited importance in a communicatively oriented curriculum" (1995, 531). Furthermore, he asserts that the Total Physical Response (TPR) and the natural approach place little "emphasis" on precise articulation during the introductory level of language education (Elliott 1995, 531).

Theorists have looked toward the goals of language teaching in order to find an appropriate methodology. According to Krashen the goal of instruction is to bring the students to the point where they can use natural input available outside the classroom (61). Similarly, Liskin-Gasparro proposes that the ultimate goal of language teaching should be to empower the learner to use the language "outside the classroom independently of the materials and activities of the course"(31). Finally, Savignon states that students should be able to produce sentences in the target language and know how to use them appropriately for real life communication (160 - 167). However, little attention has been given to formal instruction in L2 pronunciation.

Research examining the effect of formal instruction in pronunciation has yielded seemingly contradictory results. Formal instruction in pronunciation can: a) have no apparent relationship to pronunciation accuracy (Suter, 1976); b) have beneficial effects on pronunciation (Neufeld, 1976;Neufeld and Schneiderman, 1980; Elliott, 1995); c) have a possible negative effect leading to the overgeneralization of sounds (Elliott, 1997); and d) when not taught, have a slight negative effect on pronunciation.

What then have researchers determined to be the most influential factors in the acquisition of the second language phonological system? Some attribute an adult's difficulty in acquiring a second language phonological system to certain biological determinants such as age, hemispheric specialization, brain plasticity and innate learning styles and preferences. Others believe that it is possible to modify current teaching methodologies, focusing on pronunciation in order to help adults achieve native or near-native pronunciation in the target language. Florez supports the possibility of various factors influencing the "learning and teaching of

pronunciation skills", while leaving room for the achievement of pronunciation accuracy (1). She presents the approaches of Celce-Murcia and Goodwing, (1996) Gillete (1994), Graham (26-28) and Pennington (92-108) as she discusses the following factors:

AGE

The discussion about the influence of age on language acquisition and, in particular, pronunciation is diverse. Some researchers dispute that after puberty lateralization (the transmission of linguistic functions to the different brain hemispheres) is complete. In other words, they believe that adults' ability to develop native-like pronunciation is not as limited as has often been assumed (1) "Most researchers, however, agree that adults find pronunciation more difficult than do children", says Florez, who reports that adults "probably will not achieve native like pronunciation" (1). Conversely, other research suggests that the difference between children and adult learners in developing second-language skills may be not so great. Children seem to have an advantage in out-of-class learning situations and the acquisition of native accents; nonetheless, adults appear to have an advantage in learning languages in formal classroom settings (Chastain, 1980).

APTITUDE

Much discussion has revolved around an individual's capacity or aptitude for learning languages. "Some researchers believe all learners have the same ability to learn a second language because they have learned a first language" (Florez, 1) however, the ability to identify and internalize foreign sounds are possibly unevenly developed in different learners" (Florez, 1998).

LEARNER ATTITUDE AND MOTIVATION

Other nonlinguistic factors can affect the development of pronunciation, namely individual personality and the personal goals of the learner (Florez, 2). "Attitude toward the target language, culture, and native speakers; as well as the degree of acculturation (including exposure to and use of the target language); personal identity issues; and motivation for learning can all support or impede pronunciation skills development" (Florez, 2).

NATIVE LANGUAGE

The learner's first language has been identified as an important factor that may influence pronunciation of the target language. "So-called interference or negative transfer from the first language is likely to cause errors in intonation and rhythm in the target language" (Florez, 1998).

PRONUNCIATION INSTRUCTION

When the learner has been previously exposed to pronunciation instruction he carries this into the present experience; thus, his performance level may be positively or negatively affected (Florez, 2). Florez asserts that "learners at higher language proficiency levels may have developed habitual, methodical pronunciation errors that must be identified and addressed" (2). Phonological instruction for adult

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learners has been a matter of controversial discussion for those involved in second language acquisition.

THE TEACHER

Teachers play a crucial role in the learning process. They function not only as demonstrators of the practical nature of the target language but also as guides for pronunciation accuracy. The instructors need to possess good interpersonal communication skills, so as to engage and challenge their students in this and all other areas of language. Moreover, this enables the students to increase their ability to self-monitor pronunciation performance.

EXPERIMENTAL DESIGN AND METHODOLOGY

The present study was designed to determine the relationship between teacher's pronunciation and the development of authenticity of the student's pronunciation at the introductory level of Spanish learning. Based on findings from previous research examining phonological acquisition for the adult foreign language learners, several variables were included in order to identify external factors that may influence one's acquisition of the target language sound system. Such variables were: 1) gender, 2) age, 3) mode of Spanish study, 4) whether the subjects enjoyed learning Spanish, 5) perceived importance of learning Spanish, 6) perceived skill level in Spanish, 7) class attendance, 8) motivation to learn Spanish, 9) total number of years of formal instruction in Spanish, 10) overall grade point average for all courses (GPA), 11) overall grade for Spanish, 12) Spanish-speaking relatives, 13) whether the subjects are motivated to learn Spanish, 14) travel to a country where the target language is spoken. The data for this study were collected during summer 1999 at The University of Texas at Arlington.

INDEPENDENT VARIABLES

All measures obtained for the independent variables were gathered during the first week of the semester prior to the administration of the pronunciation pretest. Descriptive statistics for the independent variables are listed in Table 1.

PRONUNCIATION ATTITUDE INVENTORY (Elliott, 1995)

The Pronunciation Attitude Inventory (PAI) is an instrument developed by Elliott to determine subjects' concern for the acquisition of Spanish pronunciation (see Appendix A). The subjects were administered the PAI (see Table 2) in order to assess the level to which their attitude toward acquiring native / near-native pronunciation correlated with the accuracy with which the target language sounds were produced on a pronunciation test. The PAI yielded a measure ranging from 25 (negative attitude) to 125 (positive attitude). The test consisted of several positive and negative statements about the acquisition of native or near-native pronunciation in Spanish. "I like reading aloud in Spanish to practice pronunciation" is an example of a positive item. A negatively worded item is: "I would feel fake or phony if I tried to change the sound of my voice in order to sound more like a native speaker of Spanish." The choice response categories ranged from 5 = "Always or almost always true of me" to 1 = " Never or almost never true of me". Negatively worded

items were reversed in scoring before adding them to the test total. According t
Elliott (1995), another 13 positive and negative questions reflecting student use q
language strategies were embedded within the pronunciation attitude question t
control for the possibility of reactivity effect. Analysis using SPSS revealed an alph
reliability coefficient of .88 for the PAI.

Other variables that may explain differences in pronunciation accuracy wer
included in the present study per Elliott (1995). The control variables were a
follows:

Gender (GEN)

Do men or women have a better pronunciation in Spanish? Elliott assert
that "Some studies in L2 acquisition have focused on gender as an explanation fo
individual differences when learning / acquiring a L2 or a FL. Researchers (Larser
Freeman & Long, 1991) have speculated that females, when compared to males, ten
to be superior language learners. For example, some evidence suggests that female
are better than males in listening comprehension tasks (Farhady, 1982). Other studie
suggest that females tend to use more language learning strategies (Ehrman &
Oxford 1989) and more conversational input elicitation strategies (Oxford & Nyikos
1989) than do males. In a follow-up study, however, Ehrman & Oxford (1990) foun
no significant differences in language performance relating to gender. Asher an
García (1969) reported that females tended to have an initial advantage over male
when acquiring target language pronunciation.   This analysis examined the level t
which gender related to pronunciation.

Age (AGE)

This variable was used to determine the relationship between age and th
students' ability to develop native-like pronunciation.   Younger students wer
expected to acquire pronunciation of the target language with greater ease.

Spanish Mode (SPANMODE)

This variable was used to determine learning and studying Spanish
Subjects who have been studying/learning Spanish in high school, university classes
foreign travel, independent study may have a better pronunciation in Spanish.

Enjoy (ENJOY)

This variable was used to determine whether students in this sampl
enjoyed learning Spanish (that is, yes or no). Students that enjoy learning Spanis
may have better pronunciation of the target language.

Importance of Learning Spanish (SPANIMP)

This variable was used to determine how important learning Spanish wa
for the subjects. The present researcher suspected that students who thought tha
learning Spanish was important may have had better pronunciation in Spanish (tha
is, very important, important, not so important).

Spanish Skills (SPANSKILL)

This variable was used to determine how good students' skills in Spanish were compared to other students who had been exposed to the language for the same period of time. The rationale for this variable was the belief that students who read, write, and speak Spanish may have a better target language pronunciation (that is, better than most, about the same, worst than most).

Attendance (ATTEND)

This variable was used to determine how often subjects attended Spanish class. The present researcher assumed that, subjects who had better classroom attendance (that is, always, most days, not often) would have better L2 pronunciation.

Motivation (MOTIVA)

This variable was used to determine the main reasons students were studying/learning Spanish. Subjects who are more motivated may have a better pronunciation. Florez (1998, 2) asserts that "motivation for learning can influence achievement in pronunciation" (that is, interest in the culture, desire to travel, career involving the language, degree requirements, etc.).

Total Number of Years of Formal Instruction in Spanish (SPYRS)

The present study examines the strength of the relationship between the subjects' total number of years of formal instruction in Spanish and pronunciation accuracy of L2. The justification for choosing this variable was the belief that students who have more formal instruction in Spanish would receive higher scores in pronunciation.

Overall Grade Point Average for All Courses (GPA)

This variable was used to determine whether students with a high overall GPA (that is, better academic achievement) had more accurate pronunciation of the target language than did students with lower GPA's.

Travel to a Country Where the Target Language is Spoken (FT)

This variable was included to control for those subjects who had spent a brief period of time (for example, vacations, school-sponsored trips, etc.) in a Spanish-speaking country. It was believed that students who had experience listening to and speaking the target language would receive better scores in pronunciation.

Spanish-Speaking Relatives (REL)

This variable controls for subjects who have Spanish-speaking relatives (for example, grandparents). Because subjects' exposure to the language as a natural means of communication would be greater and their level of integrative motivation would be hypothesized to be significantly higher, it was believed that students who interacted with Spanish-speaking relatives would have better pronunciation of the target language.

Overall Grade for Spanish (SPGRD)

This variable was used to determine whether students with a high overall grade (for example, better academic achievement) had more accurate pronunciation of the target language than students with lower grades.

THE PRONUNCIATION PRETEST AND POSTTEST (Elliott, 1995)
ADMINISTRATION

A total of thirty-six students (twelve males and twenty-four females) from three separate sections of a introductory Spanish course were administered a pronunciation pretest/posttest (see Appendix B) designed to gauge subject pronunciation of a predetermined set of allophones in the target language. The same test was administered to the teachers of each section in order to obtain individual ratings of their pronunciation as well. Both teachers' and students' pronunciation of specific allophones were rated by a panel of three judges.

Three different classes with the same method of instruction, which does not emphasize native or near-native pronunciation as a course component, participated in the taking of the pretest and posttest. The pretest was taken in the first week of the summer session and the posttest in the next to the last week. These tests were identical. The pronunciation pretest and posttest consisted of one section called 'subject accuracy of pronunciation of written words' at discrete word level. The section consisted of 18 words that contained several allophones that are universally believed by native American speakers to be more difficult to learn. The researcher went to the different class sections and instructed the students how to take the pretest and posttest. After class the students went to The University of Texas at Arlington language laboratory, where a testing room was set aside for them. Absent students were permitted to take the test in the lab up to two days later.

RATING OF PRONUNCIATION PRETEST AND POSTTEST

Three judges were chosen to rate the pretest and posttest. They were instructed to award the subjects either a 1, 2 or 3 strictly on the basis of authenticity or how native-like the sounds were for each tested allophone: 1 for non-native pronunciation; 2 for approximate attempt; 3 for native pronunciation. The judges scores were analyzed statistically to determine their inter-rater reliability coefficients which were significant well beyond the .05 level denoting a high degree of agreement among the judges' assessments of the subjects' pronunciation. Analysis using SPSS revealed an alpha reliability coefficient of .91 for the pretest and .90 for the posttest.

CORRELATION ANALYSIS AND IMPLICATIONS

Pearson-product moment correlations were calculated to determine: (a) correlations between the independent and control variables, (b) correlations among the dependent variables, and (c) correlations among the dependent, independent, and control variables. Table 2 presents the correlations among the independent, control and dependent variables. Analysis using SPSS yielded overall split half reliability coefficients of .94 for the pretest and .95 for the posttest. The highest correlation obtained, as one would expect, showed a strong relationship between PRETOT and

PSTTOT (r = .92, p < .05). The implication is that in the beginning of the semester pronunciation ability was the most accurate predictor of end-of-the-semester pronunciation ability. The correlation between PRETOT and SPANMODE showed a significant relationship where Mode of Spanish Study (r = .47, p < .05). The implication is that subjects who spent more time studying Spanish on their own had better pronunciation of the target language. Scores on the PAI (Elliott, 1995) correlated significantly with PRETOT (r = .42, p < .05). This implies that students who were more concerned about their pronunciation in Spanish had more accurate pronunciation of the target language. The correlation between PSTTOT and SPANMODE showed a significant relationship (r = .35, p< .05). The implication is that subjects who spent more time studying Spanish on their own had better pronunciation of the target language on the pronunciation posttest. The relationship between SPNGRA and PSTTOT (r = .33, p < .05) indicates that subjects with higher end-of-semester course grades in Spanish had more accurate pronunciation of the target language. Scores on the PAI correlated significantly with ENJOYED, SPNIMP, and MOTIVA. This indicates that subjects who were more concerned about their Spanish pronunciation also tended to be more motivated, and believed that learning Spanish was important. The correlation between AGE and SPANMODE, was significant, (r = .53, p < 0.5). This implies that subjects who were older, and who had more formal instruction in Spanish, tended to have a better pronunciation. Subjects who had spent more time in Spanish-speaking countries also appeared to have better pronunciation of the target language. SPANSKILL correlated negatively with SPANYRS (r = -.32, p < .05). ATTEND correlated negatively with SPANMODE (r = -.29, p< 0.5).

MAJOR RESEARCH QUESTION

The main question under investigation in this study was whether the teachers' accents influence students' development of foreign language pronunciation? Statistical analysis showed that students in all three sections experienced an overall decline in their pronunciation ability from the beginning to the end of the semester. An ANCOVA was calculated in order to determine the effect of teacher pronunciation accuracy on the development of students' pronunciation of Spanish as a foreign language. The pronunciation posttest was the dependent variable and the pretest served as the concomitant variable. A dummy variable "CLASS" was created in order to differentiate among individual instructors of the three separate groups. The results show that the best predictor of posttest pronunciation accuracy was the pronunciation pretest. (t = 14.676, p < .00001). A t-test coefficient of t = -2.972, p < .0055 suggests subject pronunciation was significantly related to the teacher's pronunciation of the target language. That is to say, in the absence of formal phonological instruction, student pronunciation ability tends to worsen over the course of semester in direct proportion to the teacher' s ability to pronounce the target language. Students whose teachers evidenced worse target language pronunciation tended to decline over the course of the semester. On the other hand, those students whose teachers had better target language pronunciation evidenced less decline in pronunciation ability over the semester.

ANALYSIS OF MAJOR RESEARCH QUESTION
ANCOVA Analysis with CLASS as the Main Effect and the Pronunciation Pretest as the Covariate

SOURCE OF VARIATION:	B	SE B	BETA	t	SIG
PRETEST	1.11	.075	.893	14.676	.001
CLASS	-2.35	.793	-.180	-2.972	.005
CONSTANT	12.56	5.30		-2.369	.023

Significant Fndings

The present study reveals several significant findings regardin pronunciation accuracy for adult learners of Spanish. First, students who wer concerned about acquiring native or near-native pronunciation in Spanish had bette pronunciation. This corroborates Elliott (1995) who found in his study that subjects scores received on PAI were significantly related to the pronunciation posttest (r .31, p<.01) suggesting that "students who were more concerned with thei pronunciation of the target language tended to have better pronunciation at the end o the semester". Likewise, Suter (1976,249) found that students who were "mor concerned about their pronunciation" did, in fact, have better pronunciation o English as a second language. Second, subjects who spent more time studyin Spanish on their own had better pronunciation. Third, subjects who had higher fina course grades in Spanish had better end-of-the-semester pronunciation. Next, th student pronunciation ability decline experienced by the students appears to b significantly related to the teacher's pronunciation ability when pronunciation is no taught.

CONCLUSION

This study provides preliminary evidence that in the absence of forma instruction in pronunciation, students' production of target language sound decreases over the course of the semester. Consequently, teachers and curriculur designers should note that although the beneficial effects of formal phonologica instruction are still under debate, the lack of such instruction results in poore performance. Therefore, it is my recommendation that lower division languag courses be designed in such a way as to promote successful mastery of the L phonological system. We should strive not only to develop students' reading writing, and listening skills, but also to promote the acquisition of prope pronunciation.

ACKNOWLEDGEMENTS

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TABLE 1

Descriptive Statistics of Independent and Control Variables

Variables	N	Mean	StdDev	Rel
PAITOT	35	83.51	15.19	0.88
NATLANG	36	1.06	0.33	---
SPANYRS	36	1.44	0.94	----
GENDER	36	1.67	0.48	----
ENJOY	36	1.86	0.35	----
SPANMODE	36	1.89	0.67	----
SPANIMP	36	2.08	0.77	----
SPNSKILL	36	2.14	0.54	----
ATTEND	36	2.75	0.44	----
GPA	36	2.85	0.55	----
MOTIVA	36	3.25	1.83	----
SPNGRD	36	4.33	0.83	----
AGE	36	24.58	4.71	----
PSTTOT	36	52.67	10.56	0.91
PRETOT	36	63.04	8.49	0.92

TABLE 2

Correlations between all Independent and Control Variables (N = 36)

Variable	1. PAITOT	2. SPANYRS	3. GENDER	4. ENJOY	5. SPANMODE	6. SPANIMP	7. SPNSKILL	8. ATTEND	9. GPA	10. MOTIVA	11. SPNGRD	12. AGE	13. PSTTOT	14. PRETOT
1. PAITOT	1.00													
2. SPANYRS	.08	1.00												
3. GENDER	.20	-.16	1.00											
4. ENJOY	.47*	.19	.05	1.00										
5. SPANMODE	-.17	.03	-.20	-.06	1.00									
6. SPANIMP	.48*	-.28	.23	.36*	-.14	1.00								
7. SPANSKILL	.17	-.32*	-.03	.10	-.03	.03	1.00							
8. ATTEND	.25	.00	.27	-.04	-.29	.23	-.08	1.00						
9. GPA	-.04	.03	.14	-.15	.22	-.03	-.03	-.07	1.00					
10. MOTIVA	.34*	-.21	.00	-.32	-.14	.59*	-.15	.00	-.24	1.00				
11. SPNGRD	-.17	-.17	-.07	-.03	-.01	-.04	.52	.07	.16	-.24	1.00			
12. AGE	.19	.00	-.01	.05	.53*	-.02	-.12	-.08	.16	-.10	-.12	1.00		
13. PSTTOT	.30*	.21	-.14	.26	.35*	.00	.27	-.17	-.10	-.01	.33*	.21	1.00	
14. PRETOT	.42*	.24	-.19	.15	.47*	-.13	.18	-.16	-.07	-.09	.29	.27	.92*	1.00

*p < .05.

Symbolic and Notational Expressions of Central Texas Paleo-Indian Culture: Engraved Artifacts of the Gault Site

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ABSTRACT

Since the discovery of Paleo-Indian traditions researchers have struggled to accurately model the lifeway of these people. Plano, Folsom, and particularly Clovis cultures are popularly known by their distinctiv spear point designs. However, a symbolic component has been discovered in association with thes groups, revealing previously underestimated depth in behavioral expression during this period. Therefor this research will focus on behavior expressed in a collection of engraved artifacts recovered from deposi ranging temporally from Clovis to early Archaic of the Gault Site in Central Texas. The research desig augments proposed criteria with which notation and art may be distinguished from other types of sign and includes the designation of group-specific motifs in the data set. This research corpus must opera under the inference that symbolic expression manifested in the archeological record from this peri greatly enhanced the adaptive fitness of Paleo-Indian populations, enabling the marked diversity found later North American indigenous groups.

The major cultural radiation from Eurasia recognized as the 'first big-gam hunting tradition,' or Clovis, arrived in North America near the end of th Pleistocene. This movement coincided chronologically with the latter millennia o the Upper Paleolithic cultural period in Europe and the Near East and was derive from Eurasian plains hunters who developed effective lithic technologies (Hayne 1982). In Eurasia the Würmian Glacial separated the continent ecologically int warmer Mediterranean and cooler Periglacial biomes. Upper Paleolithic cultures tha seem to have had influence on Paleo-Indian populations, such as the Magdalenia and Solutrean (Boldurian 1990), developed in the former southern region. Culture like the Eastern Gravettian Complex that may have made a more direct contributio inhabited the colder northern region (Dolukhanov 1993). Similar conditions divide the northern and southern hemispheres of the North American continent at this tim as well, due primarily to the Wisconsonian Glacial (Renfrew and Bahn 1996 According to thorium dating techniques Paleo-Indian populations began settling th Americas around 12,000 years ago or earlier (Collins 1999). Clovis progenitor appear to have crossed over a land bridge in the Bering Strait connecting the tw continents, presumably following the routes of migrating game, and entered th North American interior by means of an ice-free corridor (Stanford 1979, Hayne 1982, Carlson 1991, Beck 1996).

The origins of Paleo-Indian migrations may not be best analyzed under th auspices of a parsimonious research design, especially since human behavior i necessarily complex (Chamberlin 1965, Bryan 1990, Duff et al. 1992). Curren research indicates that populations from all over Europe began migrating eastwar beginning as early as Aurignacian cultures into the Russian Plains, most likel admixing with northern Asian groups (Haynes 1982, Soffer 1993, Svoboda et a

1996). However, neither Paleo-Indian site structures nor the tool kits themselves closely resemble any single technological complex from Eurasia, but rather these cultural aspects emerged as a more generalized composite of several different styles as would be expected in a highly mobile hunting population. The use of blade technologies and bifacially flaked tools may provide a link between the Old World and the New, although it is true that lithic reduction methods differed in some areas during the late Pleistocene (Bryan 1990, Collins 1999).

Moreover, populations moving east into the North American continent most likely would have encountered areas of occupation, although interpretation of the Pre-Llano record is still controversial (Adovasio 1993). Clearly, people inhabited both North and South America as early as 30,000 years ago, prior to the Clovis migration (Wyckoff 1988). Indeed, of the three major models proposed to explain North American cultural radiations, only one has been advanced that does not presuppose a narrow time window for human entry into the New World (Whitley and Dorn 1993). Because of denial on the part of many North American archeologists crucial site data from important records, like Monte Verde or Pedra Furada in South America, lack examination (Adovasio 1993), and we therefore still do not have a clear idea of the timing of the first migrations (Meltzer 1998). Part of the confusion resulting in the aforementioned controversy stems from the mistaken interpretation of the archeological record as representative of past lifeways (Bednarik 1994).

