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Abstracts
# Table of Contents

Adhikary, Nihar Deb; Chu, Weihua; McLean, Robert J. C. ........................................... 8  
Long Term Mixed Culture of Escherichia coli and Pseudomonas aeruginosa ........ 8

Alba, Brandy .................................................................................................................. 9
Worksheets for Authority: How the Institutional Documents of Texas Correctional  
Facilities Reflect, Reinforce and Reproduce Social Power Structures...................... 9

Araiza, Jose; Sandoval, Graciela; Sisk, Barbara; Miller, Melissa ......................... 10  
Measuring the Effect of Sustainable Messaging on College Students ................... 10

Box, Corrie Ann ......................................................................................................... 11
A Qualitative Comparison of the Kodaly Method by Lois Chosky and Kodaly Today by  
Micheal Houlanah and Philip Tacka ........................................................................ 11

Brown, Donald J.; Mali, Ivana; Forstner, Michael R. J. .......................................... 12  
No Difference in Short-term Temporal Distribution of Trapping Effort on Hoop Net  
Capture Efficiency for Freshwater Turtles ............................................................... 12

Bruno, Julie ................................................................................................................. 13
Life Satisfaction in Black, Mexican-American, and American Indian Elderly........... 13

Burgess, F. Grace ....................................................................................................... 14
Bridging the Gap: A Study of the Works of Mrs. E. A. Parkhurst .......................... 14

Calhoun, Courtni ........................................................................................................ 15
The Influence of Percy Goetschius on Pedagogy of Melody Construction .............. 15

Chandra, Monalisa; Dworkin, Anthony; Rodriguez, Nestor .......................... 16  
Indian Women Emigration to the United States in the Context of Economic  
Liberalization ............................................................................................................... 16

Chapman, Eileen ........................................................................................................ 17  
Gender Roles in Modern Dday Russia ...................................................................... 17

Cheney, Adam ............................................................................................................. 18
Finding the Cantos Firmus: A Contrapuntal Reading of the Poetry of Sylvia  
Townsend Warner ..................................................................................................... 18

Chin, Hong Kun and Min Lee, Daniel Chong .................................................. 19  
Moderating Effects of Subjective Knowledge or Objective Knowledge to Positively  
versus Negatively Framed Advertising Messages ................................................... 19

Chou, Jie and McDevitt, John ................................................................................. 20  
A Statistical Design of Experiments Approach to Microfluidic Optimization  
of the Programmable Bio-Nano-Chip Point of Care Device ................................. 20
Passing Off Death: Irene’s Subjectivation and Interpellation of Her Other........... 36

**Haislett, Robin** ........................................................................................................................................ 37

Nothing is Final: A Rhetorical Examination of Feminist Themes in the Video Game Final Fantasy VII.............................................................................................. 37

**Hanson, Christopher** ............................................................................................................................ 38

An Analytical View of Edmond Dédé’s Méphisto Masqué: An Argument for Recognition........................................................................................................... 38

**Haese, Taylor; Doyle, John; Zuniga, Alex; Birney, Adrienne; Shroyer, Michael** 39

The Impact of Cultural Differences on Early Education........................................................................... 39

**Hayasi, Mohammad and Asiabanpour, Bahram** ................................................................................. 40

Adaptive Layering Technique for the Fully Dense Freeform Fabrication (FDFF) Process .................................................. 40

**Hoffmann, Kevin** .................................................................................................................................. 41

Complex Emergencies and their affect on International Humanitarian Assistance . 41

**Hou, Yuting; Dharmasiri, Sunethra; Karunarathna, Nirmala; Dharmasiri, Nihal; Villareal, Vanessa** ................................................................................................................................. 42

Identification and Characterization of pic7, a Novel Arabidopsis Mutant Resistant to Auxin ............................................................................................................................................ 42

**Hsu, Wei-chao** ....................................................................................................................................... 43

An Exploratory Study of Consumer Decision-Making and Learning Styles Among the Millennial Generation in Taiwan................................................................. 43

**Iskali, Goniela and Zhang, Yixin** ........................................................................................................ 44

Invertebrate Diversity in Bracken Bat Cave: Effects of Bat Guano Subsidy .......... 44

**Jackson, Melissa** ................................................................................................................................. 45

The Wooster Group and Developments in Technology......................................................................... 45

**Jayaweera, Thilanka; Dharmasiri, Sunethra; Siriwardhana, Chamindika; Dharmasiri, Nihal** ........................................................................................................................................... 46

Plant Auxin Response Is Modulated through ABA Signaling in Response to Environmental Stress................................................................................................................................. 46

**Jones, Lisa and Schwinning, Susan** .................................................................................................... 47

Ecology and Restoration of Blackbrush (Coleogyne ramosissima) in the Mojave Desert.................................................................................................................................................... 47

**Kathare, Praveen Kumar; Dharmasiri, Sunethra; Dharmasiri, Nihal; Hartgrove, Kevin** ....................................................................................................................................................... 48