Clovis occupations are recognized by some archeologists as the first groups to inhabit North America (Haynes 1982). The most important diagnostic artifact found to distinguish these groups from later Paleo-Indians is the unique projectile point implemented in hunting large game like mammoth and bison (Howard 1990). The diagnostic points themselves were knapped from large bifacial stone preforms (Collins 1998) in a reduction sequence first published by Errett Callahan (Nami 1991). The end product finds many analogues in Paleolithic Europe but, unlike the blade-based point manufacture of the Solutrean (Bryan 1990), this technique involves a great deal of preparation and retouch. The resulting point is usually long and lanceolate in morphology with bifacial fluting from the notched base up to the mid-point of the long axis (Bradley 1993). Fluting, as shown in Figure 1, is a common technique used in lithic knapping to thin the base of projectile points for hafting purposes (Frison 1993). Other tools used to process both animal and plant products include a variety of bifacial scrapers, blades, and flake tools (Mallouf 1989, Collins 1990).
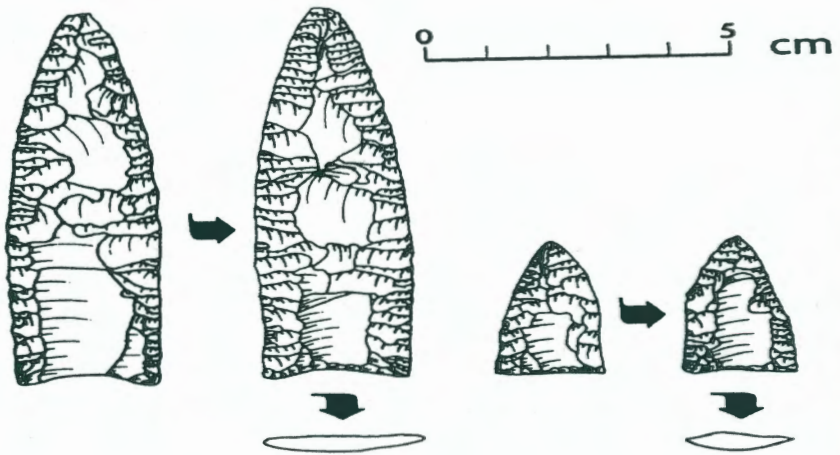
FIGURE 1

Previous research efforts emphasized homogeneity among Clovis tool kits, yet current research indicates regional variation in tool types existed and has been determined in assemblages from North and South America (Haynes 1982, Dincauze 1993). Although the aggregate number of Clovis kill sites discovered is significantly fewer than would be expected in widespread large game hunting populations (Meltzer 1993), it is true that most occupation horizons of this age are associated with the remains of megafauna, such as mammoth, bison antiquus, camel, and horse (Haynes 1993). It makes perfect sense that smaller, well-dispersed butchery sites were the norm for a highly mobile hunter-gatherer population with smaller group sizes. C. Vance Haynes (1993) has also asserted that Clovis progenitors left dry, arid conditions in Eurasia only to arrive in North America during a drought, encountering fewer water sources temporarily and thus enduring increased environmental stress. However, it is possible that large numbers of widely dispersed bands may have coalesced seasonally in areas of secure, abundant water sources (Collins 1999). The Clovis technocomplex also contains a symbolic component that is evidenced in the early Paleo-Indian records of three different sites in New Mexico and Texas (Hester, J. et al. 1976, Collins et al. 1993, and Collins 1998, respectively). In each case behavioral expression was manifested in mobiliar engravings that will be discussed at length later.

The end of the Pleistocene heralded the extinction of several species of megafauna, and in what is now the western United States Clovis fluted point technologies evolved into Folsom (Haynes 1993). The most observable difference between the two types of lithic manufacture is the emphasis in the latter complex on fluting that runs the entire length of the projectile point. The reduction process in the latter strategy increased in complexity and exhibits a tendency to flute preforms early in the manufacturing process, sometimes discarding the biface without actually creating a point (Bradley 1993). Therefore, the archeological record of the transition to Folsom manufacture evidences a cognitive change in design that may have changed according to differences in prey size. By this period bison were the only

large game left in North America, and it is possible that decreased robusticity in point manufacture may have been adaptive in the transition to small game hunting (Haynes 1993). Research has also given credence to the inference that cultural adaptations would have operated differently in montane regions where subsistence strategies necessarily differed from the plains regions (Frison 1993, Davis 1993). For some reason fluted point manufacture ceased about 10,000 years ago in the Eastern United States, coinciding with early Folsom times (Dincauze 1993). Other biface tools continued to resemble earlier Clovis design, but the symbolic component of the record became more salient beginning in this period (Collins 1999).

Before 9,000 years ago the Folsom tradition itself began to specialize into different regional variants that collectively made up the Plano megacomplex. Extrapolating from Frison's description of late Paleo-Indian technologies, it appears that the only unifying characteristic in local manufacture was the implementation of insert technology in point hafting (Bradley 1993). This type of basal thinning in points is assumed to have enhanced the attachment of more gracile spear points. Pressure-flaking appears to be the preferred mode of tool knapping throughout this period as well, accompanied by a flaring of the point between one-third and two-thirds of the length from the tip, as is also documented by Bradley (1993). This technique may have evolved to prevent the projectile point from slipping upon impact with prey. The same analysis also indicates that percussion flaking became much finer and more regular throughout the later Paleo-Indian period, and that grinding was increasingly employed as a sharpening method. In most areas of the western United States these peoples focused on much smaller game, such as deer, rabbits, and hare (Davis 1993). As early as 10,000 years ago in some areas of the Americas the Archaic period began, overlapping the Paleo-Indian period in some areas (Beck 1996). This more recent period of technological advancements included thermal altering of lithics to enhance tool manufacture and the initial domestication of certain plant species by 5,000 years ago (Wenke 1990). The chronological typology of point manufacture is visually displayed in Figure 2 below.

FIGURE 2

Symbolically, Paleo-Indian cultures also find most probable ancestors in Eurasian populations. Engravings similar to the types observed for the purposes of this research may have evolved from Aurignacian cultures in Europe (Marshack

1972). Research indicates that notation and iconographic symbolic expression were prevalent and widespread throughout Europe (Chase 1991, Byers 1994) and the Russian Plain in the Paleolithic (Marshack 1979, Haynes 1982, Priuli 1995). Motifs like the zig-zags found in Middle Paleolithic contexts in Bacho Kiro, Bulgaria appear later in Magdalenian markings from France and Belgium (Marshack 1997) and again became apparent in complex Paleo-Indian motifs that resemble modern Southwest design. Radiating motifs discovered in maps drawn by hunters of the Russian Plains as early as the Lower Paleolithic at sites like Stránská skalá Czechoslovakia, also reappear in North American symbolic expression (Bednarik1995). The majority of engravings observed also incorporate an important motif found repeatedly in the record of the Russian Plains. Grid-like motifs referred to by Marshack (1979) as 'hatches' are also common in the data set. The diversity of motifs apparent in the record of one Central Texas site indicates varied cultural influences that enhanced adaptive fitness for their Paleolithic predecessors (Duff et al. 1992), whether acquired through contact or diffusion (Gamble 1982, Haynes 1982).

The Gault Site, a complexly stratified prehistoric valley occupation zone has been the seasonal home of modern people since the Pleistocene. Historic excavations, in addition to profit-driven artifact collection, formerly concentrated their efforts on more recent deposits of the prehistoric period (Hester, T. et al. 1992) but later controlled excavations yielded important revelations about the behavior of Paleo-Indian cultures (Collins 1998). Since this area lies along the valley wall of a shoulder of the Edwards Plateau, important sources of high quality lithic material could be exploited in proximity to needed water sources. The early Clovis period of this record implies that a drought occurred in the area (Haynes 1982), and that the water table remained low in the area for some time (Collins 1999). Therefore Buttermilk Creek to the immediate north provided both a crucial resource and a defensible natural boundary. Not only here, but in all areas of the Llano Estacado region of the Southern Plains, the water was drying up and easily accessible only to proboscideans who were able to create small natural wells just as elephants do today on the African savanna. It is thus reasonable to assume that an intimate knowledge of the local environment, including the behavior of animals relied upon for subsistence, would increase the chances for populations to flourish even in non native environments. Early Paleo-Indian horizons are associated with disarticulated portions of mammoth remains (Lundelius 1998), which seem to confirm the integral roles large game played in the lives of humans. In addition, use-wear analyses conducted by members of the Texas Archeological Research Laboratory on both serrate and non-denticulate blade forms confirmed that these tools were used on substrates that are high in silicon, like plants (Inman and Hudler 1998).

This diversity in subsistence strategies was matched by a need for visual symbolic expression, which only became apparent later in the Paleo-Indian records of other Plains sites (Collins 1999). The collection of symbolic engravings recovered from the Gault Site represents a tradition that is possibly distinct from tool manufacture. Stratigraphic association of soil types that comprise the surface varnish bear out the inference that both utilitarian and artistic engraving persisted through the Paleo-Indian period and into the early Archaic. Unfortunately, no pre-

Archaic features have as yet been discovered, due in part to slump from valley wall sediments. Another more significant taphonomic problem is that of groundwater corrosion. As the water table rose later in the Holocene, the high iron content resulted in the dissolution of many organic remains commonly used in dating, such as bone and wood charcoal (Collins 1999). Many of the engravings retained in the collection lack reliable provenience data, and it became necessary for us to use diagnostic artifacts, soil matrices, and depth measurements of previous excavations to ascertain an accurate relative typology of motifs.

Since human behavior is variable and multifaceted, we have chosen to focus on constructs not limited to anthropological theory while delimiting the research design. Central to the analysis of complex problem solving is the method of multiple working hypotheses (Chamberlin 1965), which emphasizes the necessity to explore all possible alternative lines of inquiry. By acknowledging that many phenomena occur for more than one reason researchers gain a clearer picture of the continual processes involved in any type of change. Therefore we must infer that a variety of factors were involved in the decision to use mobiliar engravings. The motifs apparent in the collection are heterogeneous and convey both other-directed and self-directed types of communication behaviors. Some motifs could be said to be the basis for notation and writing, while others are iconographic signs. This makes sense because human beings tend to perceive in a functional sense that emphasizes the use of acceptable resources (Heft 1989). People who already have the burden of maintaining cognitive maps of resources in the areas they regularly inhabit would therefore be unlikely to create a system of arbitrary rules to govern the expression of ideas, as some researchers have assumed (Byers 1994). Rather, these people would have used functional categories to define their world. The concept of taskonomy relates that people organize concepts and materials in functional groups that may or may not relate to existing linguistic categorization (Dougherty and Keller 1982). In fact, many of the processes at work in symbolic behaviors are not capable of being identified by conscious labeling, although they do constitute goal-oriented efforts like communication. Because portions of the archeological record are subject to selective preservation conditions, it must be remembered that we are examining the process of cultural evolution in a fashion skewed toward materials that are difficult to weather or decay (Bednarik 1994). We cannot assume that the artifacts still identifiable in the record must be categorized in discrete packages like the stratigraphy of the soil matrix around them. Artifacts such as these are not unlike the personal items people carry today.

Since the criteria presented in the analyses of some researchers have been vaguely stated (Chase 1991), clarification and supplementation of these criteria may help provide a framework for the study of archeological symbolism. Philip Chase (1991) has put forward three general aspects of artifact manufacture that typify symbolic behavior. Like Sackett and Wiessner in the past, he declares the use of style to reflect expression. Like Mellars (1989), he also agrees that standardization in tool manufacture and the 'imposition of arbitrary form' on material substrates convey symbolic production choices. Unfortunately, the five criteria that I originally developed to judge a body of early Paleolithic artifacts (Robertson and Harrold 1998) do not provide much more insight into the essence of artifact interpretation.

They do, however, provide a clearer framework by which the symbolic content of an artifact can be judged for different types of objects.

First, symbolic artifacts must convey some form of production or cultural choice. Production choices are exemplified most easily by utilitarian objects like incised tools, while cultural strategies may involve nonutilitarian objects like plaque stones that are inscribed with single or multiple motifs. Second, symbolism should exhibit both isochrestic and adjunct style. Isochrestic style may add decoration to objects but does not have to be intentional (Duff et al. 1994); this style needs only to display choices that differ cross-culturally. On the other hand, adjunct style typifies utilitarian symbolic artifacts because markings or other modifications are normally applied to objects that are regularly used. The latter form is always intentional and conveys manufacturing choices that are environmentally adapted. In addition, artifacts must exhibit pairing, standardization, or repetition in either production of additional decoration. Objects must also be found in contexts that clearly indicate human cultural occupations. In the absence of human remains we have chosen to rely on diagnostic cultural artifacts that yield insights about their creators. Finally, the objects must not easily conform to a hypothesis other than intentional human modification. The original data set consisted of eighty-five possibly engraved artifacts that were loosely categorized into those that were definitely, possibly, or probably not symbolic (Collins 1999). Of these, fifty-three were catalogued as part of the incised stone collection, and in analysis I accepted forty-nine of them as examples of Paleo-Indian and Archaic symbolic engravings. This may be declared an absolutely historic find that was ignored by the first excavation of this site (Hester, T. et al. 1992). Only two other sites in the Southwest have yielded symbolic evidence from such early contexts (Collins 1999).

The first specimen could not be examined directly because someone involved in the excavations had apparently stolen it. However, Figure 3 clearly shows the fine engraving in this complex and highly organized pattern. It is possible that the sets of parallel diagonal lines along the lower margin were the accumulation of multiple occupations. We cannot be completely certain that all the incisions were made with the same point type without the actual artifact, but it is apparent that the stone was broken after the motif was incised. At least six other specimens include similar complex overlapping motifs. For example, Specimen 15 combines sets of parallel line pairs interspersed by zigzag designs, as is also the case in Specimen 19. However, of the two, the former is more complete and shows a similar design engraved horizontally across the lower portion of the face. These overlapping motifs may have served an important identification role for groups occupying the site, and would be especially crucial at times when multiple groups camped in the same locations. Human modification of local environments provided a clear method for identifying favorable campsite locations that did not require the conscious acquisition of new geographical data that must be incorporated into the perceptual sets of nomadic people. They only had to recognize the signs of previous occupation when they returned. Alternatively, it is also possible that these motifs are analogous to symbolically engraved plaques from the European Paleolithic record that some researchers consider being the foundations of language and scientific constructs (Marshack 1991). Intricate designs such as these may also be the result of group-

specific artistic expression like the colorful pottery and blanket designs of later Native Americans.

FIGURE 3

Specimen 2 appears to differ from the first category in both substrate and style. The previous group of markings was engraved on relatively soft limestone plaques, but the intersecting lines in this category were incised on the cortical flakes of chert commonly used to knap biface tools and points. In this case the lines were apparently placed after the flake was removed from a larger core stone. This artifact was sold to a gentleman interested in the site by a collector, but the widely spaced intersecting lines that make up the basis for the design also appear in other flakes found in the collection. Specimens 29 and 38 both exhibited a more simplified version of this pattern. These specimens are also comparable to a motif recovered from early Paleo-Indian contexts at the nearby Wilson-Leonard site (Collins et al. 1991). Moreover, microscopic examination of the soil varnish enabled a reconstruction of the relative relationship between these and another related group of cortical flakes incised with a similar motif that includes Specimens 51 and 52. The younger group appears late Paleo-Indian in age, and the lines are much closer-set parallel incisions without any intersecting lines.

The third category of motifs includes iconography and schematic representation of natural concepts. Specimen 3 is the best example and is artistically reconstructed in Figure 4. This stone shows a scenic hunting motif in which spear points project from the hide of a bovid prey animal. This kind of imagery was common among European hunter-gatherers of the Pleistocene (Priuli 1995). One interesting feature of this artifact is the fact that both faces are incised. The second face has a similar but unrefined design that may be interpreted as a mistake in the picture that could not be altered or covered up. In fact, this object was referred to as the 'wheatstone' (Collins 1999) until the connection to older cultures was

recognized. Specimen 5, which also belongs in this group, closely resembles th
types of schematic iconographs that appeared on the Russian Plains during th
Paleolithic (Marshack 1979). The schematic rendition on the main face of thi
artifact is of a small prey animal similar to a fox. Short, finely engraved decorativ
lines contribute to the intricacy of this mobiliar design. Like the previous specimen
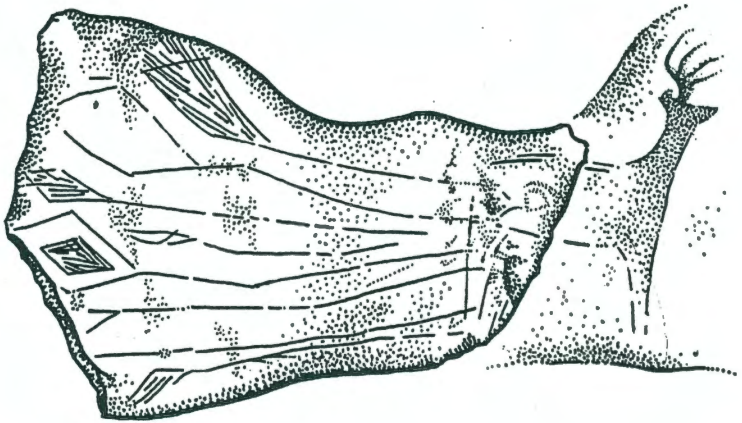both faces of the stone were incised, and the second face appears unfinished.

FIGURE 4

The final major category involves the use of both accumulate
informational motifs and geometric designs such as grids. The type specimen is b
far the most complex, as shown in Figure 5, and may represent an early form o
cartography. Specimen 12 is a unique complex of motifs that is expected to hav
come from contexts as early as Clovis judging from the soil varnish and ferrous hu
of the stone. The sections of the design are almost completely separated from on
another by two large concentric arcs that are recognizable topographic features o
this area. If we consider the design a map that is oriented correctly in the illustratio
below, the inferior or lowermost of these arcs resembles the sweep of the valley wal
The superior or upper arc appears to follow Buttermilk Creek to the north. In thi
instance we do not currently have a 'rosetta stone' by which to decipher the meanin
of each section, as researchers did when the meaning of the Taï calendrical plaqu
became apparent (Marshack 1991). This category, not unlike the type specimen, i
the largest and least homogeneous. Cores, flakes, and limestone plaques are al
included in this grouping and are united by the fact that multiple point types ar
assumed to mean that the final design emerges as an accumulation of differen
engravers' ideas. Conversely, a single person could have engraved some of th
objects included here, like the grid patterns found on Specimen 9 and more simpl
on Specimens 21 and 32. Specimen 21 is especially interesting because neither o

the faces is incised although they are smoother than the edge, which was deeply incised with a four-by-four line grid.

Standard Paleolithic motifs, such as radiating and meandering motifs are also represented. The cores included in this final grouping, like Specimens 20 and 33, are unlike most of the other designs because the incisions seem to have been made only for the sake of marking the surface, giving a random appearance. This makes sense if the person engraving these cores intended to reuse them to knap more tools, and is supported by the existence of cortical flakes that would also display this patterning if they were taken off these cores. Some of the accumulated motifs also have a random appearance like those in Specimen 8. Though visually different, all of these motifs find earlier examples in Eastern Europe and the Russian Plains (Marshack 1979, Bednarik 1995). Other motifs reflect much more organized thought using symmetrical design as an expression as is the case in Specimen 24. This cortical flake is shaped like a leaf, and the engravings are lines that radiate upward at the top and downward at the bottom from a central axis line like the veins in a leaf's surface. Similar instances of artistic memory can be found in European bead designs that mimic the contours of shells (Marshack 1989). In many cases the stones have become encrusted with calcium carbonate, which obscures crucial aspects of design if the artifacts are not properly cleaned.
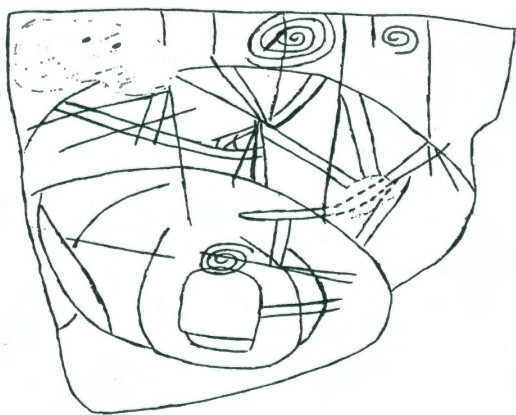
FIGURE 5

This analysis has implications for major debates in archeology, not only because we have chosen particular paradigms that correspond to the patterning of the data rather than the rule of contemporary theory, but also because the data set brings to light revelations about the behavior of early North American people. We have chosen to accept the thorium dates now put forth to correct the more unreliably calibrated dates of wood charcoal (Taylor et al. 1996). Furthermore, we have deposed the mythology of a single homogeneous culture that began from a tiny founding population by following the lines of inquiry leading to seasonally coalescent band hypotheses. The idea that multiple groups used the site

contemporaneously is just as reasonable as a paradigm involving separate occupations, especially if the dehydration stress of a drought was salient. Therefore the recognition of group-specific motif constellations confirms a need for visual communication aids that would be rendered unnecessary in an environment in which isolation was the norm. Whether language was a factor in the communication processes of Paleo-Indians is uncertain, but we do know that visually symbolic forms of expression persisted. Obvious also is the fact that the different motifs conveyed in the record of engraved stones contain symbols that would have been identifiable to populations familiar with designs found in varying regions of Eurasia. Tracing particular engravings back to contributing cultures may not be possible due to complexity of cultural diffusion, usually in the forms of trade and idea exchange, and reinvention of phenomena perception. Just like the expression of people today, different symbols have relative meanings to different individuals and groups.

Figure 1 was adapted from Goebel et al. 1991
Figure 2 was adapted from Bradley 1993. The point designs are a) Clovis, b)Folsom, c)Mill-Iron, d) Agate Basin, e) Hell Gap, f) Alberta, g)Alberta/Cody I, h) Alberta/Cody II, i) Scottsbluff, j) Eden, and k) Allen
Figures 3-5 are part of the record for the engraved stone collection at the Texas Archeological Research Lab

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A Comparative Analysis of ESL/BE Endorsement/Certification Programs in Three North Texas School Districts

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ABSTRACT

English as a Second Language (ESL) and Bilingual Education (BE) programs have been implemented b State law in the school districts to better serve students that are identified as limited-English-proficie (LEP). The purpose of this research project is to compare three North Texas school districts to determir which district comes closest to staffing qualified ESL/BE teachers in relation to the school's LE population and what methods are used by the districts to obtain endorsed/certified ESL/BE teachers. Th data will be collected through a 12-question survey sent to the participating school districts. The resul will examine how one of the three schools is managing the gap between the number of teachers neede related to the high number of LEP students currently enrolled in the school districts.

INTRODUCTION

Immigration has had such a profound effect on our society....and nowher is that impact more obvious than in our schools (M. Frielander, 1991). Immigran and the children of immigrants represent a rising share of the nation's population Over 90% of recent immigrants come from non-English speaking countrie: Although official estimates vary, more than 7.5 million school-aged children livin in the United States have a home language other than English (NABE New, 1991 By the year 2000, it is estimated that there will be in excess of 10 million schoo aged children in this category, an increase of 35%. Diversity in American societ will continue to grow well into the twenty-first century. In five states in th Southwest, minority children will become the majority of the student population b the year 2000 (Gonzales, 1993). Therefore, schools nation-wide are increasingl receiving students that are not English proficient. In addition to the need to lear English, many immigrant students also need extra academic instruction, due to th fact that their schooling in their home country may have been limited.

The issue of educating students that speak a language other than English ha become a significant factor in today's schools. The rationale for implementin special language programs in school districts was to provide LEP students with a education equivalent to that of their native English speaking counterparts so that LE students, too, could become productive, educated, and well-informed citizen Special language programs have evolved through a series of legislative acts at bot the federal and state levels to meet the needs of LEP students. For example, Titl VII of the Elementary and Secondary Act of 1965, which was funded by the federa government, aimed to teach English to LEP children. The U.S. Supreme Court' 1974 case of Lau v. Nichols, determined the first legal precedent requiring schools t help LEP students to understand the curriculum. The Supreme Court ruled tha "identical education" did not translate into "equal education" when dealing with LE students. The Supreme Court based its decision on the 1964 Civil Rights law tha

barred discrimination on the basis of national origin. The Department of Education's Office of Civil Rights (OCR) created a task force to decide the best means to provide "equal education" to LEP students. The OCR assembled regulations called the Lau Remedies, which state that any school district in the United States that receives federal funding and has enrolled 15 students that are identified as LEP, must offer appropriate instruction in both bilingual and special language programs. If school districts are unable to comply, OCR turns the case over to the U.S. Department of Justice for prosecution as a civil rights violation (Shokraii & Youssef, 1998).

Today the goal of Texas' ESL/BE program is to provide the same education as that established by the 67th state legislature in 1981:

> Bilingual education or special language programs as defined by this state Act shall be taught in the public schools only for the purpose of assisting the learning ability of limited English proficiency students and to enhance the English language (Acts 1981, 67th Leg., Sec 2).

In order to accomplish the goal each district shall:
1) Identify limited English proficient students based on criteria established by the State Board of Education.
2) Provide special language programs, i.e., bilingual and ESL programs as integral parts of the regular program, and
3) Seek certified teaching personnel to ensure that limited English proficient students are afforded full opportunity to master the essential elements required by Chapter 75 (TAC, 19,II, Ch 89A:1).

In compliance with the State law, the local area school districts are to provide two programs to assist students that are identified as limited English proficient (LEP). These programs are:

- English as a Second Language (ESL), a program of specialized instruction in English provided to students who do not receive bilingual education and to students whose parents refuse dual-language instruction (Gonzales, 1996) and,
- Bilingual education (BE), which is a transitional program of full-time dual-language instruction including instruction in the home language, and English as a Second Language (ESL) for a minimum of 45 minutes daily, provided to students in any language classification for which there are 20 or more students enrolled in the same grade level in a district.

In some situations a combination of programs and instructional practices may be recommended by the student's Language Proficiency Assessment Committee (LPAC), which makes instructional placement decisions for the student. However, parental permission is required before the student can enter any of the programs listed above.

There are different types of program and strategy designs based on the needs of the LEP student. Many of these programs listed below are general methods to assist in educating these students:

- The Two-Way Bilingual program is an integrated model that enables learners from linguistically and culturally diverse communities, as well as

learners who come from homes where only English is used, to learn each other's languages and cultures.

- The Maintenance Bilingual program uses content-subject instruction, in both the home language and English, to achieve the goal of bilingualism and biculturalism.

- In English as a Second Language (ESL), students are instructed in English language skills for specific periods of time with a focus on grammar, vocabulary, and communication. Students are taught separately from fluent English-speaking children. Students at the secondary level are taught in more English-intensive classrooms. ESL programs technically are not known as "bilingual" programs.

- In Content–Based ESL/Structured Immersion, students are instructed through English with emphasis on acquiring English language proficiency through studying academic content, using simplified vocabulary and grammatical structures.

- In Sheltered Instruction, students are instructed in all subjects in English at a level modified to their level of proficiency (Shokraii & Youssef, 1998).

The local area school districts such as Fort Worth and Arlington have established their own variations of ESL/BE programs based on other models implemented by cities nation wide:

- The International Newcomer Academy is a one-semester to one-year program designed to orient new beginning level immigrant students to U.S. schools and to develop basic communicative and academic skills in English.

- The Newcomer Career Academy is a special four-year program for high school preliterate/undereducated/overage students which offers career focused ESL, basic content area subjects, and work world courses and experiences—with high school graduation/GED and/or job connection as the goal.

- The Language Center Program, a school within a school design for recent arrivals to United States who speak no English upon entry—focuses on English language development emphasizing both basic communicative and academic skills in English.

- The Transition ESL Program, a program at each grade level, provides special English and reading instruction which allows students to take content area subjects in "non-sheltered" settings while still receiving special language support (Appendix A).

Bilingual education and ESL programs are interrelated due to the fact that in an ESL program, often provided where children of diverse language backgrounds attend school together, typically the home languages of the children are not used in class. In a bilingual education program, where children of the same home language background can be grouped together, that home language is used in class and, in

addition, the program includes an English-language-teaching component. English language proficiency is a common objective of both program types (TESOL 1995).

The need for qualified teachers in the state of Texas, including ESL/BE teachers, will continue to be a priority for districts with diverse populations. The Association of School, College and University Staffing, INC (ASCUS) conducted a nationwide survey of teacher placement officers in 1988. The results showed that the biggest teacher shortages existed in ESL/BE education (Gonzales, 1993). In Texas teachers with bilingual and ESL education endorsements are in high demand. According to guidelines from the international professional organization TESOL (Teachers of English to Speakers of Other Languages) and CAL (Center for Applied Linguistics), teachers who are professionally prepared to assist students that are both linguistically and culturally diverse are prepared in both theory and methodology of ESL, second language acquisition and bilingual education. The following are strategies that qualified teachers are prepared in:

- Use of age appropriate and grade appropriate subject matter in students' dominant language (TESOL, 1995).

- Use of appropriate assessment for students age, grade, and culture in dominant language (TESOL, 1995).

- Use of culturally appropriate diagnostic and assessment techniques as tools for identifying the strengths and needs of students (CAL, 1999).

- Recognition and use of different teaching techniques to enable students to learn through different approaches and learning styles (CAL, 1999).

- Cultural sensitivity (CAL, 1999).

- Evaluation of each student as an individual to identify strengths as well as needs (CAL, 1999).

The State of Texas has also set its own requirements for ESL/BE teachers to ensure competence in the education of LEP students. Certification as a qualified ESL/BE instructor is given after satisfactorily passing the appropriate ExCET examination.

Due to the rising growth of the immigrant population in the United States, public schools are increasingly receiving students who are either limited or non-English proficient. Texas is one of five states experiencing this trend. The United States Department of Education, National Center for Education Statistics Schools and Staffing Survey completed statistical data for the 1993-94 school year, which calculated the percentages of public schools in the United States that enrolled students identified as limited English proficient, while providing bilingual or ESL programs, and found it difficult or impossible to fill teacher vacancies. In the state of Texas the percentage of schools providing ESL/BE education programs and the vacancies the schools are experiencing in these classrooms are listed below:

- 77.6% of schools in the state of Texas have identified enrolling LEP students;
- 32.1% of schools in the state of Texas provide a bilingual program;

- 71.0% of schools in the state of Texas provide an ESL program;
- 74.5% of schools in the state of Texas provide both a BE or ESL program;
- 40.1% of schools in the state of Texas found BE/ESL teacher vacancie either difficult or impossible to fill.

According to data collected from TEA (Texas Education Agency) for the 1997-9 school year, the total number of teachers that are teaching in both an ESL/Bl classroom in the state of Texas and not holding a target certificate is in the cha below.

Classroom	Total number Teaching	Number of Teachers Holding a Target Certificate	Number of Teachers Not Holding a Target Certificate but Teaching in an ESL/BE Classroom
Bilingual Education	8,484	7,016	1,468
English as a Second Language	6,938	5,233	1,705

Therefore, the data indicates there is a shortage of qualified ESL/B teachers teaching statewide. There are a variety of training programs made availabl for teachers to become endorsed/certified to teach in an ESL/BE classroom. Som school districts provide a Tuition Assistance Program in which the school distric will pay for the teachers to be trained through the twelve hour ESL endorsemen classes provided by the university. Other districts can provide various trainin programs within their district as well as pay for expenses for their teachers to atten the university.

The difference between a certification and endorsement is: a certification i a particular field is acquired as part of a bachelor's degree and teaching certificate An endorsement is added to a certificate after a degree has been earned, and allows teacher to teach in a particular field just as a certification (Fort Worth ISD, 1999).

REVIEW OF LITERATURE
Historical Overview of Bilingual Education and English as a Second Language
Prior to the twentieth century, bilingualism and bilingual education wer accepted facts of American life (Crawford, 1989). In the late 1800's bilingua instruction was widely available in the United States. In fact, many incentives wer provided for people to learn English (Behuniak, Hubert, LaFontaine & Nearine 1988). Learning English allowed non-English speakers to integrate into America society and lead better lives. However, English did not replace the immigrant' native language, and bilingualism remained widely accepted.

Due to World War I, the positive attitude that was once held in the United States toward bilingualism and bilingual education disappeared. Americans grew hostile toward non-English speakers by imposing laws to punish anyone who did not speak English (Behuniak, Hubert, LaFontaine & Nearine, 1988). Some schools were encouraged not to teach any kind of language except English. In fact, in the state of Texas students and teachers were prohibited by state law from using any language other than English on school property. Students were punished and teachers were subject to fines, cancellation of their teaching certificates, and possibly even removal from their teaching position (Kidwell & Perez, 1995).

While the laws were repealed by judges who deemed the prohibition unconstitutional, this antagonistic sentiment continued in the United States until the beginning of World War II. During the course of the war, Americans found limited value in bilingualism when they communicated with other countries. (Lessow-Hurley, 1990). However, the military began to prize bilingual service men who could translate messages into other languages. For example, the American Marines who spoke Navaho were used to encode messages that could not be broken by the Japanese (Lessow-Hurley, 1990). Although this allowed for the United States slowly to re-evaluate bilingualism, it still took some years before it gained official recognition from the federal legislation.

The National Defense Act of 1958, while focusing on educating servicemen who had fought during the war, also included a clause that supported foreign language instruction. The government started to support financially foreign language teaching through grants for second language materials (Crawford, 1989). Even though this clause did not endorse bilingual education, it certainly helped support the re-emergence of bilingual education in the United States.

During the Cuban Revolution of 1959 many Cuban refugees fled to Miami Florida, which ultimately resulted in the formation of bilingual programs. The Cuban migrants initially formed private Spanish speaking schools with the hopes of returning to Cuba after the political climate calmed down. However, they soon realized that such an event was unlikely to occur, so they pressured the city to provide bilingual classes for their children (Williams, 1997). Coral Way Elementary School launched a successful bilingual program and included trained Cuban teachers to maintain the Spanish language of the Cuban children (Ovando & Collier, 1985). Although this model proved to be successful in training bilingual students, few people took notice of the program's accomplishments.

In 1968 the Bilingual Education Act was included in the Title VII Elementary and Secondary Act (1965) as an amendment. Its passage signified that, for the first time, the rights of limited-English, minority students were being addressed. Passage of prior legislation (The Civil Rights Act of 1964) and a pivotal Supreme Court case (Brown vs The Board of Education) paved the way for this important legislation. Unfortunately, the Bilingual Education Act was too general and the only way to achieve parity in education for minority students was by appealing to the courts. The famous court case Lau v. Nichols provided further impetus toward increasing bilingual education in the public schools. In this court case, the U.S. Supreme Court ruled against the San Francisco school district for neglecting to address the needs of 1,800 students of Chinese ancestry. The verdict

stated that merely providing the same facilities and resources for the minorit language students did not reflect equal treatment when the students were denie access to meaningful education because of their inability to understand the languag (Lessow-Hurley, 1990). Consequently, it was determined that LEP students wer entitled to special assistance that would provide them with the skills to be able participate equally in the schools (Crawford, 1992).

The Secretary of Education, Terrell Bell, authored the Lau Remedies 1975, which created stricter guidelines for bilingual education programs (Crawfor 1989). The guidelines explained how to identify and assist LEP students, the prop methodology for students at various proficiency levels, established criteria f determining whether to mainstream a student to a regular classroom and last provided professional qualifications for teachers.

As a result of Senate Bill 477 Bilingual Education and Special Languag Programs was passed by the 67th Texas Legislature in 1981. It made "...publ schools responsible for providing full opportunity for all students to becom competent in speaking, reading, writing, and comprehending the English languag (State Policy Sec.21.451, p. 2138). A critical component of this bill is a requireme that the "State Board of Education, through the Commission on Standards for t Teaching Profession, and the Coordinating Board, Texas College and Universi System, shall develop a comprehensive plan for meeting the teacher supply nee created by the programs outlined in this subchapter (State Policy Sec.21.451, 2143). In the fall of 1981, the Texas Education Agency (TEA) collected data ascertain whether the state of Texas was meeting the needs of LEP students. Th requirement was mandated by the Texas Legislature. TEA determined that the sta of Texas had 6,626 certified bilingual teachers, 1,166 bilingual teachers on perm and 4,061 ESL teachers in relation to their 148,152 LEP population. Therefore, t findings of TEA concluded that the state of Texas had shortages in the number certified/permit bilingual education teachers and ESL teachers needed for staffir these programs.

Of the forty-three million students that attend public school, almost thr million are non-English speaking students (Hornblower, 1995). Even though th number may appear minor when compared to the whole population of students, thes students are not equally distributed among the total number. In some scho districts, non-native English speakers constitute twenty-five to sixty percent of t entire school population (Porter, 1990). Additionally one in six public scho teachers has a non-native speaker in his/her classroom (Porter, 1990). Thes statistics reinforce the need for teachers that are either endorsed/certified in Englis as a Second Language or Bilingual Education programs.

PURPOSE

The purpose of this research project is to compare three North Texas school distric to determine which district is more capable of handling its ESL/BE teachers i relation to student LEP population. The following data was collected:

* The number of teachers ESL/BE endorsed at each district;
* The number of LEP students each district has enrolled;
* The total amount of money spent on ESL/BE programs for each district.

RESEARCH QUESTIONS

What programs have the districts developed to meet the shortage of ESL/BE teachers?

RESEARCH HYPOTHESIS

The district with the largest student LEP population will provide more training programs and more ESL/BE endorsed/certified teachers to manage the gap between the number of students in relation to the number of trained teachers.

The district which is allotted more money by the state to put in an ESL or BE program will provide sufficient number of teachers in relation to the district's LEP population.

METHODOLOGY

Participants

This study was conducted in cooperation with Fort Worth, Arlington and Grand Prairie Independent School Districts.

Measurement Tools

A 12-item questionnaire was developed for the school districts to determine the effectiveness of each school district's ESL/BE training programs for teachers. The survey consisted of questions in the following areas: the size of each school district's student LEP population, the number of teachers that are endorsed/certified and are teaching in an ESL/BE classroom, the various types of training programs the district has made available to endorse/certify teachers in an ESL/BE program and other questions to fulfill the research project (Appendix B). All questions were based on data from the 1997-98 school year.

Procedure

The survey was developed to better critique the types of ESL/BE training programs that are made available to teachers by the district. Several steps were involved before the survey was sent.

- The survey was evaluated and edited by two researchers in the field.
- Before the survey was sent all participants were contacted and fax numbers were obtained.
- Each survey was sent via fax with a fax coversheet and letter explaining the research project and the reasons for the needed information with the survey attached (Appendix C).
- Three days after the survey was sent to the participating districts, a follow-up letter was sent to indicate a date for the survey to be returned (Appendix D).

- Lastly, the data was analyzed and the results displayed.

Articles from various professional journals and the Internet were key in collecting and analyzing information relating to certain aspects of ESL/BE programs. Most of the articles contained background information, historical overviews and political aspects that helped to fully document the existence and the evolution of these programs.

RESULTS

Figure 1
**LEP Population per School District**
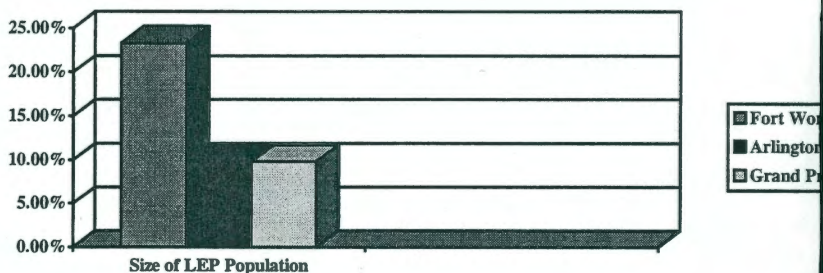
Twenty-three percent (n=17,937) out of 76,901 students are identified as LEP in the Fort Worth Independent School District. Ten percent (n=5,375) out of 54,591 students are identified as LEP in the Arlington Independent School District. Nine percent (n=1,869) out of 18,810 students are identified as LEP in the Grand Prairie Independent School District.

Figure 2

**Number of ESL/BE Teachers per School District**
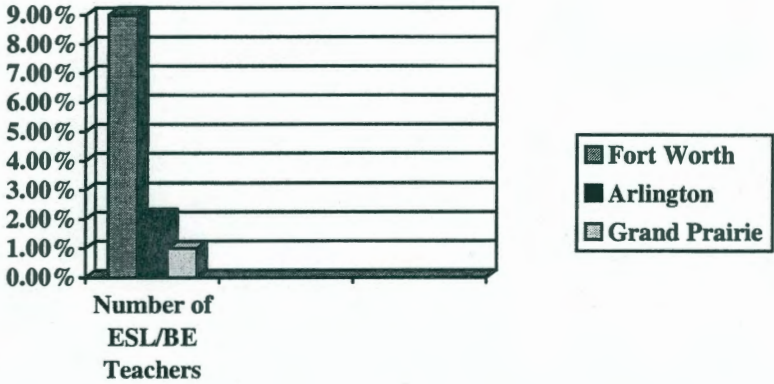
Nine percent (n=404) of 4,313 teachers are teaching in an ESL/BE classroom in the Fort Worth Independent School District. Two percent (n=69) of 3,332 teachers are teaching in an ESL/BE classroom in the Arlington Independent School District. One percent (n=16) of 1,227 teachers are teaching in an ESL/BE classroom in the Grand Prairie Independent School District. However, some teachers in these school districts are teaching in an ESL/BE program and are not endorsed or certified. Fort Worth ISD is bridging the gap between the teachers who need training and the teachers receiving training.

In Fort Worth the total number of teachers who became ESL endorsed in the1997-98 school was 79. These teachers had a variety of ways in which they became ESL endorsed/certified:

- 11 teachers volunteered to become ESL endorsed through Fort Worth's ESL endorsement program;
- 3 teachers were endorsed through the alternative certification program;
- 5 teachers were interns that were already ESL endorsed by successfully passing the ESL ExCET exam, and finished their first year teaching ESL students under a mentor;
- 2 teachers finished through the university and were endorsed by successfully passing the ESL ExCET exam; and
- 58 teachers, who were required by the district, became endorsed through the workshops Fort Worth ISD provides.

Figure 3
Money Spent on ESL/BE Programs per School District
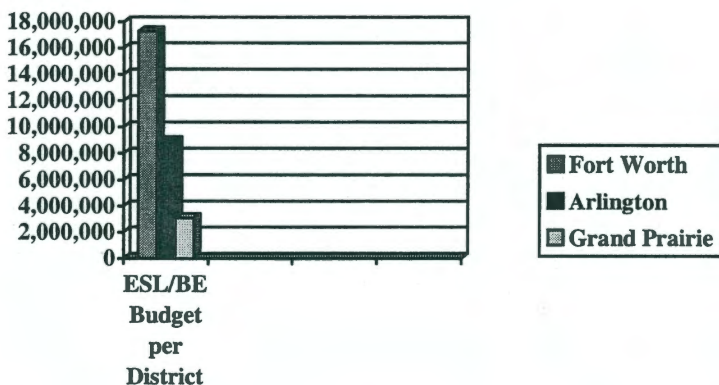
Due to the large number of LEP students enrolled in Fort Worth ISD,
would be suspected that total expenditures for its ESL/BE programs would be greate
than that of Arlington and Grand Prairie. In fact, this would allow Fort Worth t
spend more money on ESL/BE teacher training. Fort Worth, Arlington and Gran
Prairie do have Tuition Assistance Programs available to their teachers; howeve
Arlington and Grand Prairie ISD have only this type of program (which pays fo
their teachers to attend a university to become endorsed/certified). This type o
training could take up to two years, whereas Fort Worth provides workshops yearl
to endorse teachers when needed. Fort Worth also pays for all materials, classes, an
the EXCET exam, which also provides teacher certification.

The Fort Worth Independent School District provides a brochure containin
information about ESL endorsement for teachers who are either required (someon
who is assigned as teacher of record for ESL, is teaching LEP students, and i
required to sign a permit for ESL endorsement) or volunteer (someone who is no
assigned as a teacher of record for ESL but is simply interested in becomin
endorsed) to become ESL endorsed. The brochure lists various training options an
descriptions of the programs offered through the district. For example, the universit
ESL endorsement program provides teachers who:

- like to study issues in depth and to have time to fully understand content
  and practice ideas in the classroom;
- are willing to seek out an appropriate university, establish a deficiency plan,
  enroll in course work, and meet university standards for taking the ExCET
  the second year. The university-operated program is a two-year program
  and involves four courses in which Fort Worth ISD pays for tuition and
  textbooks.

The workshop/ExCET prep program provides training for teachers who:
- have a language arts background;

- have little to moderate experience teaching students from various cultural backgrounds;
- like to learn in an interactive, hands on workshop-type setting;
- are willing to read chapters from books, keep a log, and participate in discussions; and
- are prepared to participate in an intensive 30-hour program prior to taking the ExCET.

The workshop program is district-operated and is a one-year program designed to provide essential information and to prepare teachers for ESL ExCET. To apply for an ESL endorsement, an application needs to be completed by the teacher and a program selection is required (Appendix E).

DISCUSSION

The purpose of this study was to explore the ESL/BE programs of three North Texas School Districts. Due to certain limitations (obtaining timely information from the state, privacy issues surrounding teachers' confidentiality, and time constraints) the research is not as robust as first hoped.

Although all school districts participating in the study were contacted and consented to completing the survey before it was sent, only one school district replied. The results of this study indicate that Fort Worth ISD is better equipped to meet the needs of the LEP students by providing qualified teachers to teach them. Fort Worth ISD has various ESL/BE tuition assistance training programs made available to their teachers throughout the school year. Fort Worth provides three different types of Endorsement Certification Programs. The programs are as follows:

- The Alternative Certification Program is a program for educators who are teaching in schools and hold a degree in another field and are simultaneously receiving certification in education.
- ESL Endorsement workshops are programs for teachers who are required by the district to become qualified to teach ESL and through these workshops teachers can be certified to teach in one year. These teachers are teaching while they are taking these classes.
- Interns are teachers who are certified in either ESL/BE by taking the ExCET exam but they do not have any type of ESL/BE training. A mentor supervises their training when teaching in an ESL/BE classroom.

Fort Worth also allows teachers to volunteer to become ESL/BE endorsed/certified. The Grand Prairie and Arlington Independent School Districts also have a tuition assistance program set up for their teachers to become certified through university course work. Unfortunately, this could take the teachers up to two years, whereas Fort Worth has endorsement programs to prepare qualified classroom teachers in one year.

LIMITATIONS

Unfortunately, the sample size utilized in the study was only three districts. The type of study conducted was quite time consuming and required the districts to take time out of their busy schedules. Due to the fact that it was summer vacation for some districts I found it difficult to collect sufficient data. If the data was collected as hoped, the study would have provided information that would have been more conclusive.

The review of the literature revealed a lack of research which evaluates how school districts are handling the number of ESL/BE teachers relative to the number of LEP students enrolled in their schools. There was also an inadequate amount of research for the various types of training programs school districts provided for their teachers to become ESL/BE endorsed/certified. Most of the research related to student accountability, strategies used to teach LEP students, evaluation of other school districts, and public opinion.

RECOMMENDATIONS

If more school districts were involved in the research, it would have helped in generating more data to draw conclusions. Further research needs to be conducted on how districts are dealing with teacher shortages, in general, let alone teacher shortages for special programs such as ESL/BE. The districts could establish a yearly evaluation program, which could survey the needs and expectations of teachers, students, and parents.

Personal interviews in the form of surveys of both administrators and teachers would have enhanced the study. The information would have highlighted more clearly which school district's ESL/BE program was meeting the needs of its LEP population.

Another important study that would assist in the effectiveness of ESL/BE training programs would be a survey of local and state politicians. This study would prove helpful to predict and validate the future political support of these programs.

A final goal of the districts could be to expand the study thereby allowing more schools to evaluate their ESL/BE program, so that they, too, can implement successful ESL/BE programs from which both teachers and students would benefit.

IMPLICATIONS

For the purpose of this research the implications for special language programs are important because if the LEP students are not able to acquire the necessary skills for self-sufficiency through their school years, then it is likely they will require government assistance programs as adults. Educators strive to provide all students with the opportunities to realize their full potential and to be contributing members of society. Special language programs are also in need of qualified teachers who can identify the students' needs and goals, create a school climate that is supportive of identity and culture, and assist in language acquisition and curriculum in all school subjects.

Further research must be conducted in order to establish a successful ESL/BE program. Administrators and teachers should continue to monitor the

effectiveness of their ESL/BE programs through staff development, yearly workshops, and survey evaluations.

CONCLUSION

In conclusion, school districts need to implement effective ESL/BE training programs for their teachers. Districts can expect a continued shortage of ESL/BE endorsed/certified teachers due to the fact that more LEP students are entering our school systems every day. We as educators need to be ready and qualified so that we can give them the best possible education they deserve.

The ESL/BE programs being utilized today may not be the best possible programs for children whose language is not English, but they are the best programs available at this time. Each individual district needs to make good, competent decisions in deciding which teaching methods and strategies should be used for ESL/BE students. The school districts need to reach a consensus among administrators, teachers and parents as to the needs of the individual student.

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Neuro-Linguistic Programming: An Analysis of Subjective Experience in Relation to the Perception of Language in Communication

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ABSTRACT

Although information is processed in the same grammatical semantics, subjective experiences, which are influenced by culture and background, create an abstract representation of the external world. Such abstract representations are based upon an individual's sense of his or her surroundings, which are mapped and processed internally. However, the representational system: visual-seeing, auditory-hearing, kinesthetic-feeling (vak) – sensorially determine how individuals perceive the language of communication.

"The uniqueness of man - the superiority of man in the world of animals -- lies not in his ability to perceive ideas, but to perceive that he perceives, and to transfer his perceptions to others' minds through words."