Characterization of a Small Auxin Up Regulated (SAUR) Gene in
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabidopsis Apical Hook Development</td>
<td>48</td>
</tr>
<tr>
<td><strong>Kelbore, Zerihun Getachew</strong></td>
<td>49</td>
</tr>
<tr>
<td>The Effects of Water and Sanitation on Child’s Mortality in Rural Ethiopia</td>
<td>49</td>
</tr>
<tr>
<td><strong>Kim, Min-jung and Min Lee, Daniel Chong</strong></td>
<td>50</td>
</tr>
<tr>
<td>Interaction Effects of Personality Traits and Mood on Message Framing</td>
<td>50</td>
</tr>
<tr>
<td><strong>King, Corey; Simpson, Thomas; Green, M. Clay; Baccus, John</strong></td>
<td>51</td>
</tr>
<tr>
<td>Habitat Use and Behavior of Great-Tailed Grackles (Quiscalus Mexicanus)</td>
<td>51</td>
</tr>
<tr>
<td>In Urban and Peri-Urban Habitats of San Marcos, Hays County, Texas</td>
<td>51</td>
</tr>
<tr>
<td><strong>Kleitches, Larry</strong></td>
<td>52</td>
</tr>
<tr>
<td>Geography and the Texas Accountability Rating System</td>
<td>52</td>
</tr>
<tr>
<td><strong>LaBuhn, Richard W.</strong></td>
<td>53</td>
</tr>
<tr>
<td>A Preliminary Study of the Effects that Four L.E.E.D. Gold Certified Elementary Schools have on Student Learning, Attendance, and Health</td>
<td>53</td>
</tr>
<tr>
<td><strong>Laws, Drew and Lai, Josh</strong></td>
<td>54</td>
</tr>
<tr>
<td>A Study of Perceived Attractiveness Regarding Women in Relation to Overall Workplace Competency Among Students at ACU</td>
<td>54</td>
</tr>
<tr>
<td><strong>Lelo, Linda</strong></td>
<td>55</td>
</tr>
<tr>
<td>Understanding the Experience of African American Visitors at the African Burial Ground National Monument</td>
<td>55</td>
</tr>
<tr>
<td><strong>Lopez, Andres</strong></td>
<td>56</td>
</tr>
<tr>
<td>Latino Culture in Nilo Cruz’ Anna in the Tropics</td>
<td>56</td>
</tr>
<tr>
<td><strong>Man, Jenny; Zheng, Dianhan; Loh, Alice; Young, Lucy; Lu, Qian</strong></td>
<td>57</td>
</tr>
<tr>
<td>Evaluation of a Culturally Sensitive Mentorship Program for Minority Breast Cancer Survivors</td>
<td>57</td>
</tr>
<tr>
<td><strong>Martinez, Nicole; Surez, Eileen; McLaughlin, Kirsten; Seliger, Doug</strong></td>
<td>58</td>
</tr>
<tr>
<td>Facebook Affects Interpersonal Relationships among College Students</td>
<td>58</td>
</tr>
<tr>
<td><strong>McArthur, Christian and Ameri, Farhad</strong></td>
<td>59</td>
</tr>
<tr>
<td>An Ontological Approach to Manufacturing Supplier Discovery</td>
<td>59</td>
</tr>
<tr>
<td><strong>McFadon, Chad</strong></td>
<td>60</td>
</tr>
<tr>
<td>Women as Intercessors: A Reinterpretation of the Role of Women in Chaucer’s Tales</td>
<td>60</td>
</tr>
<tr>
<td><strong>McKinney, Kevin</strong></td>
<td>61</td>
</tr>
<tr>
<td>Highlighting the Linguistic Etymology of the ‘Lord’ Glyph from Mayan Hieroglyphics</td>
<td>61</td>
</tr>
</tbody>
</table>
McMullin, Lee ........................................................................................................ 62
Does Developmental Reading Benefit Hispanic Males? ........................................ 62
McNeal, Frances .................................................................................................... 63
“Sacred Activism” in the Face of Colonialism: The International Council
of Thirteen Indigenous Grandmothers................................................................. 63
Merle, Patrick ..................................................................................................... 65
The American Correspondents in Paris, an Elite Group Overseas ......................... 64
Merritt, Lisa ....................................................................................................... 65
Masculine Anxiety and Feminine Virtue: Prostitution in Second Empire Paris ...... 65
Moore, Todd and Dixon, Richard ...................................................................... 66
Seasonal and Annual Temperature Trends in Texas.............................................. 66
Morgan, David T.; Green, Clay; Morrison, Michael ............................................. 67
Foraging Behavior and Food Availability for the Black-Capped Vireo
(Vireo atricapilla) ............................................................................................... 67
Mursch, Erin ....................................................................................................... 68
Comparing Methods: Three Approaches to Teaching Spanish Object Pronouns..... 68
Nalajala, Naveen and Tongdan, Jin ................................................................... 69
Communication Technology-A Survey on Its Application in Power Grid Automation
............................................................................................................................. 69
Ness, L. Renee .................................................................................................... 70
Sustainable Cambodia: Collaboration in Rural Community Development ............. 70
Newsome, Lorena .............................................................................................. 71
Shifts in Cultural Views of Female Madness and Sexuality: Aging Alice in Film
Adaptations of Alice in Wonderland ..................................................................... 71