Albert Einstein

INTRODUCTION

Neuro-Linguistic Programming (NLP) was developed in the 1970's by Dr. Richard Bandler, an information scientist and Dr. John Grinder, a linguist. The concept of NLP is based on reproducing the behavior of people by analyzing the internal systems of communication. These systems are created by subjective experiences using the representational systems which consist of three of the five senses: visual-seeing, auditory-hearing and kinsthetic-feeling (vak). NLP is the vital element in clarifying how communication is viewed subjectively and processed internally. Establishing an understanding of the other individual(s) is achieved through rapport, which involves mirroring and matching the physiology and language of the other individual(s). The representational system is comprised of the three senses which determine the perception of language in communication; the output (words) used by one individual may be intepreted abstractly by another, for instance: "I see your point" (visual), "I hear what you are saying" (auditory), "I want you to get a grasp on this" (kinesthetic).

Neuro-Linguistic Programming research began at The University of California where Dr. Richard Bandler and Dr. John Grinder decided to integrate technology from linguistics, information science, and behavioral psychology with general systems theory behavior. Let's examine Neuro-Linguistic Programming by dissecting the word itself. "Neuro" refers to experiences that are collected using our five senses. "Linguistic" represents the language that we use - both verbal and non-verbal - that codes, organizes and gives meaning to our mental representations.

"Programming" is a computer metaphor that refers to our ability to discover and use the programs that we all run mentally (Bennett & Steller, 1).

SUBJECTIVE EXPERIENCES AND COMMUNICATION

NLP provides an awareness and systematic approach to communication by developing a process for reproduction of results. This approach consists of the study of structure of the subjective experience or the study of how we do things, how we think, how we behave and process information (Jacobson, 3), and can be used to decipher how information is processed (sensorially) during interpersonal communication.

NLP is a revolutionary approach to human inter and intra communication. Communication is defined in the *Random House Dictionary of the English Language* as meaning "to share with or to make common, as in giving to another part or share of a thought". The word communicate is derived from the Latin "communicare" (Jandt, 21). Jandt's definition of communication cites the example of how people of the world can relate to each other by denotative symbols or words. Although this allows for understanding, it does not create a common bond (or rapport) which is the essence of interpersonal communication. Anthony Robbins states: "To effectively communicate, we must realize that we are all different the way we perceive the world and use this understanding as a guide to our communication with others" (Robbins, 228).

The exchange of symbols or words creates a bond of understanding (or rapport), but subjective experiences define the different translations of words. The misconception with communication is that if a group of people have the same language (or symbols as words) this equals understanding. Rapport is the ability to enter into someone else's world, to make that person feel as though you understand him or her; that you have a strong common bond. It is the ability to go fully from your subjective representation of the world to the other person's frame of reference. The first real step in communication is learning to navigate from your representation of the world to someone else's. It is the essence of successful language (Robbins, 230).

Communication requires coding and symbols that must be shared (words that are symbolic of our subjective experiences, cultures, backgrounds and translations created to express ideas. Although we have words, which denote the same meaning, our subjective experiences create our external perceptions or model (abstract representations) of the world and how we process information internally. NLP is the gathering of information (externally and sensorially) to make models based on the internal experience and information processing of the people being studied and modeled, including the part that is outside of their consciousness. NLP assumes that people operate with a model of the world, a reproduction so to speak and that people are model-makers. This methodology became known as human modeling (Munshaw & Zink, 2).

Human modeling can be implemented by an analysis of the thought processes and internal experience. It is here that behavior must be isolated. John Munshaw and Nelson Zink of Gateway NLP Institute state that in their experience people act more like theoreticians than modelers (Munshaw & Zink,2). This

modeling process actually means finding and describing the important elements and processes that people go through, beginning with finding and studying a human model (Jacobson, 3). This concept is similar to David Berlo's mechanistic model, which describes the process of communication, using ten components that are set up like a machine, starting with sender and ending with a receiver. A model's purpose is to be used as a reference to recreate a common meaning of shared ideas. The human model serves as a prototype for a systematic approach that can be referred to for reproducing the original method or process.

Jacobson states that there is a relationship between perception, thinking and behavior that is neuro-linguistic in nature. The relationship is operating all the time, no matter what we are doing, and it can be studied by exploring our internal or subjective experience (Jacobson, 3). We are born without a syntactical map (model) of the world, yet we must create our own in order to function. Our subjective experience maps are based less on the apparent sensory-based features of the world (or descriptions of those features) than they are on guesses about the rules (processes) of the world. This is based on the idea that even as children we ask why because we are trying to gather and organize the rules of the world in order to function in society and predict consequences to our actions. Since the world is not an object but more an experience, our own percepions allow us to create mental representations or models of the world so that we are able to perceive how we relate to the world and to others. We are born into a world for which we must create the theory, the syntax, the reasons, the 'why' of it all (Munshaw & Zink, 3). Although we must learn to process information through our senses, we can also establish rapport by mirroring body language or physiology.

PHYSIOLOGY AND MIRRORING

Rapport is built by creating or discovering things in common. For example, a common physiology is developed by the use of gestures, tonality and posture. While the words are working at the conscious level, physiology is working at the subconscious level. The foundation for mirroring is based on the three senses or representational systems (vak), such as the voice (tonality and phrasing, how fast one talks), the way a person tilts his or her head and one's facial expressions.

When a person mirrors someone else's physiology, he or she is able to experience the same sort of internal experiences and even the same thoughts. What's the key to establishing rapport? Flexibility is the key. The biggest barrier to rapport is thinking that other people have the same mental representation as you, or that you see the world in a way other than they. Excellent communicators know they have to change their language, tonality, breathing patterns, and gestures, until they discover an approach that is successful in achieving their goal. Response, not content, is the meaning of communication (Robbins, 130).

Even with the most minimal communication, you can get clear, unmistakable cues about how a person's mind works and what sorts of messages he or she uses and responds to. Two researchers have found that words have a characteristic electrical pattern in the brain. Neurophysiologist Donald York, of the University of Missouri Medical Center, and Chicago speech pathologist Tom Jenson found that the same patterns hold true from person to person. In one experiment,
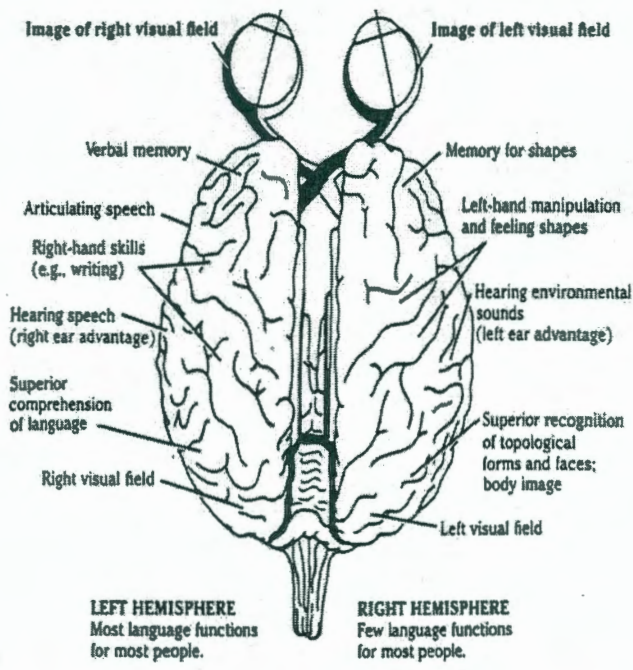
they were even able to find the same brain wave pattern in people who spoke different languages (Robbins, 172). This confirms that emotions are tied to language regardless of experiences, cultures or backgrounds.

One way to elicit a person's internal representation is through visual and auditory analysis, but another method is via physiology (Robbins, 148). Studies have shown that only 7% of what is communicated between people is transmitted through the words themselves. Also, 38% comes through the tone of voice, and 55% of communication, the largest part, is a result of physiology or body language. In analyzing responses there should be no incongruities, usually between message and body language, for example, saying "yes" and shaking one's head "no". The person is not really associating with the experience, therefore this information is not correct. This is known as incongruence (Robbins, 134) The facial expressions, the gestures, the quality, and type of movements of the person delivering communication provide us with much more about what they are saying than the words by themselves (Robbins, 234)

In Mirroring-Adopting other people's behaviors, an individual behaves as though he or she were a "mirror image." If a person were facing someone who had his left hand on his cheek, she would put her right hand on her cheek in the same way (Robbins, 417). In NLP this is known as establishing "rapport". The message the sender is conveying to the receiver is a major factor in deciding meaning but accurately relating to a person's representational system is also very important.

As mentioned previously, the representational system is how we code sensory information in our minds. These code sensory systems are: visual system, auditory system, kinesthetic system, olfaction, and gustation. They enable us to take in and store information, sort it, and use it. The distinctions we make as human beings (internally and externally) come to us through these systems (Robbins, 418). These senses create our experiences from an external perspective and allow us to process this information internally, thereby forming our mental representation of the world or the way our processing represents the external world. NLP states that if we learn how individuals process information then this will create a method of communication with less distorted messages being conveyed.

Grinder and Bandler adapted Neuro-Linguistic Programming from linguistic theory--the interaction of vocabularies and syntax, or, to put it another way, the interaction of words and the rules that govern them. This schema worked well in Chomskian linguistic theory because syntax was considered to be hard-wired in our brains-- syntax comes with the package (Munshaw & Zink, 2). Many experts now believe that the brain is genetically programmed or hard-wired to handle information in predetermined ways.

Image of right visual field

Image of left visual field

Verbal memory

Memory for shapes

Articulating speech

Left-hand manipulation and feeling shapes

Right-hand skills (e.g., writing)

Hearing speech (right ear advantage)

Hearing environmental sounds (left ear advantage)

Superior comprehension of language

Superior recognition of topological forms and faces; body image

Right visual field

Left visual field

LEFT HEMISPHERE
Most language functions for most people.

RIGHT HEMISPHERE
Few language functions for most people.

Source: Trevarthen, C. (1980) Functional Organization of the Human Brain. In M. C. Wittrock (Ed.), *The Brain and Psychology.* New York: Academic Press, pp. 33–91.

Illustration 1

Illustration 1 shows how compartments of the brain designate specific areas for information retrieval.

Based on evidence of word order, either subject-object-verb or subject-verb-object in 79% of the world's languages, Anderson contends that language reflects thought. (Trevarthen in Anderson, 39). Hunt believes that the human brain's propensity to look for cause-and-effect relationships and to seek patterns and rules in what humans experience reflects a universal manner of viewing and organizing the surrounding environment (Trevarthen in Hunt, 24). Our maps are representations of our guesses about these non-apparent, non-sensory, non-intuitive features of the world. The syntax of the world is non-sensory, and thus, cannot be perceived directly (Munshaw & Zink, 2).

We all receive information sensorially, but we do not map or process the information the same way. McDonough states that people are different and their brains function in ways that are unique to their inherited characteristics and past experiences. Each person has his or her own individual cognitive style, which Messick defines as one's "information processing habits" (Trevarthen, 37). Syntactic awareness is based on conscious reasoning. Syntactic awareness is the ability to see what can't be seen, hear what can't be heard, and feel what can't be touched-- comprehension of the intangible. It is to be aware of the processes of the world-- the syntax we use to understand it—rather than the world itself (Munshaw & Zink, 3).

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Most cognitive scientists now take the position that the brain processes information in a number of ways, including some type of semantic, visual, auditory, or other representation. People learn to use that language system to communicate with other people in their environment, and they organize language in a fashion that reflects the relationships their category-forming brain finds in their world (Trevarthen, 37). NLP this is known as representational systems.

REPRESENTATIONAL SYSTEMS

Representational systems are elicited through visual (eyes), auditory (language) and kinesthetic (body movement) or vak. Everyone uses all three systems but each person has one main way information is processed. Analysis of language speed tells us what representation a person uses. For example, people who are primarily visual tend to see the world in pictures because they are trying to keep up with the pictures in their brain. Visual people tend to speak quickly. For example, they may say "I see your point." Auditory people tend to be more selective about the words they use. They have more resonant voices and their speech is slower, more rhythmic, more measured. For example, they may say "That sounds right to me." Kinesthetic people tend to speak even slower. They react primarily to feelings. They use metaphors from the physical world. For example, they may say "I'm reaching for an answer, but I haven't got a hold on it yet." Speaking at the speed that is appropriate for each person's system matches the way each individual processes. This allows for more accurate message relaying because the person feels a common bond, a congruent speech pattern. The purpose of finding out the strategy or order which one retrieves this information tells us how that person processes information. Knowing one's representational system allows the communicator to send his or her message in a way that the receiver can comprehend, according to his/her map of how he/she represents the world internally (Robbins, 126).

HOW PEOPLE PERCEIVE COMMUNICATION

| Visual	Auditory	Kinesthetic
I see your point.	I hear what you are saying.	I want you to get a grasp on this.
I want you to take a look at this.	That does not resonate with me.	Are you able to handle this?

As people represent information internally, they move their eyes, even though that movement may be slight. With a normally organized right-handed person the following holds true, and the resultant sequences are systematic. (NOTE: There are some people who are organized in a right-to-left reverse manner.)

VISUAL (V)   AUDITORY (A)   KINESTHETIC (K)
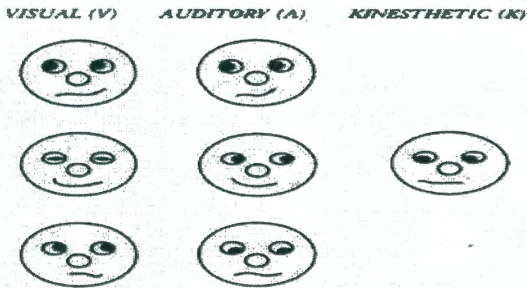
Eye movements can allow you to know how a person is internally representing his external world. The person's internal representation of the external world is his "map" of reality and each person's map is unique.

TO GET	ASK
1. Visual Remembered	1. "What was the color of your first bicycle?"
Pictures	
2. Visual Constructed	2. "Can you see yourself with golden hair?"

3.Auditory Constructed	**3.** "If you could ask any question of John F. Kennedy, what question would you ask?"
4.Auditory Internal Dialogue	**4.** "Repeat to yourself: What is the most important thing to me in my life now?"
5.Kinesthetic Words	**5.** "Imagine the feeling of ice in your hand."

Illustration 2

Illustration 2 shows how the perception of language is demonstrated durin communication. Robbins, A. Unlimited Power. New York: Fawcett Columbin 1980. (p.242)

CONCLUSION

This qualitative analysis was an evaluation of how our subjectiv experiences or mental representations of external perception related to the syntax (how we process this information internally) using a representational framewor consisting of three main systems of communication: visual, auditory and kinestheti This representational system is linguistically interpreted. The literature reviewe supported the fact that every person shares language as a way of communicating, b the processing of that information is a subjective experience. Further research recommended to provide a quantitative analysis of the individuals who use eac representational system – visual, auditory and kinesthetic (vak).

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An Evaluation of Gender Bias in the University Classroom

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ABSTRACT

Gender bias in the classroom continues to be a significant research issue as it has been shown to impa the academic and personal success of students. Previous research indicates that the existence of gend bias begins in elementary school and continues through the graduate level. The present study examin ten university classrooms for the presence of instructor gender bias. Four categories guided the classroo observations: 1. Teacher-student conversation, 2. Praise, 3. Behavioral warnings, and 4. Open and clos questions. Results revealed that university instructors in the present study demonstrated gend discrepancies that favored male over female students in all four categories.

Gender bias in the classroom is a significant issue that has been linked the academic and personal success of elementary students (Lundeberg, 1997 Gender bias can be defined as any behavior that shows favor to one gender over th other. Research provides consistent evidence that gender bias does exist elementary (Wellhousen, 1996), secondary (Falchikov & Magin, 1997) an university levels (Andersen & Miller, 1997). Observational studies demonstra that male students participate more in class, receive more attention, and are mo likely to receive praise for the content of their answers than are girls (Wellhousen Yin, 1997). Subtle gender bias is often present in classrooms, and teachers, as we as preservice teachers, may not notice it on a conscious level. During classroo interaction, men may dominate discussions, interrupt women, ignore women contributions, or attribute a woman's idea to a male. These subtle sexist behavio accumulate, eventually creating a chilly climate for women students (Lundeber; 1997). Such biased classroom interactions may decrease a woman's confidence her intellectual abilities (Perry, 1996).

In 1992 The American Association of University Women published th report "How Schools Shortchange Girls" which described discrepancies in the wa girls and boys are educated in American schools (Wellhousen & Yin, 1997). Th publication brought national attention to the issue of gender bias and has inspire many others to publish work supporting that same premise. More than twenty yea of research examining teacher interactions with children shows that teachers do tre boys and girls differently and that those differences have a startling effect on thes children. Adolescence is when the effects of long-term gender bias become mo apparent, as exhibited in declining academic performance and diminishing sel esteem (Sadker & Sadker, 1994). It is early on that boys and girls learn stereotype gender roles, which are reinforced throughout their educational careers wit damaging results.

For various reasons teachers, administrators, and parents may not kno how prevalent this gender bias is in early education. First, the habit of treatin people differently according to their gender is common and often accepted; as

result, it often goes undetected or unquestioned. Second, exposure to bias begins far before any formal schooling. By the time a child enters the school system, he or she has already learned to behave according to stereotypes (Wellhousen, 1996). It is imperative to remember that behavior such as gender bias may be a learned experience for both the teachers and the students. Teachers often unwittingly play a part in creating inequitable environments for the children in their classes (Matthews, Binkley, Crisp & Gregg, 1998). In classrooms at all levels, observers have watched as male students captured conversations from the first moment and females sat quietly and patiently awaiting their turns, only to be interrupted and overtaken by males as soon as they spoke.

These patterns, learned early in life, are not overcome easily or quickly (Sadker & Sadker, 1994). At school as well as at home, adults challenge boys to find solutions to problems while they yield to girls' requests for assistance (Sadker & Sadker, 1994). While adults may feel they are being helpful and alleviating anxiety when they assist rather than challenge the girls, they are actually sending out negative feedback that tells girls, " I know you are not capable, therefore I will help you." This learned helplessness results in girls showing less persistence and giving up more often (Huse, 1995). They develop a low sense of self–esteem and higher expectations for failure. These feelings increase over time and are believed to be largely responsible for girls' diminished achievement in middle school. In order to protect themselves from failure, girls eventually choose less demanding courses and careers (Dweck & Elliot, 1983). As adolescence progresses, many young girls become increasingly confused and conflicted about their role as young women and oftentimes censor themselves to fit into what they perceive as a cultural expectation of womanhood in the interest of relationships. Girls find themselves less able to reconcile their own voices (their wants, needs, interests and ambitions) with the ideal that society expects and frequently demands. Too often they become convinced that they are lacking and unworthy because they do not measure up to the impossible ideal (Benjamin & Irwin-DeVitis, 1998).

Finally, the best teachers and parents often do not recognize the bias they exhibit in their own behavior; therefore, they are unable to attempt to change it. Nonetheless, gender bias in the classroom has had a documented negative effect on children. Girls become less involved and less demanding of teacher attention (Sadker& Sadker, 1994). They may even experience diminished self-esteem and lack of confidence, which results in lower levels of achievement (Wellesley College Center for Research on Women, 1992). Girls may limit career goals to traditional, domestic, and nurturing careers, which are typically low-wage earning. Males are also shortchanged in gender-biased classrooms as they are pressured to conform to male roles (Sadker & Sadker, 1994). They also develop a negative image of females as being less capable (Sadker & Sadker, 1994).

As Park (1996) points out, gender bias is sometimes explained through socialization factors: women are simply not socialized to be as career-oriented or ambitious as men. Others point to the fact that women are still largely responsible for child-rearing and housekeeping, thus giving them less time and energy to forge successful career paths. Though there undoubtedly is some truth to such explanations, focusing exclusively on such external factors may lead us to overlook

the ways in which sexism is embedded in the structures, norms, and policies of th
school itself (Park, 1996). Many would argue that boys and girls choose tradition
career paths based on informed, individual choices (Thompson, 1994). Maybe s
but if this were a truly equitable world where people chose careers based only o
aptitude and ability, chances are that more carpenters would be female and mo
secretaries would be male. Our entire workforce would reflect the gend
demographics in society and students would see a myriad of people working in
variety of occupations instead of the sex-stereotyped way they often see caree
portrayed today (Thompson, 1994).

Though it is clear that many types of gender bias have been studie
throughout American schools, perhaps one of the most powerful contrasts betwe
the education of boys and girls is that of quantity and quality of teacher-stude
interaction. Research has proven that in academic situations boys are called on mo
often and are given more time to answer (Wellesley College Center for Research of
Women, 1992). Boys are asked higher level questions and receive higher quali
interactions with teachers, including praise and remediation. While teache
volunteer to assist girls (Sadker & Sadker 1994), boys are challenged to fi
solutions to problems. In addition, gender-biased language and nonverb
communication are used by both male and female teachers. For example, teache
tend to assign classroom duties by gender, with girls more frequently assigned th
role of helpmate (Wellhousen & Yin 1997). In addition, girls are complimented c
their hairstyles, dress, and neatness of work rather than on their academ
accomplishments (Sadker & Sadker, 1994).

Gender bias is so prevalent in American society and in classrooms toda
that it often goes undetected. In the fast-paced exchange between teachers ar
students it is often difficult to consciously discern biased comments and action
This, in turn, makes it difficult to convince educators that gender bias does exist
classrooms. However, research completed over the last twenty years has examine
such bias and concluded that it is indeed prevalent in American classrooms toda
The majority of these studies have focused on observing elementary and seconda
level classrooms with the opportunity to address stereotypes. The present study wi
examine communication in the university classroom for the existence of gender bia
Specifically, my hypothesis is that instructor gender bias is communicated in th
university classroom.

METHOD

Participants
Ten undergraduate classrooms (students = 184), representing s
departments, were observed in the present study. Ten instructors (five male, fiv
female), with a mean of 10.2 years teaching experience, volunteered their classroom
for observation.

MEASURE

Based on previous research (Benjamin & Irwin-DeVitis, 1998; Lundeberg, 1997; Park, 1996; Sadker & Sadker, 1994; Wellhousen, 1996; Wellhousen & Yin, 1997), four categories were identified to examine teacher-student communication. The first category, teacher-student conversation, is defined as conversation between the teacher and the student that pertains to the topic at hand (Lundeberg, 1997). The second category, praise, is defined as a comment that is explicitly positive or provides positive reinforcement (Wellhousen & Yin , 1997). Examples of praise include "Exactly," "Excellent point," and "That is a good idea." The third category, warning, is an explicitly negative evaluation but does not express strong disapproval (Wellhousen , 1996). Examples of warnings include exclamations such as, "If I can have everyone's attention please," and direct eye contact, and negative nonverbals directed to the offender, such as a long stare accompanied by a moment of silence. The fourth category is open vs. closed questions. A closed question is asked with the expectation of a specific answer. Examples include "John, who is the father of hermeneutics?," "Who coined the term self-actualization?" Open questions elicit an opinion from or discussion with the student. An example of an open question includes, " Jason, what do you think about propaganda?"

PROCEDURE

The observer entered each classroom with the instructor's permission, but was not announced to the students. Instructors and students were unaware of the purpose of the study. The same observer was used in each of the ten classrooms to ensure a consistent documentation of data. Interactional patterns were coded using the categories described above as the observer evaluated each teaching session. Each classroom was observed for no less than one hour and no more than one hour and fifty minutes. The observer evaluated each session documenting only clear, explicit demonstration of teacher-student conversation, praise, warnings, and closed or open questions. The four categories were each documented and compiled to form an actual percentage of interactions between a teacher and student of a specific gender with adjustment for uneven proportions of male and female students present during the observation.

RESULTS

Table 1 displays the frequencies and percentages of the four categories analyzed by the observer. Observations revealed that instructors at the university level conversed with male students 56% of the time and with females 44%. Praise was received by male students 68% of the time and by females 32%. Warnings during class sessions were received by male students 94% of the time, whereas only 6% of warnings were geared toward females. The majority of questions (59%) were directed to males, while only 41% were directed to females. Of the closed questions asked, 59.5% were directed to males and 40.5% to females; and, finally, of the open questions asked, 58% were directed to males and 42% were directed to females. The present study reveals that significant differences occurred in the praise and warnings categories.

TABLE 1

| | Male | | | Female | |
Category	Freq	Prop		Freq	Prop
Conversation	44	0.560		34	0.440
Praise	92	0.680		44	0.320
Warnings	24	0.940		1	0.060
Questions	53	0.590		37	0.410
a. closed	35	0.595		24	0.405
b. open	18	0.580		13	0.420

DISCUSSION

Gender bias is so prevalent in American society and classrooms that it ofte goes undetected. This in turn makes it difficult to convince educators that gend bias does exist. The present study revealed that gender bias does exist in universi classrooms. These results, however, compared to previous research (Wellhouse 1996; Ludenberg, 1997), suggest that although gender inequities are present, they a on a smaller level.

The present study concludes with mixed results giving males a overwhelming majority of both praise and warnings, while in the categories conversation and questions asked, there was not a significant difference. There a many possible explanations for these differences.

Perhaps one reason for this is that gender bias behaviors are learned. W now know that by the time a child enters the school system (at an early age) he she has already learned to behave according to stereotypes (Wellhousen, 1996 Therefore, behaviors exhibited in college classrooms may in turn be a dire reflection of this learned process. But why, then, do these inequities decrease university classrooms?

One reason may be that for the past fifteen years more women than me have enrolled in college. Women are now the majority of all college student Women receive the majority of masters degrees. In fact, a generation ago wome made up less than 10% of the students enrolled in law and medical schools. Toda nearly half of the students enrolled in these highly competitive graduate schools a women (Ravitch, 1996).

With statistics such as these we have observed college classrooms evolv into a more even playing field for women. The observer of the present stud witnessed a clear example of this first hand. During one class session, the instructo (a male) made an unnecessary gender reference and was quickly corrected by female student. This type of interaction has become more commonplace a American women continue to strive for equality in the classroom. In short, one ca only hope that during the next fifteen years these changes will continue.

CONCLUSION

Previous research provides consistent evidence that gender bias does exist in classrooms beginning in preschool and continuing through graduate school. Even though research in this area began over thirty years ago, current studies show that boys and girls are still treated differently in the classroom (Sadker & Sadker, 1994). The preliminary study presented here provides only a few specific examples of university instructors' behavior that illustrated gender inequities. It is important to note that for the most part, teachers are not aware that they interact more with male students through conversation, praise, warnings, and questions. The fact is gender bias has become so pervasive and ingrained in teacher behavior that teachers simply do not realize they are behaving in a way which favors males over females (Wellhousen, Yin, 1997). Teachers must be made aware of this behavior in order to make the changes necessary to be fair to both males and females.

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Genetic Identification of Pathogenic Mutations in Equine Infectious Anemia Virus (EIAV)

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ABSTRACT

Equine infectious anemia virus is a retrovirus that displays a high degree of genetic variation in its envelope (env) region. The env region of the virus encodes two surface projection glycoproteins, which are responsible for attachment and host cell penetration. In the current study we analyze env region variation over a period of seven months, from infection until the onset of disease, in an animal that was infected with virus derived from a molecular clone. With the use of polymerase chain reaction amplification (PCR) and other genetic analyses, the conversion of a non-pathogenic strain of EIAV to a pathogenic mutant was analyzed. The non-pathogenic strain of the virus differs from a known, highly pathogenic strain only in the envelope (env) region. Env sequences from virus obtained early after infection (11 days) varied from the parental clone by a maximum of 0.4% at the nucleotide level and 0.9% at the amino acid sequence level. In contrast, env sequences obtained from virus at 137 days post-infection, shortly prior to a febrile episode, differed by as much as 0.8% and 1.8% at the nucleotide and amino acid sequence level respectively. At the later sampling date, amino acid variation resulted in an increase in the number of potential N-linked glycosylation sites.

INTRODUCTION

Equine infectious anemia virus (EIAV) is a member of the lentivirus group of retroviruses. EIAV is transmitted among horses via mechanical transmission by the common horse fly (Montelaro et al., 1993). The disease, equine infectious anemia (EIA), is characterized by three stages: acute, chronic, and asymptomatic. The acute phase consists of fever, anorexia, and prominent viremia that occur shortly (5-30 days) after infection (Montelaro et al., 1993). The chronic phase of EIA is observed as repeated cycles of viral replication that occur for up to one year post-infection. Animals with chronic EIA may exhibit fever, anorexia, edema, leukopenia, anemia, hemorrhages, and diarrhea (Montelaro et al., 1993). These disease episodes occasionally cause a "wasting" syndrome as seen in HIV (Montelaro et al., 1993). With time, disease episodes become less frequent and severe. This is the asymptomatic phase of EIA. The asymptomatic phase consists of no clinical symptoms and low levels of plasma viremia. Asymptomatic animals are infectious. Over 90% of horses infected with EIAV become asymptomatic (Montelaro et al., 1993).

The fact that a majority of horses infected with EIAV survives gives us information regarding antigenic and immunological properties of the virus. Each cycle of viral replication in the chronic stage represents an antigenically different form of the virus, which has circumvented the immune system of the horse. This creates many genetically different "quasi-species" in the horse (Montelaro et al., 1993). Asymptomatic horses generally exhibit no further disease episodes

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demonstrating immunological control of the virus (Montelaro *et al.*, 1993). This fact makes EIAV an attractive model to test vaccine or treatment protocols for other retroviruses such as HIV. Characterization of pathogenic molecular clones of EIAV has identified the envelope (env) and LTR regions of the virus as important areas to study in regard to promotion of pathogenicity (Payne *et al.*, 1998).

In the current study, a horse was infected with a non-pathogenic strain of EIAV. This strain differs from a highly virulent clone of EIAV, which causes disease in one week, only in the env region (see Figure 1). The horse was monitored for one year during which samples were collected at various times. Three samples designated B1-B3 were used in this study. B1 DNA was collected 11 days post infection, B2 DNA was collected 137 days post-infection, and B3 DNA, obtained during the first febrile episode, was collected 203 days post-infection. Viral sequences amplified from each DNA sample were analyzed for changes in the surface glycoprotein region of the env gene.

MATERIALS & METHODS

During the course of one year, blood was collected from a horse infected with an EIAV clone designated pwyoLTR/19. This clone differs from a previously characterized, highly virulent clone only in the env region (see Figure 1). The clinical disease course and blood sampling dates are shown in Figure 2. DNA from blood collected at each sampling date was prepared and stored at -80°C. DNA (B1 B3) was used as template for polymerase chain reaction (PCR) amplification of a region of the viral env gene, using primers CCCACAGCAACATTATATAGGC TTGGTGGC and CTCTCTTATGTCTAATTAGTCCAGTGTTAG. Identification of a 1 Kb product was accomplished by gel electrophoresis. Excision of the 1Kb env fragment was performed and DNA purification was achieved using a QIAquick gel extraction Kit (Qiagen). Isolated DNA was cloned into the pTOPO vector (Invitrogen). Colonies containing the TOPO plasmid and insert were grown in LB broth with 50□g/ml Kanamycin and 50□g/ml Ampicillin for 24 hours at 37°C. A QIAprep spin miniprep kit (Qiagen) was then used to isolate the plasmid from the cells. Purified plasmids were then analyzed by restriction enzyme digestion to confirm the presence of the desired DNA fragment. Appropriate plasmids were then used for dideoxynucleotide sequencing using the Sequitherm Excel II long read DNA sequencing LC kit (Epicentre). Sequence data were obtained on a Li-COR model 4200L-2 long read IR DNA sequencing system. Sequence data were analyzed using Sequencher (Gene Codes) and DNA STAR software packages.
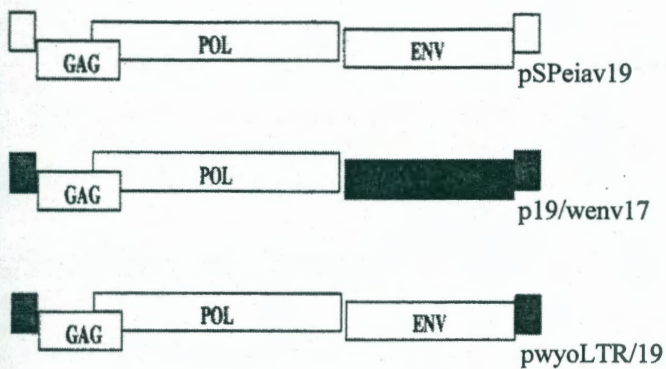
Figure 1. pSPeiav19 is an avirulent molecular clone of EIAV. "Wild type" derived sequence was placed onto clone pSPeiav19 to produce a highly virulent molecular clone (designated p19/wenv17) of EIAV. pwyoLTR/19 is an avirulent molecular clone that differs from the p19/wenv17 molecular clone only in the env region.
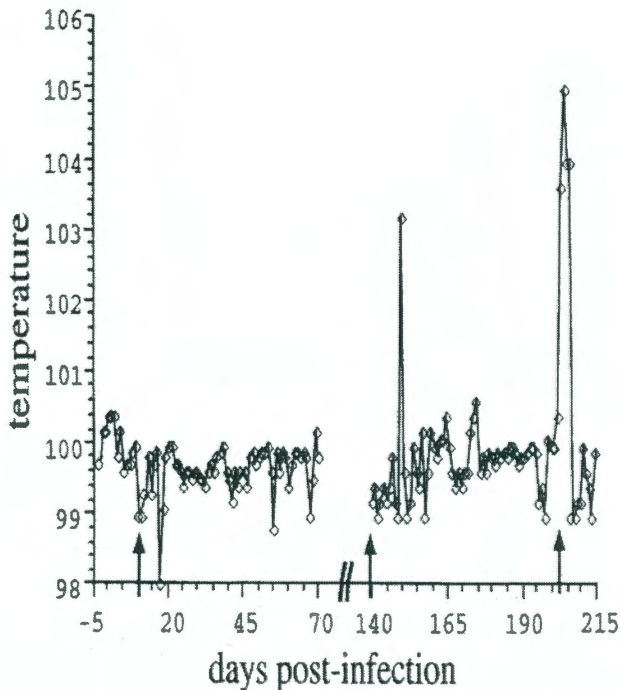
Figure 2. Clinical profile for pwyoLTR/19 infected horse. The graph displays temperature (°F) readings for each day post-infection. Dates marked with arrows represent days in which samples for the current study were taken.

RESULTS

Polymerase chain reaction was used to amplify 1Kb viral fragments from DNA samples obtained at 11 days post-infection (B1), 137 days post-infection (B2), and 203 days post-infection (B3) from a horse infected with pwyoLTR/19 derived virus. As shown in Figure 3, some non-specific DNA products were also amplified. Attempts to adjust PCR conditions to eliminate extraneous products were not completely successful; therefore the 1 Kb env region fragments were excised from agarose gels and were purified prior to cloning. Approximately twelve plasmid clones were obtained for each DNA sample. These plasmids were analyzed by restriction enzyme digestion revealing that most contained DNA inserts of approximately 1Kb in size. However, there was some heterogeneity in the cloned fragments. DNA sequence analysis was performed on multiple clones for each DNA sample. Six viral sequences were obtained for sample B1, four viral sequences were obtained for sample B2, and no viral sequences were obtained for sample B3.

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Although a 1 Kb product was obtained by PCR amplification for sample B3, this product was not of viral origin.

The nucleotide and amino acid sequence differences of derived virus from the pSPeiav19 avirulent clone are shown in Table 1. At the nucleotide level, B1 DNA samples varied at a maximum of 0.40% from the pSPeiav19 molecular clone. B2 DNA samples varied at a maximum of 0.80% from the pSPeiav19 molecular clone at the nucleotide level. Regarding changes in amino acid sequence differences, B1 samples varied as much as 0.90% from the avirulent pSPeiav19 molecular clone while B2 samples varied as much as 1.80% from the avirulent pSPeiav19 molecular clone.

The number of possible N-linked glycosylation sites for each molecular clone is shown in Table 2. N-linked glycosylation sites direct the attachment of sugars to polypeptides. Eleven potential N-linked glycosylation sites were identified for the avirulent pSPeiav19 molecular clone. All DNA samples taken at 11 days post-infection contained identical N-linked glycosylation sites. B2 samples B24E-2 env and B2C2 env also contained eleven possible N-linked glycosylation sites. However, B2 samples B21-3 env and B21-7 env contained an increase in the number of potential N-linked glycosylation sites by 4 and 3, respectively. The amino acid translation for each clone is shown in Figure 4. The changes in amino acid sequence which generated an overall increase in the number of potential N-linked glycosylation for B2 samples B21-3 env and B21-7 env are highlighted. The additional N-linked glycosylation sites correspond to sites found in a highly virulent clone (p19wenv/17) as indicated in Figure 4.

DISCUSSION

As expected, the env regions of viral sequence obtained at 11 days and 137 days post-infection varied from the parental clone. These data are similar to previous studies, which demonstrated that avirulent strains of EIAV could accumulate genetic changes leading to virulence (Montelaro et al., 1993). What is unique about the current study is that the experimental animal was infected with virus derived from a single, well-described molecular clone (Payne et al., 1994). In previous studies, animals have been infected with less well-defined virus mixtures (Montelaro et al., 1993).

Samples taken 11 days post-infection and two samples taken 137 days post-infection (B24E-2 env & B2C2 env) did show some minor changes in amino acid and nucleotide sequences. B2 DNA samples B21-3 env and B21-7 env displayed notable changes in N-linked glycosylation sites (see Figure 4). N-linked glycosylation sites allow for attachment of carbohydrate to a polypeptide backbone. It is important to note that the additional possible N-linked glycosylation sites of the B2 samples corresponded almost identically to the possible N-linked glycosylation sites of the p19wenv/17 virulent molecular clone (see Figure 4). It is interesting to speculate that the addition of possible N-linked glycosylation sites might contribute

to the transformation of molecular clones to a strain very similar to a highl[y] pathogenic strain.

Amplification of viral sequence from DNA sample B3 was unsuccessfu[l]. Amplification of extraneous DNA was attained instead. Use of different primers wi[ll] be attempted in the future to obtain B3 env region clones.
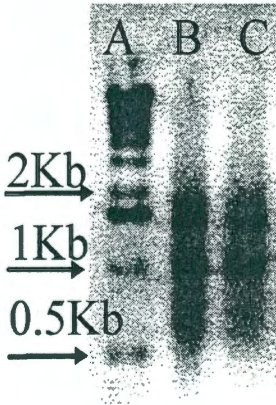

Figure 3. Agarose gel electrophoresis showing the results of PCR amplification of the B1 DN[A] sample. Lane A is a DNA marker, lane B and C show the product of B1 DNA.

Table 1. Sequence Divergence

Sample Name	Sample Date (Post-infection)	% Nucleotide Divergence (a)	% Amino Acid Divergence (b)
B1-2 env	11	0.40%	0.62%
B1-3 env	11	0.30%	0.90%
B1-9 env	11	0.40%	0.60%
B1-10 env	11	0.20%	0.30%
B1-11 env	11	0.30%	0.30%
B1-13 env	11	0.40%	0.60%
B21-3 env	137	0.80%	1.80%
B21-7 env	137	0.80%	1.80%
B24E-2 env	137	0.10%	0.30%
B2C2 env	137	0.20%	0.60%

(a) Difference (in percentage) in nucleotide sequence for each clone from the avirulent pSPeiav19 molecular clone.
(b) Difference (in percentage) in amino acid sequence for each clone from the avirulent pSPeiav19 molecular clone

Table 2. Comparison of Possible N-linked Glycosylation Sites

Sample Name	Number of Possible N-linked Glycosylation Sites
pSP19 env	11
B1-2 env	NA*
B1-3 env	11
B1-9 env	11
B1-10 env	11
B1-11 env	11
B1-13 env	11
B21-3 env	15
B21-7 env	14
B24E-2 env	11
B2C2 env	11
P19wenv/17	17

* Not available due to incomplete sequencing data

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Figure 4. Amino acid translation for each molecular clone. p19wenv/17 possible N-linked glycosylation sites along with corresponding B2 DNA sample N-linked glycosylation sites have been highlighted.

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Effects of Arousal and Gender
on Judgment and Recall

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ABSTRACT

Many researchers have concluded that gender and arousal (positive and negative) can influence cognitive activity. The present study investigated the interaction of these influences on judgment and recall. The participants were undergraduate students from The University of Texas at Arlington. Recall and judgment were measured as functions of arousal (high and low) and gender (male and female). Participants were asked to listen to a story and then rate 162 words based upon their relationship to the story. The participants were given two minutes to recall as many words from the word list as possible. The data for recall revealed a main effect of arousal and an interaction between arousal and gender. The data for judgment revealed a main effect of both arousal and gender. These results suggest that arousal and gender have powerful effects on cognitive processes like learning and memory.

INTRODUCTION

The present experiment is based on the research of Varner and Ellis (1998). They were interested in studying the effects of emotional states on cognitive activity. Varner and Ellis (1998) proposed that the type of cognitive activity we use to retrieve information from memory is affect by mood. They further hypothesized that people selectively process only mood-congruent information. Their data suggested that this is particularly true for negative mood states. Varner and Ellis (1998) supported their findings with the resource allocation and semantic network theories.

Other studies have also suggested that negative mood states affect cognitive activity. In 1998, Egloff found that negative mood influenced people's ideas about pleasant and unpleasant situations. He used the Positive and Negative Affect Schedule (PANAS) and a Pleasantness-Unpleasantness scale. Brand, Verspui, and Oving (1997) used film fragments to induce mood states. Using a Profile of Mood States, and a Stroop interference task, they assessed selective attention. The findings indicated that in the negative mood condition fewer errors were made on the Stroop task. In another study, Hesse and Spies (1996) looked at the ways in which negative mood influences performance. They used a strategic priming paradigm which paired structured and unstructured words in a prime-target relationship with varying levels of difficulty. "Results, supporting the strategy view, show that priming effects were larger under the negative mood, and difficulty had no effects" (p. 166). The present experiment, however was designed to study the effects of positive mood, an issue not addressed in the aforementioned literature.

The present experiment is also based on the theories of Ottati and Isbell (1996). They studied the effects of arousal and emotional states on cognitive processes. Ottati and Isbell (1996) hypothesized that the effects of mood misattribution occur when a person is first acquiring information on which they will recall. A misattribution of mood has an assimilation effect. An assimilation effect occurs when "...positive moods elicit more positive judgements of an object than do negative moods" (p. 39). Conversely, a contrast or correction effect occurs when

person recognizes that their mood may be influencing their judgement, so they try to correct it. "Overcorrection will produce a contrast effect in which positive mood produces a more negative evaluation of the object than does negative mood" (p. 40). Ottati and Isbell (1996) further hypothesized that it is the way in which a person processes information that determines whether her mood will have an assimilation or contrast effect.

The theory presented by Ellis and Ashbrook (1989) proposes that emotional states and arousal produce their effects on cognitive activities "by regulating the amount of capacity available to be allocated to a given task" (p. 456). This theory supports Ottati and Isbell's hypothesis that people who process information efficiently do not exhaust their cognitive resources, which allows them to engage in correction. Inefficient processors exhaust their resources, leading to mood assimilation. Martin, Seta and Crelia (1990) agreed, "It is not unreasonable to assume, therefore, that there are different kinds of assimilation and contrast that involve different kinds of processes" (p.27). Negative moods appear to produce a more careful processing, while positive moods produce top-down processing (Forgas, 1998).

Another variable of the present experiment is gender. In 1997, Casiere and Ashton found that females had a higher rate of accuracy than males. Yarmey (1993) concluded that, "females have been found to be more accurate observers than males..." (p. 1992). Yarmey hypothesized that women are more detail-oriented and therefore better able to recall details accurately.

The general hypothesis of the present experiment is that people exposed to highly arousing information will process information more efficiently leading to greater recall. It is further predicted that women will have greater accuracy in recall and judgement then their male counterparts.

METHOD

Participants

The participants were 40 male and female undergraduate students from The University of Texas at Arlington. They ranged from approximately 18 to 40 years of age. Participants were not compensated for their participation in the experiment; however, some received extra credit points toward their course grades. Eight participants were excluded from the study for not following instructions. This included not providing their names or circling words in the packet instead of rating them with a number as instructed.

Materials

Participants were required to complete a consent form. One of two positive stories (high arousal and low arousal) was presented on audiocassettes (see Appendix A and B). A word packet containing 162 words was given to the participants (see Appendix C). The participants were also given a blank lined sheet on which to recall the words.

<u>Design</u>

The experiment was a 2 (arousal) X 2 (gender) completely randomized factorial design. The arousal condition had two levels (high and low). The attribute variable, gender, had two levels, male and female. The participants were randomly assigned to the arousal conditions. The dependent variable, recall, was measured as the number of words remembered in a two minute time period, after an approximate delay of fifteen minutes. The dependent variable, judgement, was measured as the overall rating of the story on a scale from -3 (very unpleasant) to 3 (very pleasant).

<u>Procedure</u>

The participants completed a consent form. All participants heard one of the stories depending upon which condition they were randomly assigned. They were instructed to "Listen to the story on the tape carefully". Word packets were distributed with the following instructions: "Be sure to put your name and social security number on the top page of this packet. Follow the instructions on the first two pages to complete this packet. First, rate the overall mood of the story; circle the appropriate rating on the first page. Next, you will be rating each word in this packet on how well it relates to the story you just heard. Please evaluate each word carefully. Begin with the first page and work at your own pace". This took approximately fifteen minutes.

After the word packets were collected a recall sheet was distributed on which participants had two minutes to recall as many of the words from the word packet as possible. Participants were thanked for their participation and given a brief explanation of the experiment.

RESULTS

A two factor completely randomized ANOVA was used to analyze the data. The judgment data revealed a significant main effect of arousal, $F(1, 31) = 20.95$, $p < .05$. The results also revealed a significant interaction between the arousal and gender, $F(1, 31) = 4.88$, $p < .05$. The story ratings between the females in the high arousal condition ($M = 2.00$, $SD = 1.10$) and the females in the low arousal condition ($M = 1.60$, $SD = 1.14$) was significantly higher than the difference between the males in the high arousal condition ($M = -.10$, $SD = 0.57$) and the males in the low arousal condition ($M = 1.00$, $SD = 1.10$).

The recall data revealed a significant main effect of arousal, $F(1, 31) = 4.23$, $p < .05$. There was also a significant main effect of gender, $F(1, 31) = 19.12$, $p < .05$. There was no interaction between arousal and gender.

DISCUSSION

The results of this experiment are mixed as to the support of our hypotheses. Arousal and gender do appear to play important roles in mediating cognitive processes. Females had more accurate immediate recall than males. The participants in the high arousal conditions also had more accurate immediate recall for both judgment and recall. "The processing consequences of mood (arousal) may thus extend to several of the major cognitive mechanisms..." (Forgas, 1998, p. 320) These mechanisms include learning, memory, judgment and perception.

These results may have far reaching applications in the real world in the areas of advertising, political strategy and even child rearing. We may be able to develop ways to learn how to process information, so that extraneous variables, like mood, do not affect our perceptions and judgements.

In advertising, it is important to be aware of the influences that guide our judgment in deciding what products to purchase and why. In child rearing, it is important to develop teaching skills to help children learn and remember efficiently. The ways in which children's memories and learning are influenced by extraneous factors are also significant. In politics, it is important to understand how perceptions and judgments are manipulated and influenced by the media to bias us toward or against certain candidates.

Clearly, there is still a vast amount of research that might provide more definite answers to these questions. However, this research may contribute a piece to the puzzle of how humans process, perceive and retrieve information.

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Appendix A

Positive High Arousal Story

You walk out of your house and get into your car. You look at your watch to check the time. You insert the key into the ignition and start your car. You are going to the television station for an interview on a popular morning show. The show is introducing the winner of the lottery. You have already purchased a new home in a tropical paradise and plan to move there next week. On the way to the station, you see a golf course and begin to daydream about the beach. As you turn into the station parking lot, you see the sign that says special visitor parking. You pull your car into the closest space, turn off your car and grab the winning ticket which is sealed in a large brown envelope. You think it would have been a nice touch to wear a blue bathing suit and Hawaiian shirt for the interview. You walk up to the building's entrance, pause to straighten your tie and then smile at the thought of your new life. You are a bit excited as you open the door, and walk into the lobby to wait your appointment.

Appendix B

Positive Low Arousal Story

You walk out of your house and get into your car. You look at your watch to check the time. You insert the key into the ignition and start your car. You are going to the television station for an interview by the office manager. You are applying for a position as an assistant manager. The position is identical to the one that you have now, although this location is closer to your home. On the way to the station, you see a grocery store and remember that you need some trash bags. As you turn into the parking lot, you see a sign that says one-hour visitor parking. You pull your car into the closest space, turn off the engine and grab your parking ticket and resume, which is sealed in a large brown envelope. You think that it would have been a better idea to wear your blue suit and white dress shirt for this occasion. You walk up to the building's entrance, pause to straighten your tie, and think of the possibility of starting a new job. You are a bit excited as you open the door and walk into the lobby to await your appointment.
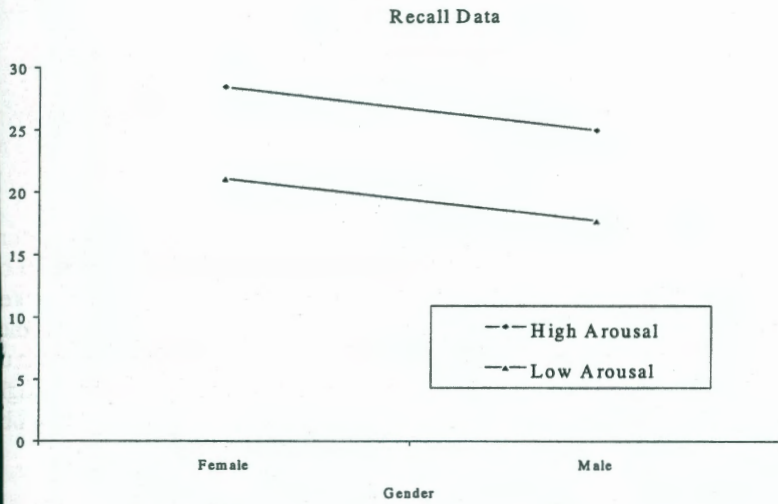
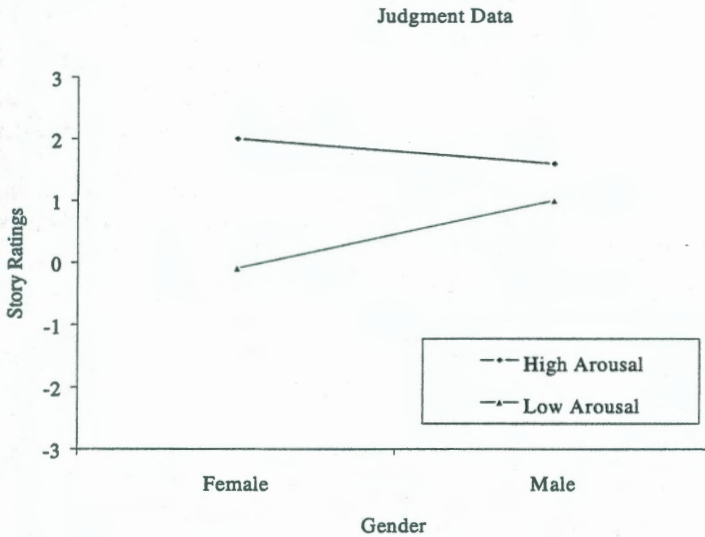Figure 1. Mean recall as a function of arousal (high and low) and gender (male and female).

Figure 2. Mean judgments as a function of arousal (high and low) and gender (male and female).

Designing a Blasticidin Resistance Construct for Use in Trypanosomes

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ABSTRACT

Trypanosome brucei is a parasitic protozoa that causes the disease African sleeping sickness. Treatme
for the disease at present is costly, ineffective, and sometimes deadly. Past research suggests that t
enzyme y-glutamylcysteine synthetase represents a possible point of medicinal enzyme inhibition. O
aspect of the work in progress centers around proving that the enzyme is required by the organism and
thus a possible drug target. The current study will involve disabling one of the y-GCS diploid genes
insertion of an antibiotic marker for blasticidin resistance. The experiment will involve using the PC
amplified blasticidin gene, which will be cut by restriction endonucleases and then flanked by pieces
the y-GCS gene. This piece of DNA will then be transfected into the trypanosomes. Exposing t
trypanosomes to blasticidin will force incorporation if the marker gives resistance to the antibiot
Eventually this will play a role in a system allowing for the selective expression of the y-GCS enzyme.

INTRODUCTION

Trypanosomes are parasitic protozoa that cause significant levels
mortality and disease in Africa and South America. The parasites come in mar
species and infect mammals using insects as an intermediate vector. Two speci
cause particular problems when present in human hosts. *Trypanosoma brucei* exis
in Africa and causes the disease African sleeping sickness. The parasites are pass
through the bite of the tsetse fly into the bloodstream. Upon infection t
trypanosomes migrate into the central nervous system and cause the infected pers
to exhibit neurological disease and drowsiness, thus the descriptive name of t
illness. *Trypanosoma cruzi* is another problematic parasite, which is present in i
estimated twenty-five percent of the South American population. It is also carried l
an insect vector and infection results in an acute or chronic weakening of the hea
leading to death. Treatments for *Trypanosoma brucei* are available. No treatme
exists for *Trypanosoma cruzi*.

At this point new therapies are needed to control the parasites. Treatmen
available now include medications that seem to inhibit essential enzymes in t
metabolic pathways of the organisms. Dr. Phillips' group is currently studyir
several enzymes that have been implicated as essential to the trypanosomes. E
understanding an enzyme's structure, mechanism and function, inhibitors can l
better designed to interfere specifically with the enzyme and thus lead to cell dea
while not harming the human host.

One enzyme that has been targeted for study is γ-Glutamylcystier
synthetase (γ-GCS), which forms the important cellular intermediate y-glutam
cystiene by addition of the two amino acids glutamate and cystiene. This produ

plays a role in the formation of typanothione, a molecule important in the trypanosomes for redox balance. At this point it is not known if the enzyme γ-GCS is required by the parasites. Sometimes, upon loss or inhibition of an enzyme, an organism can use other enzymes or metabolic pathways to make the same final product.

The best way to determine if the trypanosomes actually require γ-GCS is to make a construct that can "knock out" or remove the γ-GCS gene in the trypanosomes. If the enzyme is essential to the trypanosomes, removing the gene for the enzyme will kill the cells. This removal is done by preparing a stretch of DNA with ends similar to the γ-GCS gene. Since the sequences are similar the trypanosome DNA will undergo a phenomenon known as homologous recombination in which the new DNA segment replaces the old. The new segment only has to retain the similar ends of the former strand. The middle of the new strand can contain information for anything that the experimenter desires. The eventual goal is to remove both copies of the trypanosome γ-GCS and insert a gene construct that can be expressed in a titratable manner. This will allow a determination of the need for the γ-GCS enzyme by the organisms and thus its role as a possible drug target.

Homologous recombination actually occurs on a fairly rare basis. To determine which of the trypanosomes have taken up the desired DNA, a gene for resistance to an antibiotic has to be included on the new DNA. Knocking a trypanosome gene out requires four steps. At this point in time only three selectable markers are available for use in trypanosomes. At some point the same antibiotic must be used twice which can complicate the procedure. If a new antibiotic could be found that could be used as a marker, it would simplify the gene knock out process. My project involved making a new strand of DNA that incorporates a new antibiotic marker. The chosen antibiotic is called blasticidin. It has not been used before for this purpose with trypanosomes, so the importance of its potential success goes beyond this particular project.

EXPERIMENTAL METHODS

The final product that we wish to use with the trypanosomes is a linear piece of DNA that has the blasticidin resistance gene flanked by gene segments that can recombine into the trypanosome genome (see Figure1.) The initial construct to be used after the end of my project will be cut from the plasmid that I will be making called pLew 200.

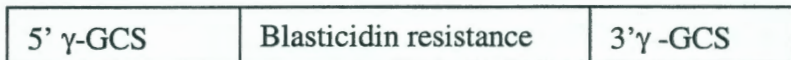| 5' γ-GCS	Blasticidin resistance	3'γ -GCS

Figure 1

The first step in constructing this sequence is to use restriction endonucleases to cut the desired fragments from plasmids already made. Restriction enzymes are special enzymes that cut DNA at certain specific sequences. Most leave an overhang that can be used to fuse the cut piece of DNA to another with a

matching overhang. The first plasmid employed was called pLew 100. The plasmid
was cut with the enzymes Dra III and BssH II to yield two fragments approximately
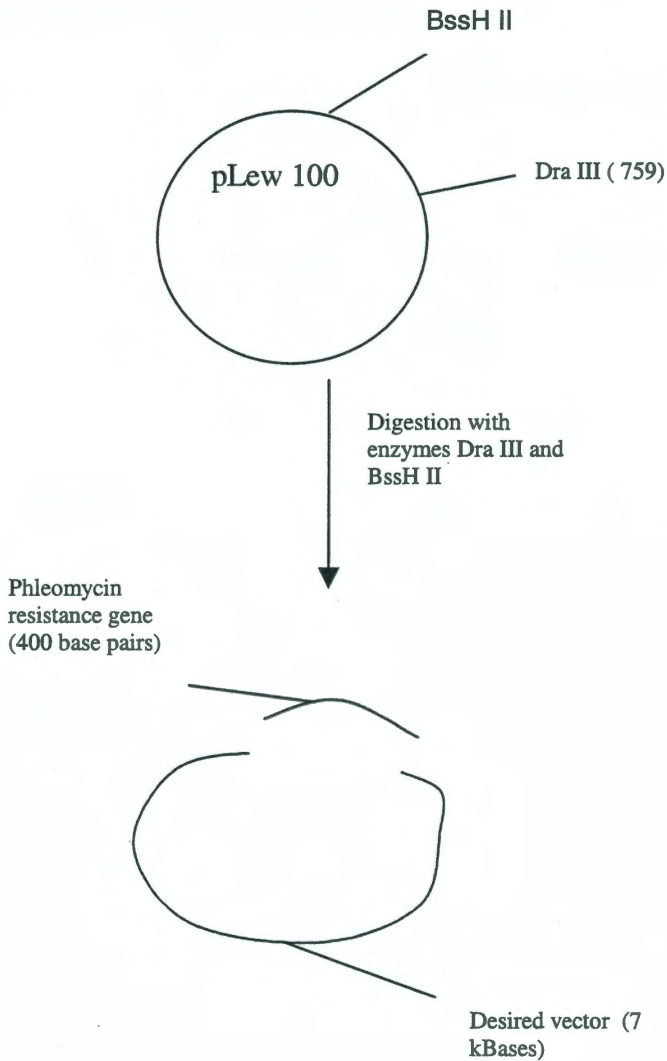400 and 7000 base pairs in size (see Figure 2.)

Figure 2

The larger of the fragments was purified by agarose gel electrophoresis, a method for separating a solution of DNA based upon size using a polymer gel exposed to an electrical voltage. The larger the piece of DNA, the slower it moves down the gel. The desired DNA was cut out of the gel and purified to yield the desired vector.

The gel on the right shows various pLew 100 digestions. The first row from the top is the double digest with Dra III and BssH II showing the cut vector and the small 400 base pair phleomycin resistance gene. The second and third rows are single digests and the fourth row is uncut pLew 100. The bottom row is a DNA marker that allows estimation of the other DNA sizes.
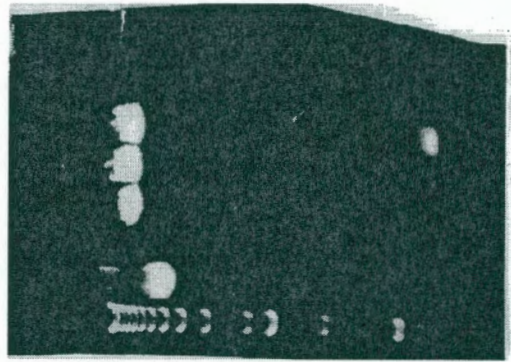

Figure 3

The next step was to cut the blasticidin resistance gene from its plasmid R-8-5 and purify it in the same manner with electrophoresis. It was also cut with the enzymes Dra III and BssH II to yield four fragments of 317,425,1261, and 1935 base pairs in size (see Figure 4.) The 425-sized piece containing the blasticidin resistance gene was gel purified.

BssH II

Dra III

R-8-5

Dra III (2586)

BssH II (2269)

Dra III (2586)

425 - Blasticidin resistance gene

(2586)

1935

Digestion with BssH II and Dra III
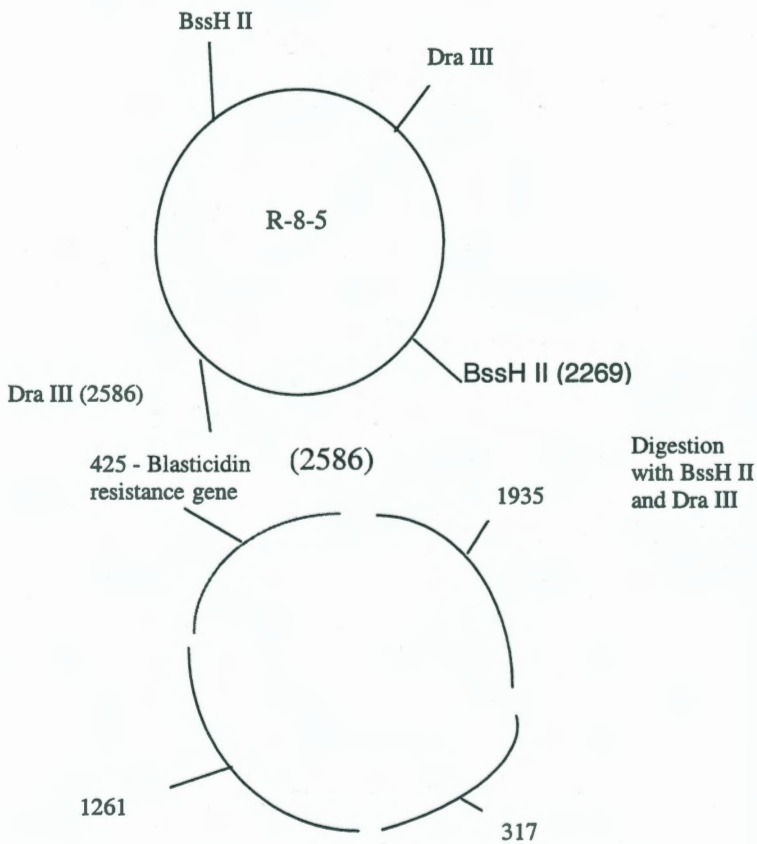
1261

317

Figure 4

The gel below shows a digestion of the R-8-5 plasmid with Dra III alone, BssH II alone, and with both enzymes. The fourth column is the double digestion. This reaction was run on a larger scale and then the 425 fragment was cut and purified.
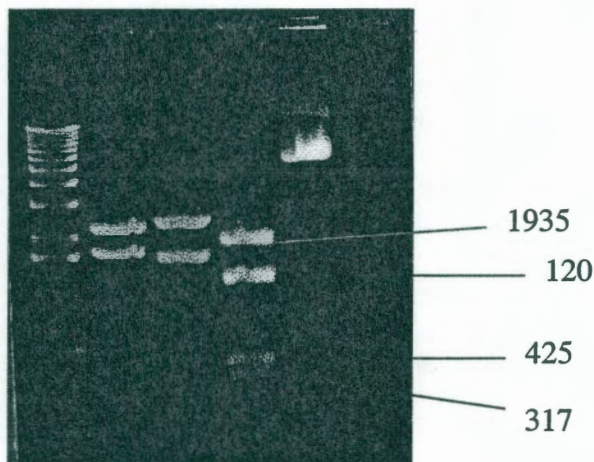

Figure 5

Once the two DNA pieces of interest were purified they were placed together in a small volume of buffer. When cutting both segments out of their respective parent strands the same enzymes (Dra III and BssH II) were used. All restriction endonucleases enzymes have a characteristic pattern of cutting that gives any DNA cut by that enzyme an identical end. Thus in the presence of an assisting enzyme called DNA ligase and temperatures around 15C the two fragments can be linked together to yield a new complete plasmid that contains the desired sequences of interest (see Figure 6.) This plasmid is named pLew 200.
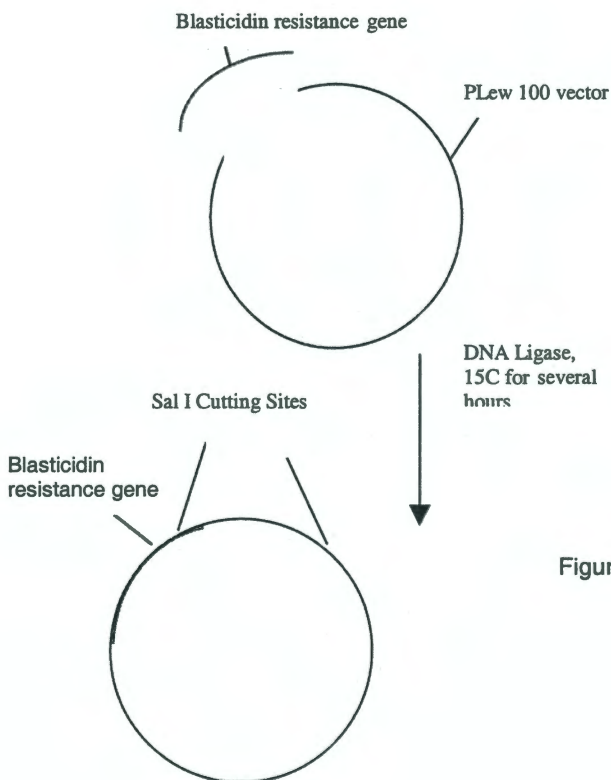
Figure 6

Ligation can be tricky and like recombination it does not always occur i high frequency. To determine if the plasmid we desired had ligated properly it ha to be inserted in special bacterial cells that were already prepared to take u extacellular plasmids. The process of introducing the circular plasmid DNA called transformation. Once transformed the cells were allowed to grow and wer then plated on an agar plate containing ampicillin. Since the original pLew 10 vector contained an ampicillin resistance gene, only cells that had accepted th plasmid survived. This did not necessarily mean that they had the correctly ligate form of the plasmid, just that some piece of the plasmid had entered the cell. Te bacterial colonies off the plate were then grown overnight in a broth also containin ampacillin and their plasmid DNA was subsequently purified. If everything ha worked correctly the purified DNA will represent the correctly ligated plasmid.

To test our new DNA one microliter of each solution was digested wit another restriction enzyme called Sal I. A Sal I site existed in both the short 40 base pair blasticidin segment and in the larger 7000 base pair segment of the pLe

100 plasmid. If the two had ligated in the correct fashion then upon digestion with Sal I two pieces of DNA should be seen, one being around 7000 base pairs and the other being around 400 base pairs. The gel below shows a Sal I digest with only the cut vector. The lack of the smaller 400 base pair fragment expected was a sign that the ligation had failed to connect the two fragments in the proper way.
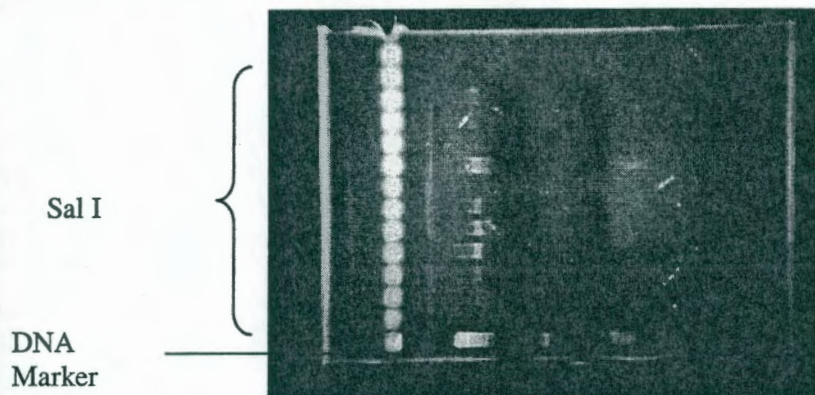

Sal I

DNA
Marker

Figure 7

Conclusion:
At the time this paper was written the two fragments had been purified several times only for the ligation to fail repeatedly. We had several ideas as to the problem with our attempts, including the rather finicky nature of the enzymes we were cutting with and the large size of the vector. The last day of my research we discovered a point mutation in the blasticidin gene that was in the site that the Sal I was supposed to cut. This prevented the enzyme from recognizing the site and thus no cutting was seen. It is probable that several times during the summer we had the correct product but that the enzyme we were using as a check could not recognize the cutting site and we assumed that incorrect ligation had occurred.

Automatic and Controlled Retrieval Processes in an Explicit Memory Test

Erica S. Kim

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ABSTRACT

There are conflicting findings in the literature as to whether retrieval processes in an explicit memory te
of words are controlled or automatic. To test which of these claims is true, an experiment was conduct
in which levels of processing (LOP) was manipulated at study and response deadline was manipulated
test. The LOP manipulation consisted of deep (semantic) or shallow (perceptual) processing of words
study. Subjects were given an oral stem-cued recall test. Subject's time to respond to each stem was 4
2 s, 1.3 s, or 0.8 s. Results showed that recall of deeply studied words decreased as deadline decrease
but recall of shallowly studied words remained stable. In addition, a significant correlation was observ
between performance in the shallow study condition and the baseline condition, whereas no su
correlation was observed between performance in the deep condition and performance in the baseli
condition. It is argued that the effects of deadline and the pattern of correlations indicate that bo
controlled and automatic retrieval processes were present at test.

INTRODUCTION

The ability to use conscious recollection to retrieve information fro
previous experience is called explicit memory (Schacter, 1987). In order to perfor
the memory test, subjects are directed to think back to some specific study episod
The most frequently used explicit tests are free recall, cued recall, and recognitio
A stem-cued recall test was selected for the present experiment. In this type of tes
stems (the first three letters of a word) are presented as cues. Subjects are instructe
to recall words from the study episode that can be used to complete the presente
stems.

Many studies have examined whether conscious strategic processing
necessary to create and/or retrieve explicit memory traces. Mulligan (1998) h;
shown that attention plays an important role in forming durable explicit memo
traces. He found that manipulating attention at encoding had a significant effect c
explicit memory performance. He also noted that the degree to which attention w;
divided was very important because a mild division of attention did not produce a
effect on the explicit memory test. Generally, most researchers agree that dividir
attention during encoding impairs explicit memory performance (Baddeley, Lewi
Eldridge, & Thomson, 1984; Craik, Govoni, Naveh-Benjamin, & Anderson, 199
Mulligan, 1998).

However, the effects of dividing attention at test are less clear. Baddeley
al. (1984) found that dividing attention at retrieval did not impair memor
performance. Baddeley et al. observed some effects of dividing attention at test, b
these effects were small and inconsistent. Baddeley et al. concluded that the proces
of retrieval is automatic.

In a more recent study, Craik et al. (1996) used free recall, cued recall, an
recognition memory tests to further test the notion that retrieval during an explic
memory test is automatic. They compared explicit memory test performance in

full attention condition to that in a divided attention condition. Subjects performed only the explicit memory test in the full attention condition, but a secondary task as well was performed in the divided attention condition. They found that accuracy in the explicit memory test and latency in the secondary task was worse in the divided attention condition. They argued that accuracy in the explicit memory test would have been even lower had the subjects not compensated for their decreased capacity by slowing their response times in the secondary task. In other words, subjects traded accuracy for speed. In contrast to Baddeley et al. (1984), they concluded that retrieval processes in an explicit memory test were not automatic.

One possible resolution to the contrasting findings of Craik et al. and Baddeley et al. is the possibility that both automatic and controlled processes are present at retrieval. Dual-process theories of explicit memory have been proposed previously. One dual-process theory of stem-cued recall test is the generate/recognize theory (Jacoby & Hollingshead, 1990; Nelson & Xu, 1995). The generation process consists of coming up with any word that begins with the presented stem. The recognition process then searches memory of the study episode for a specific item in order to determine whether the generated word was actually a studied word. The generation process is typically described as fast and automatic, whereas the recognition process is typically described as slow and strategic.

What kind of evidence would support the presence of both automatic and controlled retrieval processes in an explicit memory test? Simply dividing attention at test could reduce performance and indicate that a strategic process has been eliminated and that an automatic process has been left intact. However, such a finding would also be consistent with the presence of one single process that has been impaired. But, what if we could form two kinds of memory traces: one that principally relies on strategic retrieval and another that principally relies on automatic retrieval? Then impairing the strategic retrieval process would affect only those memory traces that lend themselves to intentional retrieval. The recovery of memory traces that lend themselves to automatic retrieval would not be affected. In short, incorporating both an appropriate test manipulation and an appropriate study manipulation in the same experiment could provide evidence for the existence of both controlled and automatic retrieval processes.

One appropriate study manipulation is suggested by levels of processing theory (LOP; Craik & Lockhart, 1972). In this theory, different ways of studying lead to different kinds of memory traces. A deep or semantic LOP encourages the formation of a number of associations with the studied words. These associations provide cues that can be used when subjects are attempting to strategically retrieve information. In contrast, shallow or perceptual LOP prevents the formation of these associations. As a result, there are few cues subjects can use when attempting to strategically retrieve information. Shallowly studied words lend themselves more to automatic retrieval.

One test manipulation that would be appropriate for reducing strategic processes would be to manipulate attention. However, as we have noted, this approach does not control the speed with which subjects are responding. This lack of control often results in little or no effects of dividing attention on accuracy in an explicit memory test. One way of operationalizing the control of response time is by

using a deadline, in which subjects are required to respond before a set time lim (Dosher, 1982; Wickelgren, 1977). This experimental approach is often referred t as the speed-accuracy tradeoff (SAT) paradigm. Not only can this paradigm be use to control response time, but it can also be used to control the use of strateg retrieval process. That is, when a long deadline is used, subjects have time t employ a controlled recognition process. When a short deadline is used, subjects d not have time to employ a strategic retrieval process and must resort to an automat retrieval process (e.g., generate process). In short, we hope that the SAT paradig will offer the same advantages as the divided attention paradigm but avoid th problems with the divided attention paradigm found in the studies of Baddeley et a and Craik et al.

In summary, the purpose of the present study is to demonstrate that bo controlled and automatic retrieval processes are present in an explicit stem-cue recall test. In order to do this, a study manipulation and test manipulation were use in the same experiment. LOP was manipulated at study: subjects studied som words deeply and other words shallowly. At test, the amount of time subjects had respond was manipulated. We predict that as the deadline is decreased, the subject ability to use a controlled retrieval process will be reduced. As a result, the recall deeply studied words should decrease as the deadline decreases. But, shallow studied words are automatically retrieved and, hence, recall of these words shou not be affected as the deadline decreases. In short, the LOP effect, which calculated by subtracting shallow performance from deep performance, will decrea as deadline decreases.

Another way to dissociate the automatic and intentional retrieval process by doing a correlational analysis. The idea was that guessing, as revealed in baseline condition, would be highly associated with automatic retrieval. In contra there should not be a correlation between guessing in the baseline and intention retrieval. Thus, we expected a significant correlation between performance in th shallow and baseline condition, but not between performance in the deep an baseline condition.

METHODS

Subjects

Forty-eight students and staff from The University of Texas at Arlingto participated. Each session lasted no longer than 40 minutes. Subjects were teste individually. All participants were native English speakers.

Materials

Seventy-two critical words were used. These words were low in frequenc as the mean frequency was 11 per million words. All words were concrete noun The stem from these words could each be completed by at least 10 English word The 72 critical words were divided into 3 groups of 24 words each. The groups wer then assigned to one of the three LOP conditions (deep, shallow, and baseline Assignment of the three groups of words to the three LOP conditions wer

counterbalanced across subjects. Micro Experimental Laboratory was used to construct the programs used in the present experiment.

Design

The experiment was a 4X3 mixed design, in which deadline (4 s, 2 s, 1.3 s, or 0.8 s) was a between-subjects factor and LOP (deep, shallow, and baseline) was a within-subjects factor. Twelve subjects were assigned to each deadline.

Procedure

Part I involved two types of encoding processes. In the deep or semantic processing condition, subjects were asked to judge the pleasantness of the words. Subjects pressed the "L" key on the computer keyboard if they judged the meaning of a presented word as pleasant. On the other hand, subjects pressed the "D" key if they judged the meaning of a presented word as neutral or unpleasant. In the shallow or graphemic processing condition, subjects counted the number of letters with enclosed spaces in the word. Letters such as "a", "o", and "p" have enclosed spaces whereas letters such as "c", "l", and "m" do not have enclosed spaces. For example, the word **moon** has two enclosed spaces while the word **spoon** has three enclosed spaces. For this task, subjects pressed the "L" key when they counted 3 or more with enclosed spaces and the "D" key when they counted 2 or less with enclosed spaces. The order of the study conditions was counterbalanced across subjects. In each condition, 24 words were presented one at a time at 2-second intervals in each condition on the computer screen.

Part II was a filler task, the purpose of which was to prevent the subjects from rehearsing the words seen in Part I. The filler task consisted of completing fragments of names of famous people and countries. The duration for this task was six minutes.

Part III consisted of an oral stem-cued recall task. Each trial began with the following sequence: a beep that lasted for 32 ms, a blank screen for 150 ms, a stem, and a blank screen for 250 ms before the next trial began. The stems were exposed in the center of the computer screen for 3.6 s in 4 s condition, 1.6 s in 2 s condition, 900 ms in 1.3 s condition, and 400 ms in 0.8 s condition. Subjects were instructed to say aloud only the words they remembered from Part I. Speed and accuracy were stressed before beginning the task and subjects were asked to avoid guessing too frequently. A tape recorder was placed in front of the subjects to record their responses. In all, 48 studied words, 24 baseline words, and 24 filler words were tested. Even though the subjects had an assigned deadline, responses made not too long after the stem disappeared (i.e. during the presentation of next stem) still counted as an accurate recall. The next stem was automatically presented at the end of the deadline. In the course of testing 48 subjects, only twice was a response given to an earlier stem.

RESULTS

The dependent variable was mean proportion of accuracy. This was calculated by dividing the number of recalled target words in a particular condition by the total number of target words in that condition. An alpha level of $p < 0.05$ was

used for all the statistical analysis. Figure 1 shows the mean proportion correct at each deadline for the three LOP conditions. It appears that the results validated our prediction that decreasing the deadline would lead to a decrease in the LOP effect. A two-way mixed design ANOVA was performed. Deadline (4 s, 2 s, 1.3 s, 0.8 s) was a between-subjects variable and LOP (deep and shallow) was a within-subject variable. The baseline level of the LOP variable was dropped because it did not vary across the levels of deadline. The interaction between deadline and LOP was significant, $F(6,88) = 3.74$, $MSE = 0.01$, $p < 0.05$.

A closer look at Figure 1 indicated that the decreasing LOP effect was probably caused by decreasing accuracy in the deep condition. In order to test this possibility, two one-way ANOVA were performed separately for deep and shallow study conditions across deadline. The effect of deadline was significant in the deep condition, $F(3, 47) = 3.81$, $MSE = 0.07$, $p < 0.05$. The mean proportion of accuracy decreased as deadline decreased for the deeply studied words. In contrast, the effect of deadline was not significant in the shallow condition, $F(3, 47) = 0.57$, MSE 0.00, $p > 0.05$. Recall of words from the shallow condition remained constant across the deadline.

In order to verify that memory for studied words in the shallow condition above performance in the baseline condition, a two-way ANOVA mixed design was performed in which deadline was a between-subjects variable and LOP (shallow and baseline) was a within-subjects variable. There was no interaction between deadline and LOP ($F(3,44) = 0.67$, $MSE = 0.00$, $p > 0.05$). However, the main effect for LOP remained significant ($F(1,44) = 35.98$, $MSE = 0.00$, $p < 0.05$), indicating that the performance in the shallow condition was indeed above performance in the baseline condition.

We also conducted a correlational analysis to provide converging evidence that people use controlled retrieval process to retrieve deeply studied words and automatic retrieval process for shallowly studied words. As noted earlier, we expected guessing (performance in baseline condition) to be associated with the automatic retrieval of shallowly studied words but there to be no correlation between guessing and performance in the deep condition. In accord with these expectations, correlation between performance in deep condition and performance in the baseline condition was $r = .035$, $t(46) = .237$, $p = .81$. In contrast, the correlation between shallow condition and baseline condition was $r = .379$, $t(46) = 2.78$, $p < .01$. These results indicate that there still seem to be some amount of LOP in the shallow condition in relation to baseline.

CONCLUSION

It appears that the incorporation of LOP and deadline did provide evidence that both controlled and automatic retrieval processes contribute to performance on an explicit memory test. Our results supported the prediction that long deadlines (4 s and 2 s) allow enough time for the recognition process while short deadlines (1.3 s and 0.8 s) restrict the use of recognition process. The mean proportion of accuracy in the deep condition dropped considerably between 2 s and 1.3 s. This indicated that subjects sacrificed slow intentional search process and the greater accuracy it provides in order to meet the demands of the shorter deadline. Although deadline manipulation affected the retrieval of deeply studied words, the mean proportion of accuracy in the shallow condition remained constant across deadline. Increasing the deadline did not have an effect on shallow condition because shallow processing does not promote the associations to the studied words that controlled retrieval processes rely upon. The results support the notion that shallowly studied words were recalled by using a fast automatic retrieval process.

Further evidence for the idea that deeply studied words are retrieved by controlled retrieval process and shallowly studied words are retrieved by automatic retrieval process was supported by correlational analyses. Automatic retrieval of studied words has often been referred to as informed guessing (Jacoby, Toth, & Yonelinas, 1993). Clearly, target responses in the baseline condition are also an indication of guessing (Light & Singh, 1987). There should be a correlation between the performance in the shallow and the baseline condition if shallow condition can be attributed to automatic retrieval. In support of this idea, we observed significantly moderate correlation ($r = .379$) between performance in the baseline condition and performance in the shallow condition. In contrast, there was virtually no correlation ($r = .035$) between performance in baseline condition and performance in the deep condition.

In conclusion, the research presented here provided empirical evidence for the presence of both controlled and automatic retrieval processes in an explicit memory test. Limiting the response time in stem-cued recall tasks affected the controlled retrieval of deeply studied words but not the automatic retrieval of shallowly studied words. The results of our experiment provided a context for understanding both Baddeley et al.'s claim that retrieval in an explicit memory test is automatic and Craik et al's claim that retrieval in an explicit memory test is controlled. Jacoby et al. (1993) have also argued for the presence of both automatic and controlled retrieval processes in an explicit memory test. Future research will clarify the contribution of automatic and controlled retrieval processes to explicit memory test.

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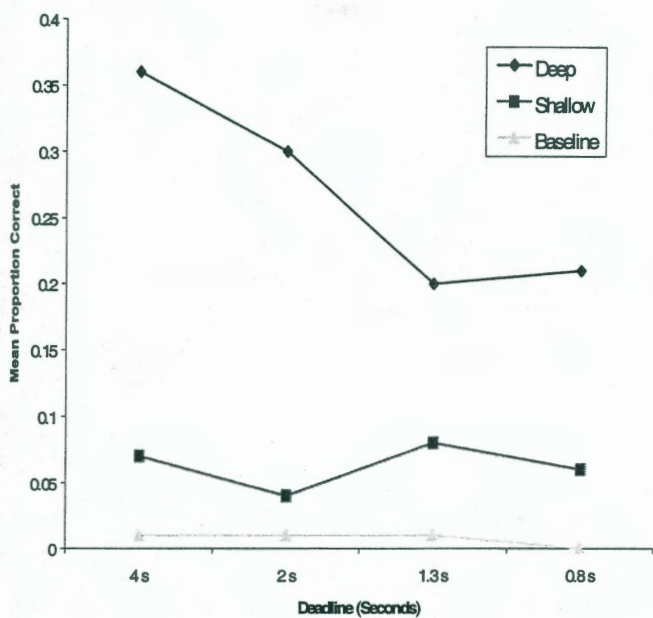
Figure 1. Mean proportion correct in stem cued recall test as a function of deadline (4 s, 2 s, 1.3 s, 0.8 s) and LOP (deep, shallow, and baseline).

A Comparative Analysis of Family Welfare Policies in Mexico, Sweden, the United Kingdom, and the United States

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ABSTRACT

This paper is a comparative secondary data analysis of social welfare expenditure policies of the United States with social expenditures in Mexico, the United Kingdom, and Sweden. Expenditures on family services and cash benefits in the United States are contrasted with similar expenditures in the selected countries, using OECD data which have been adjusted for comparison. The impact of the PRWOR (1996) is the context of the study, and the data challenge some of the most prevalent myths of social welfare in the United States. Key findings of the study are: that the United States spends less on family services and family cash benefits as a proportion of GDP or as a proportion of the budget than the other countries, and also that welfare services in the United States are considerably less effective than in other countries. Implications of the study include recommendations for changes in family-related policies in the United States.

PURPOSE

The purpose of this study is to examine welfare reform in the United States, to compare family policies in Mexico, Sweden and the United Kingdom and to evaluate the outcomes of social expenditure choices.

METHODOLOGY

The methodology for this study is a secondary data, comparative analysis of social welfare expenditures in four countries. The value of this study is that it seeks to analyze data from several disparate sources to determine how effective a country's social welfare expenditure choices are for the quality of life of its citizens in poverty.

DESCRIPTION OF SOURCES

Data Sources included the OECD (Organization for Economic Cooperation and Development) social expenditure database, the Statistical Abstract of the United States, the United Nations Report on the World Social Situation, and the UN Census International Database and World Population Reports.

The OECD social expenditure database is an important tool because it has been designed to facilitate international comparative analysis. OECD has collected social and economic data from various sources, for twenty-seven OECD member countries, and has assembled the information in tables of comparable units. For example, family cash assistance as a percentage of GDP [Gross Domestic Product] or as a percentage of public expenditure, at constant 1990 Prices and PPP [Purchasing Power Parities] in US dollars (Organization for Economic Cooperation and Development, 1998). The database provides information on thirteen social policy categories: Old Age Cash Benefits, Disability Cash Benefits, Occupational Injury and Disease, Sickness Benefits, Services for the Elderly and Disabled, Survivors, Family Cash Benefits, Family Services, Active Labor Market Programs

Unemployment, Health, Housing Benefits, and Other Contingencies. The focus of this particular study will be on Family Cash Benefits and Family Services.

The Statistical Abstract of the United States is an annual publication of the US Bureau of the Census. Each edition contains a section entitled Comparative International Statistics which includes population information from the US Census Bureau, economic information from the International Monetary Fund (IMF), and employment information from the US Bureau of Labor Statistics. Indicators of social well-being (e.g. life expectancy rates, under-five mortality rates, etc.) in different countries are also included in this report.

The United Nations Report on the World Social Situation is a quadrennial publication which provides an overview of critical issues in social welfare policy on a regional and individual country level. It is a solid resource for graphs and tables that illustrate the current social climate in the world.

The US Census International Database and the World Population Reports are online resources which provide current population information as well as population trend data. The online resource allows one to select a particular category, for example Population by Age, and to request information by region or country, by time period in years, and even by time intervals. The World Population reports are produced bi-annually and contain a summary of recent population trends, as well as tables and graphs that pictorially describe population statistics.

COMPARATIVE ANALYSIS

Midgley (1997) has articulated several benefits and challenges in comparative policy analysis. One of the benefits is that it equips countries with the necessary information to become more prepared to deal with globalization. Every day it becomes more apparent to ordinary individuals how global forces affect their lives (Midgley, 1998). The internet, airline travel, world trade markets, highly developed telecommunications systems make connections between countries a more commonplace occurrence. This is a globalization trend. Midgley (1998) notes that:

> Although globalization has many critics, it is unlikely that it
> can be halted. The revolution in communications technology,
> the rapid diffusion of culture and a significant increase in
> global trade have created powerful resources that cannot be
> controlled, let alone reversed. Many believe that globalization
> will bring benefits to those who are best able to adapt to this
> changing economic and political climate (p. 435).

Therefore, international comparative analysis can provide countries like the United States with more knowledge and flexibility to adapt to globalization.

Another advantage of comparative policy analysis is that it can be used to substantiate or refute normative statements. Normative statements are statements that we make in which we believe that what we do is normal and what others do is not. Midgley (1997) provides an excellent example of this when he states, that "...it is often claimed that the United States cannot afford its public welfare system..."

(p. 15) and that the costs of these programs are what have added excessively to th federal government's budget deficit. However, when compared to readily availabl international data, it is revealed that the federal deficit is not excessively high b international standards and "...that the US is not a high spender when it comes t social programs" (Midgley, 1997, p. 16). In reality "...the US spends less on soci welfare than most other industrial countries including many that have a far bett record of economic growth...." (Midgley, 1997, p. 16).

A major challenge to comparative social policy analysis is a lack comparable data which leads to methodological difficulties since not all terms a defined in the same way. An example of this is the concept of "social securit which signifies a social insurance program whose primary beneficiaries are senio and disabled individuals in the United States. In the United Kingdom, social securi has a much broader meaning. It provides income assistance on a virtually univers basis for most individuals who require it (Keithley, 1989). When studying sever income assistance programs, most information is only readily available in ea nation's currency. Thus, in order to compare equitably the amounts expended, o must find a commonly accepted conversion mechanism. For example, the OEC database employs the use of PPPs (Purchasing Power Parities) as an economicall derived method for comparing different currencies.

Midgley (1997) notes that another difficulty for researchers is obtainin accurate data. A study conducted by Estes (as cited in Midgley, 1997) found th much international data is unreliable because it has not been collected systematicall or rigorously, and thus should be interpreted with caution.

RATIONALE FOR COUNTRIES SELECTED
The Swedish Welfare State

Sweden is one of the most highly developed welfare states in the wor (Olsson, 1990). It was the first nation to institute paid parental leave both f natural birth and adoption (Olsson, 1993). Parental leave options are also availab for the period in which a child is transitioning from parent care to day care and f episodes of childhood illness. (Swedish Institute, 1996). The parental leave policy very generous and allows for a total of 360 days to be used between birth and th child's eighth birthday (Swedish Institute, 1996). Each parent in a two-pare family is allotted 30 days leave with an income benefit of 85 percent of their usu salary. The remaining hours can be taken in a 'lump sum" or may be utilized on part-time basis with part-time work outside of the home. The Swedish governmer appears to put a strong emphasis on the coordination of policies between work, hom and child care. Consequently, child allowances, subsidized child care, time off f childbirth or sick children are an expected part of this society's social welfar policies (Swedish Institute, 1999)

The Swedish welfare system is often referred to as a universal type becaus benefits are available to every resident, "...irrespective of occupation and, in man cases, regardless of whether the individual is gainfully employed or not" (Swedis Institute, 1997, p. 1). The public sector is responsible for the provision of soci services. Funding for the programs comes from taxes levied against residents an employers. Women make up 47 percent of the work force at this time and th

government assists them by providing generous parental allowances, child allowances, and day care provisions. The development of the Swedish welfare state occurred because of a conscious desire to create a society that would be more egalitarian (Olsson, 1989).

The Mexican Welfare State

There are two main reasons for selecting Mexico: because it is a close neighbor of the United States and because the social conditions in Mexico have an impact on the economies of contiguous American states (Texas, California and New Mexico). The Mexican welfare state is characterized by two types of social welfare provision: "... a social development sector and a social welfare category (Ward, 1986). The social development sector "... includes education, health, social security, labour, human settlements and public works" (Ward, 1986, p. 4). The social welfare category is "...for fixed capital expenditure on items such as rural and urban public works, the construction of hospitals, schools, health centres and housing "(Ward, 1986. p. 4). Thus, Ward notes that for Mexico, the term "social welfare" is a "...catch-all term that may mean a variety of things in different places" (Ward, 1986, p. 4). Overall, Mexico's social welfare systems are much less formal than those in the United States, the United Kingdom, and Sweden.

The United Kingdom's Welfare State

The United Kingdom was selected because it is a solid example of welfare pluralism. The welfare state in the United Kingdom contains a strong non-profit sector, which is coordinated with government programs, and also exhibits a growing tendency toward privatization of social services, especially in relation to residential homes for the elderly (Elliott, 1990). The major institutional programs of the British welfare state were established in 1945 following the publication of the Beveridge Report and the post-war election of the Labor government (Keithley, 1989). The new welfare state proposed a revolutionary "cradle to grave" philosophy of social security for all citizens, regardless of "...occupational or income differentiation" (Keithley, 1989, p. 309). The "cradle to grave" philosophy of social security for all citizens included provisions for universal healthcare availability, adequate low cost public housing, education, and full employment strategies (Keithley, 1989).

RESEARCH QUESTIONS

The above overview raises several questions which are important to the focus of this report. How effective is the welfare system in America today? How do US social expenditures on family services and family cash benefits compare to other countries? What percentage of the GDP and national budget is allocated for family service expenditures and cash benefits? What kinds of family services do these countries provide? What are the current outcomes of their present social expenditure choices? What can we learn from these countries?

WELFARE REFORM IN THE USA

The passage of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) drastically changed welfare provision in the

United States. Key alterations included: the replacement of Aid to Families wit Dependent Children (AFDC), JOBS (Job Opportunities and Basic Skills), an Emergency Assistance (EA) with Temporary Aid to Needy Families (TANF stringent work requirements for clients, time limited assistance, elimination c services to many immigrants, and overall reductions in services to low-incom families, the elderly, and disabled (Abramovitz, 1997; Karger & Stoesz, 1998; U.S Department of Health & Human Services [U.S. DHHS], 1996,1997, 1999). It als contained value-laden requirements which emphasized the "favored state" c marriage and the importance of two-parent families while highlighting "...th negative consequences of raising children in single-parent homes" (U.S. Congres 1996, p. 8). It established incentives for states to decrease the number of non-marit births and punished individuals, especially teens, who were unwed mothers (U.. Congress, 1996). Another critical piece of this legislation was the end of any feder entitlement to public assistance. Karger & Stoesz (1998) elaborate on this eleme when they state: "The principle of entitlement [meant] ... that states were n permitted to turn away those who qualified under the rules. Under TANF, no fami or child is entitled to assistance...each state is free to determine which famili receive assistance and under what circumstances" (p. 274). No longer would tl federal government provide "open-ended" funding on a matching basis to states f administration of AFDC. Instead, individual states would be provided capp funding in the form of block grants. These grants would be used to administer tl TANF program with the following federally mandated provisions: a five-year tin limit for federally funded assistance, stringent work requirements for all participan with a limited exemption for single parents of children under the age of six, and requirement that "unmarried minor parents... live with an adult or in an adul supervised setting and participate in educational and training activities in order receive Federal assistance" (U.S. DHHS, 1996, p. 5). The PRWORA significant altered the philosophy of welfare, which had been established in the New Deal. Jansson (1993) describes the climate which surrounded the evolution of the feder social programs of FDR's New Deal :

> The federal social programs evolved as much from necessity
> as philosophy; since the nation's citizens and its local and state
> governments teetered on the brink of bankruptcy, Americans
> had to take ameliorative action, but no philosophy of
> socialism, which extolled major governmental roles as well as
> redistribution of resources from the rich to the poor, had
> strong roots in the United States. Would Americans, then,
> institutionalize their social reforms of 1933 and 1934 or
> dismantle them at the first opportunity?
> (p. 165).

The efficiency, and effectiveness of FDR's national programs in 1933 and 193 which "...were widely perceived to be the difference between life and death f millions of destitute Americans" (p. 166) provided the impetus for a change American welfare ideology. This change in ideology was beneficial in assuring th

passage of The Social Security Act of 1935, which is considered to be the official beginning of the welfare state in America. (Abramovitz, 1996, 1997; Jansson, 1993; Karger & Stoesz, 1998). This act contained two social insurance programs; Old Age Retirement Insurance (more commonly referred to as Social Security) and Unemployment Compensation which were "...universal, nonstigmatized and popular" (Abramovitz, 1997, p. 311). The act also contained the original means-tested programs which provided"...federal grants to states for maternal and child welfare services, relief to dependent children (ADC) [Aid to Dependent Children; predecessor to AFDC] , vocational rehabilitation for the handicapped, medical care for crippled children, aid to the blind, and a plan to strengthen public health services" (Karger & Stoesz, 1998, p. 65). As a part of President Franklin Delano Roosevelt's (FDR) second new deal, this bill promised federal responsiblity for income assistance to individuals and families "...when the market economy could not ensure adequate levels of income and employment" (Abramovitz, 1997, p. 311). Consequently, the passage of the PRWORA in 1996 effectively ended welfare as we knew it.

CRITIQUES OF PRWORA
Before the passage of the Social Security Act of 1935, social welfare services were administered by the individual jurisdictions at their discretion. The influence of the Elizabethan poor laws was often felt in colonial times, within local colonies, as the authorities applied the distinctions of "deserving" and "undeserving" to potential applicants for public assistance (Jansson, 1993). Unemployed individuals were considered to be "undeserving" and were often forced into workhouses or auctioned off to low bidders (Jansson, 1993). At times children were sold as indentured servants to cover the debts of their families (Jansson, 1993). Also, in several colonies, laws were enacted that prohibited African Americans from receiving social welfare assistance (Jansson, 1993). Throughout American history, the mythology prevailed that poor people remained poor because of some imperfection within themselves. The manner in which this country was settled, the rugged independence, hard work and self-determination that was required to succeed also contributed to a very strong, individualistic ethos (Hoefer, 1993; Jansson, 1993). Jansson (1993) proposes that Americans have created a "social welfare mythology" which justifies:

> ...their failure to develop a relatively generous welfare state. It includes the belief that social programs do more harm than good, that social problems can be easily solved, that problems can be avoided by creating equal opportunity, and that laissez-faire policies can suffice to solve social problems. We call these interrelated beliefs mythology because they are not supported by evidence (p. 324).

This mythology, coupled with "...Americans dislike of taxes..." (p. 324) and ongoing dislike for strong centralized government, has inhibited the development of a coordinated welfare state in America. In many ways, the current conservative

climate is reflective of these earlier times in the history of the United States. Welfare devolution, the delegation of public assistance programs from the federal government to the individual states, often appears to be a regressive step back to a time period before the New Deal when welfare policies were much more restricted and biased.

Another critique of the PRWORA is the lack of a coordinated national childcare policy. The strong emphasis on moving clients from public assistance to work training and work programs, which is an essential piece of this legislation, seemed to ignore the fact that most public assistance clients are mothers with childcare needs. The PRWORA included $22 billion over seven years to be used for childcare assistance (Karger & Stoesz, 1998). However, the Congressional Budget Office (CBO), has estimated that this amount is $1.8 billion short of what is necessary to provide adequate child care for all the welfare parents that must enter the workforce (Karger & Stoesz, 1998).

IMPACT OF PRWORA

Preliminary findings regarding the effects of the PRWORA, or "welfare reform" as it is commonly called, provide conflicting information. Political leaders and media releases provide glowing reports of the successes of welfare reform (U.S. Department of Health & Human Services [U.S. DHHS] 1997, 1999) as exhibited by "...large declines in the welfare rolls, an increase in recipients finding employment and a slight decline in the overall child poverty rate" (Children's Defense Fund [CDF] & National Coalition for the Homeless [NCH], 1998, p. 1). In this joint report by the CDF and NCH, entitled *Welfare to What? Early Findings on Family Hardship and Well-Being,* it is indicated that there "...suggests a far more mixed and troubling picture" (CDF & NCH, 1998, p.1). They acknowledge that there have been successes and encourage the continuation and dissemination of innovative programs which have provided needed work supports and wage supplements to ease the transition from welfare to work (CDF & NCH, 1998). However, several critical conclusions emerge:

♦ Only a small fraction of welfare recipients' new jobs pay above-poverty wages; most of the new jobs pay far below the poverty line.

♦ Many families who leave welfare are losing income or not finding steady jobs at all.

♦ Extreme poverty is growing more common for children, especially those in female-headed and working families.

♦ Many families leaving welfare report struggling to get food, shelter, or needed medical care; many are suffering even more hardships than before.

♦ Many families are not getting basic help (such as child care, medical coverage, food, or transportation) that might enable them to sustain work and care for their children on very low wages.

◆ Many families are denied cash assistance through little or no fault of their own; states often penalize families without assessing their ability to complete required activities.

◆ Some states and communities have created innovative and supportive programs for helping families find stable above-poverty employment (CDF, 1998, pp. 1-4)

MYTHS AND REALITIES OF SOCIAL WELFARE

Welfare reform in the United States often arouses strong emotions and opinions. Frequently several assumptions are regarded as fact: assumptions of "common understanding" about welfare, its programs, its clients and its outcomes. Karger and Stoesz (1998) have compiled several myths and realities about public assistance and welfare policies in the US. Five of the most common myths and their realities are explored below.

The first myth is *once on welfare, always on welfare*. In reality, more than 50 percent of AFDC recipients leave the welfare rolls within the first year of assistance. By the end of the second year, that number increases to 70 percent. Episodic usage of AFDC is not uncommon. The statistics show that "...by the end of seven years, more than 75 percent of those who left the welfare system returned at some point" (Karger & Stoesz, 1998, p. 267). This fact signifies the precarious financial situations that AFDC clients often find themselves in. For the period 1968-1989, it was determined that the average time on welfare was 6.2 years and that approximately 40 percent were short term users, 33 percent were episodic which meant that they cycled on and off welfare due to fluctuating financial crises, and 25 percent were long-term users. It was also established that in only about 50 percent of the cases was AFDC termination due to employment. It should also be noted that "long term recipients were generally those with the fewest market opportunities" (Karger & Stoesz, 1998, p.267). A critical analysis of these facts indicates that an emphasis on employment and "moving to work" programs is only a part of the solution for welfare reform.

The second myth states that *people on welfare are too lazy to work.* The reality is that most of the poor either work or desire a job, but their employment [status] frequently does not allow them to overcome poverty. In 1990 nearly two out of every three poor families with children (63 percent) included at least one worker; 25 percent of poor people lived in families with at least one year-round full-time employee (Karger & Stoesz, 1998, p. 269).

The third myth is that *unwed teenage mothers flood the welfare rolls.* The reality is that approximately 50 percent of recipient mothers began their AFDC tenure while they were under age 20. However, at any one time, they make up only a small portion of recipients. "In 1992, 8.1 percent of the AFDC caseload was headed by a teenage mother. Almost half (47.2 percent) of AFDC mothers were in their twenties, a third (32.6 percent) were in their thirties, and 12.1 percent in their forties" (Karger & Stoesz, 1998, p. 270).

The fourth myth states that *public assistance recipients are doing better than ever*. The reality is that they are doing worse. "AFDC benefits did not keep pace with inflation, having fell 43 percent (after adjusting for inflation) in the typical

state from 1972 to 1992" (Karger & Stoesz, 1998, p. 269). Thus, in a typical state this benefit level decrease amounted to a $279 monthly loss and $3,300 yearly loss.

The fifth myth has been selected to examine in detail from a comparativ analysis position. It states that *welfare is a high budget expenditure*. In reality i 1995 welfare or public assistance programs, AFDC, Food Stamps and Medicai accounted for only nine percent of the federal budget, as seen in Figure 1. Twent eight percent of the budget was allotted to social insurance programs, such as Soci Security and Unemployment Insurance (U.I.). Social insurance programs diff from public assistance programs because they are universal while public assistanc programs are "means-tested". In universal programs eligible participants recei benefits regardless of their personal wealth while "means-tested" programs require applicants to meet stringent requirements and to be classified as "indigent" befo being able to

Figure 1: MYTH V: Welfare is a High Budget Expenditure
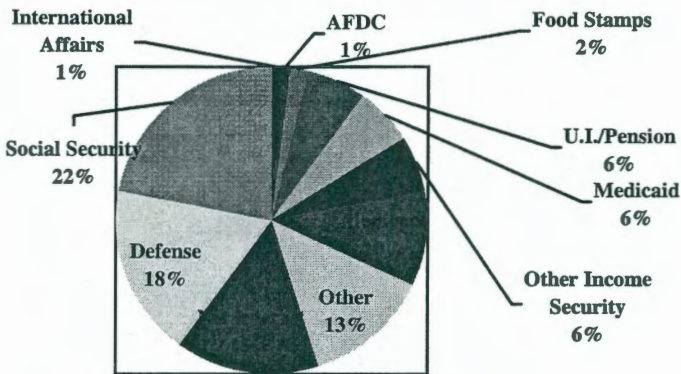
receive assistance. "Social insurance (programs)...requires beneficiaries to mak contributions to the system before they can claim benefits" (Karger & Stoesz, 199 p. 247) and there is little stigma attached to acceptance of these benefits. Publi assistance recipients, on the other hand, receive benefits directly from state a federal tax revenues, and there is a high stigma attached to them. Often publi assistance programs and social insurance programs are combined into one budg category as "Social Security and Welfare" (United Nations [U.N.], 1993, pp. 11 111), which then makes it one of the largest expenditures in a country's budget. Th creates a misleading picture of social expenditure. As an example, in the 1995 U

Figure 2: Family Service Expenditures in 4 Countries as a % of GDP
(1985 - 1995)

Percentage of GDP
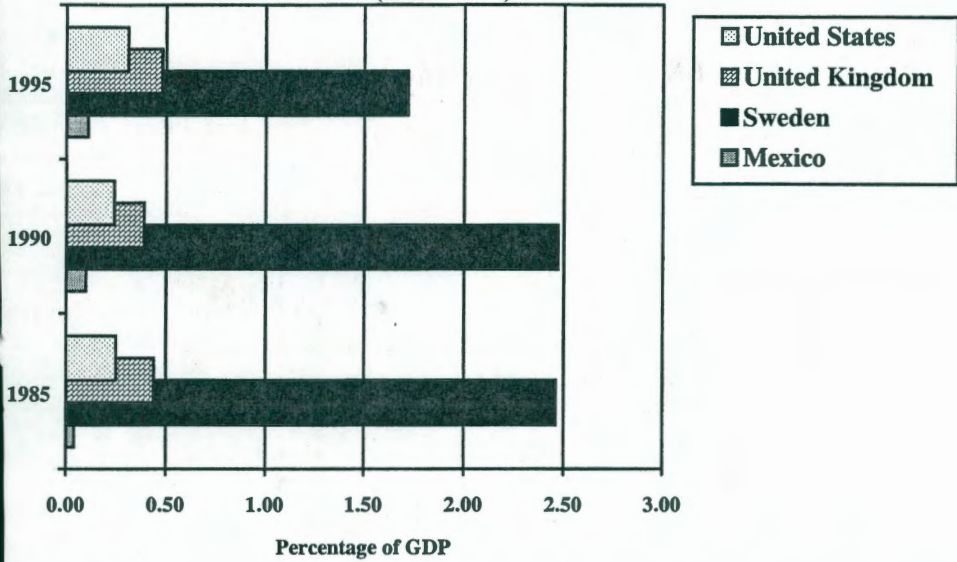
budget, a combined category of Social Security and Welfare would equal 37 percent of the budget. Therefore, if one compares Defense spending, which was 18 percent in 1995, to this category of Social Security and Welfare, Defense spending would equal less than half of the amount apportioned to social welfare expenditures. If we were to compare the actual public assistance allotment, 9 percent, to the Defense category, a different understanding of welfare expenditures emerges and one is left with a very different picture. It is also important to note that in the past, a greater portion of the federal budget was allocated for defense spending: 32.2 percent in 1972, 20.3 percent in 1980, and 24.8 percent in 1988.

DATA ANALYSIS

A comparison of family service expenditures for all four countries, Mexico, Sweden, the United Kingdom and the United States, is shown in Figure 2. It is evident from this graph that Sweden expends the highest amount for family services as a percentage of GDP among all four countries. Although there is an overall negative trend for family services in Sweden, with expenditures ranging from 2.46 percent of GDP in 1985 to 1.72 percent of GDP in 1995, Sweden is still the leader in this category. The United States ranks third, next to Mexico, with expenditures that range from .25 percent of GDP in 1985 to .31 percent of GDP in 1995. The United Kingdom's expenditures for this same category ranged from .44 percent of GDP in 1985 to .48 percent of GDP in 1995. In Mexico family service expenditures grew from .04 percent of GDP in 1985 to .11 percent of GDP in 1995.

The next four graphs (Figures 3, 4, 5, and 6) denote each country's family service expenditures by category for the ten-year time period 1985 to 1995. The clear bar on each graph marks the amount allotted to formal day care. Formal day care

expenditures are important within the framework of welfare reform in the Unite
States for two reasons, first, because of the PRWORA's emphasis on "welfare-to-
work" programs and, second, because of the critical relationship between work an
childcare. Sweden expended the highest amount, as a percentage of GDP, with 1.3
percent being allocated in 1995. For the same year, the United Kingdom allocate
.35 percent for formal daycare.

Figure 3: Family Service Expenditures in Sweden (1985-1995)

Legend:
- ■ Family Other Benefit In Kind
- ☐ Formal Day Care

X-axis: Percentage of GDP (0, 0.5, 1, 1.5, 2, 2.5)
Y-axis: Years (1985, 1990, 1995)
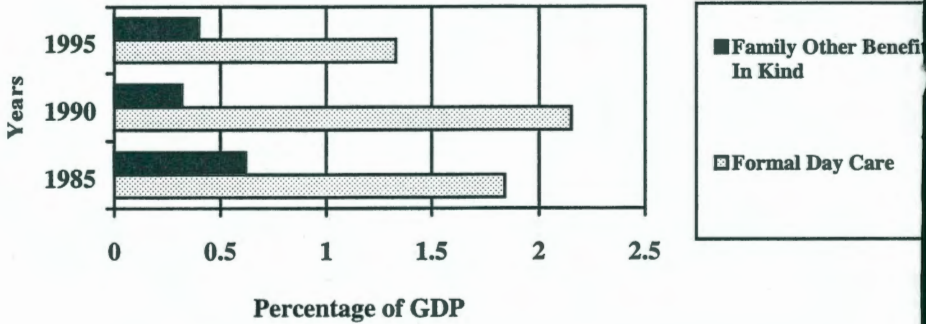
Figure 4: Family Service Expenditures in the United Kingdom (1983-1993)

Legend:
- ■ Family Other Benefits: In Kind
- ☐ Personal Services
- ☒ Formal Day Care

X-axis: Percentage of GDP (0, 0.1, 0.2, 0.3, 0.4)
Y-axis: 1983, 1988, 1993
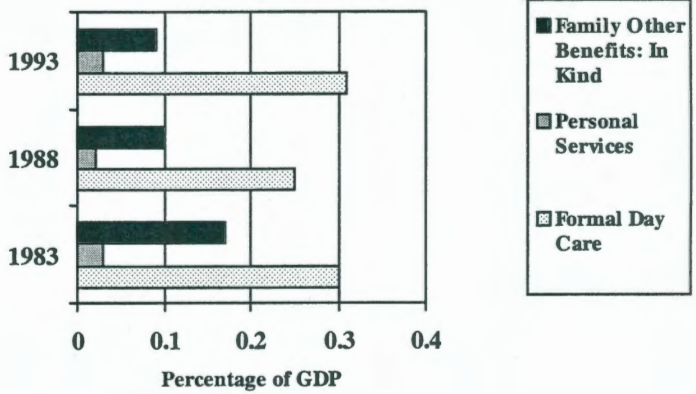
In the United States, no funds were allocated for formal day care expenditures un
1992, and then it was only available for At-Risk children at .01% of GDP. The
was no increase in this amount through 1995.

Figure 5: Family Service Expenditures in the United States (1984 – 1994)
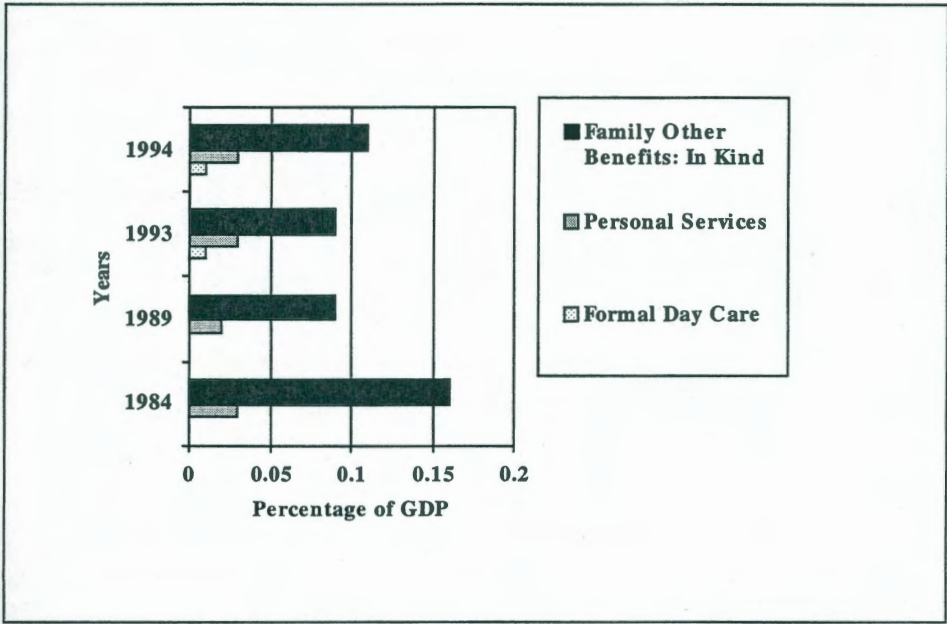
In Mexico, beginning in 1985, the allocation for formal day care was .02% of GDP, expanding to .04 percent of GDP in 1995. Thus, in this very important category for the coordination of work and family, Sweden ranks first, followed by the United Kingdom, Mexico and then the United States.

Figure 6: Family Service Expenditures in Mexico (1985-1995)
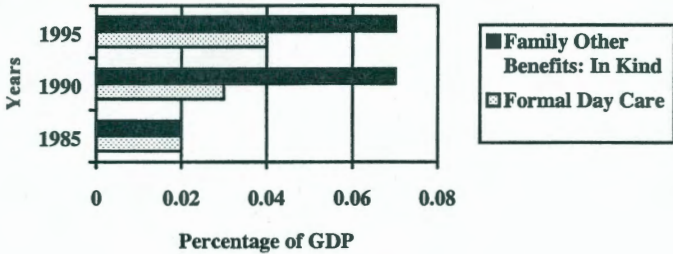
Another comparison of family service expenditures is provided in the next tab
(Table 1). It displays the categorical information in three different units
measurement: as a percentage of public expenditures and at current 1990 PP
(Purchasing Power Parities) in United States dollars.

Table 1: Comparison of Family Service Expenditures

		At Constant 1990 PPPs ($US)	At Percentage of GDP	At Percentage of Public Expenditure
US	1985	$12,267.78	.25	.72
	1995	$19,538.07	.31	.94
UK	1985	$3,548.47	.44	1.06 (1983)
	1995	$4,797.18	.48	.97 (1993)
Sweden	1985	$3,203.52	2.46	3.79
	1995	$2,572.04	1.72	2.58
Mexico	1985	$161.32	.04	N/A
	1995	$551.38	.11	N/A

It is evident, from this table, that Sweden again is the leader in overall family servi
expenditures with 1.72 percent of GDP in 1995.

Figure 7: Family Cash in 3 Countries as a Assistance Percentage of GDP
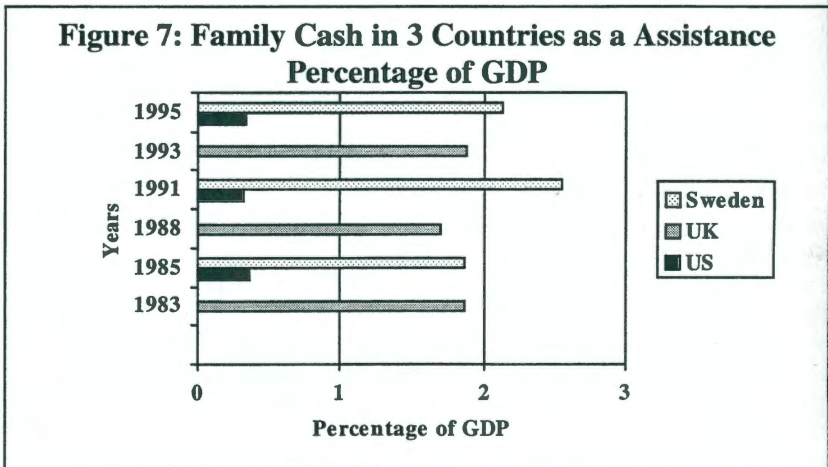
A comparative analysis of family cash assistance programs in the Unite
States, Sweden and the United Kingdom is presented in Figure 7. Mexico did n
have any cash assistance programs in this time period. Family cash assistance diffe

from the family service expenditures in its method of delivery. Family cash assistance is actual income assistance rather than in-kind services.

In the United States family cash assistance would mean the benefits administered to TANF clients, (formerly AFDC clients). In this representation of the data, a ten-year time span has been demarcated by examining the data for three specific years. In the United States and Sweden the expenditure information for the years 1985, 1991, and 1995 were considered. Since figures were unavailable for the United Kingdom in 1995, data was examined for 1983, 1988, and 1993 in that country.

A tabular representation of family cash expenditures in the United States, Sweden and the United Kingdom is displayed in Table 2.

Table 2: Comparison of Family Cash Expenditures

		At Constant 1990 PPPs ($US)	At Percentage of GDP	At Percentage of Public Expenditure
US	1985	$18,342.22	.37	1.08
	1995	$20,804.10	.33	1.00
UK	1985	$14,663.22	1.83	3.99 (1983)
	1995	$18,713.41	1.87	4.28 (1993)
Sweden	1985	$2,425.99	1.86	2.87
	1995	$3,174.06	2.13	3.18
Mexico		N/A	N/A	N/A

The results are presented in three different measurement units: as a percentage of GDP, as a percentage of public expenditures, and at constant 1990 PPPs (Purchasing Power Parities) in United States dollars. Sweden leads the way with family cash expenditures at 2.13 percent of GDP in 1995. The United Kingdom follows with 1.87 percent of GDP, and the United States at 1.00 percent.

It is clear from this data that the United States spends proportionately less than other countries on both family services and family cash benefits. The next step is to compare how effective each of these programs is at home. The comparisons will be among the three industrialized nations because similar data for Mexico were not available.

A review of the following information (Table 3) indicates that welfare programs in the United States are least effective in alleviating child poverty. The statistics show that Sweden's expenditures reduce the poverty level from 19.1 percent to 2.7 percent for children under age six. The U.S. expenditures, through government income transfers, reduce the poverty level for only 4.4 percent of children under age six (from 25.9 to 21.5 percent). Several other industrialized nations are available for comparison, the United Kingdom from 29.6 percent to 9.9 percent, France from 25.4 percent to 6.5 percent, and Canada from 22.5 percent to 13.5 percent.

Table 3: Children under age 6 at poverty level and effect of Government Income Transfer Programs. International Comparisons.

1991 Data	% Before Transfer	% After Transfer
United States	25.9	21.5
Canada	22.5	13.5
Netherlands	13.7	6.2
Sweden (1992)	19.1	2.7
United Kingdom (1986)	29.6	9.9
France (1984)	25.4	6.5

Adapted from Karger & Stoesz, 1998, Table 5.3, p. 132

The Kids Count 1996 report (as cited in Karger & Stoesz, 1998) als corroborates our initial finding that the U.S. welfare policies are less effective tha those of other industrialized nations (Table 4). Sweden's universal policies are mo effective in lifting children out of poverty as indicated by the reduction in th percentage of children in poverty after assistance. The United States ranks la again.

Table 4: Child Poverty in Developed Countries Before an After Government Assistance

Country	Before Assistance	After Assistance	Percent children lifted out of poverty
USA	26%	22%	17%
UK	30	10	67
Sweden	19	3	86
France	25	7	74
Australia	20	14	29
Israel	24	11	54
Canada	23	14	40

Source: Karger, H., & Stoesz, D., 1998. Adapted from Table 15.1, p. 377

KEY FINDINGS

Two key findings emerge after reviewing the data. The first finding is th the United States spends considerably less on family services and family cas assistance, as a proportion of GDP and also as a proportion of the budget, than oth countries. The second conclusion is that the welfare services in the United States a considerably less effective than other countries. Sweden and France are excelle examples of countries whose welfare policies and services stand in stark contrast the United States.

Implications For Family Policies In The United States

Three implications have been drawn from the results of this study. The first is that there needs to be more effort to change the public image of welfare by exposing the myths in the media. It is recommended that a social education class be established which will provide accurate statistical information to dispel the myths about welfare. Secondly, we need to develop family policies that lift people out of poverty into a sustainable economic situation. This proposal is very similar to the "Fishing Metaphor" which states that "If you give a man a fish, he eats for a day, but when you teach a man to fish, then he eats for a lifetime". The third implication relates to a plan for implementation of the second proposal. In order to accomplish this goal, we must begin by building bridges to full participation in the economy. Currently, research is being conducted and pilot projects are in place to encourage innovative strategies to achieve a new approach to social welfare in America. The following programs are examples of the types of procedures that may be utilized to meet this goal of full participation in the economy: Asset - based policies, Individual Development Accounts (IDA), developing access to credit for low-to-moderate income individuals, establishing more family loan programs, and exploring micro-enterprise strategies as a viable alternative for achieving self-sufficiency.

In conclusion, it is hoped that one day social welfare policies will reflect the dignified meaning proposed by Midgley (1997): "Social welfare is a state or condition of human well-being that exists when *social problems are managed, when human needs are met, and when social opportunities are maximized" (p. 5).*

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