Oyeyipo, Elizabeth ............................................................................................ 72
An Empirical Study of Requirements Management in an Agile-Scrum Development
Environment ....................................................................................................... 72
Peart, Wesley ...................................................................................................... 73
Theoretical Aspects of Modern Electronic Dance Music....................................... 73
Pope, Colin ......................................................................................................... 74
Poetry Anonymous: How Increased MFA Admissions Will Rejuvenate Poetry .... 74
Prehn, Patricia .................................................................................................. 75
Gaston Bachelard’s Poetics Applied to James Joyce’s Dubliners: A Phenomenological
Reading of “Clay,” “The Sisters,” and “A Painful Case”...................................... 75
Quiroz, David Alexander .................................................................................... 76
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcoming This Unfortunate Condition: Progressivism and the Birth of Compulsory Sterilization in Indiana, 1907-1909</td>
<td>76</td>
</tr>
<tr>
<td>Razafindratsima, Onja H.; Meza-Lopez, Maria; Mehtani, Siya; Dunham, Amy</td>
<td>77</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
</tr>
<tr>
<td>Rhoton, Jayson</td>
<td>79</td>
</tr>
<tr>
<td>Rosales, Thelma</td>
<td>80</td>
</tr>
<tr>
<td>Sampath, Veeraraghavan and McClellan, Stan</td>
<td>81</td>
</tr>
<tr>
<td>Saunders, Michael P.</td>
<td>82</td>
</tr>
<tr>
<td>Scalise, Jonathan L.; Simpson, Thomas; Rose, Francis; Baccus, John</td>
<td>83</td>
</tr>
<tr>
<td>Sheedy, Crystal</td>
<td>85</td>
</tr>
<tr>
<td>Shewmaker, Jennifer; Spain, Brit’ny; Lozano, Grace</td>
<td>86</td>
</tr>
<tr>
<td>Slone, Kailey</td>
<td>87</td>
</tr>
<tr>
<td>Stotlau, John</td>
<td>88</td>
</tr>
<tr>
<td>Stine, Melanie</td>
<td>89</td>
</tr>
<tr>
<td>Sampath, Veeraraghavan and McClellan, Stan</td>
<td>81</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
</tr>
<tr>
<td>Rosales, Thelma</td>
<td>80</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
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<td>Rosales, Thelma</td>
<td>80</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
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<td>Rosales, Thelma</td>
<td>80</td>
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<td>Reed, Daniel</td>
<td>78</td>
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<tr>
<td>Rosales, Thelma</td>
<td>80</td>
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<tr>
<td>Reed, Daniel</td>
<td>78</td>
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<tr>
<td>Rosales, Thelma</td>
<td>80</td>
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<tr>
<td>Reed, Daniel</td>
<td>78</td>
</tr>
<tr>
<td>Rosales, Thelma</td>
<td>80</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
</tr>
<tr>
<td>Rosales, Thelma</td>
<td>80</td>
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<tr>
<td>Reed, Daniel</td>
<td>78</td>
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<tr>
<td>Rosales, Thelma</td>
<td>80</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
</tr>
<tr>
<td>Rosales, Thelma</td>
<td>80</td>
</tr>
<tr>
<td>Reed, Daniel</td>
<td>78</td>
</tr>
</tbody>
</table>
Taylor, Alicia; Beall, Gary; Dharmasiri, Nihal; Zhang, Yixin; McLean, Robert... 90
Carbon and Clay Nanoparticles Provoke Numerous Responses in Salmonella Enterica
Var. Typhimurium and Escherichia Coli ............................................................. 90

Toothman, Delaina .......................................................................................... 91
Bureaucracy in the Standard American Textbook: An Update to Cigler and
Neiswender ...................................................................................................... 91

Tucker, La’Shundra N. ................................................................................... 92
A Convicted Felon Prevailing on a Claim under 42 U.S.C § 1983 .................... 92

Vélez, Lucy Guevara ..................................................................................... 93
CARE for Student Retention in GED Classes: Preventing the “Double Dropout” 93

Warren, Christopher; Ott, James; Veech, Joseph ......................................... 94
Habitat Affinities of a Neotropical Migrant Warbler at the Southern Edge of Range 94

Waxler, Chad and Lee, Byounghak ................................................................. 95
Electronic Structure of Semiconductor Random Alloys: Direct-to-Indirect Band
Crossing in AlxGa1-xAs .................................................................................. 95

Whitney, Suzanne ......................................................................................... 96
The Effects of Habitat Alteration and Human Disturbance on Nesting Bald Eagles in
South Carolina ................................................................................................ 96

Williams, Desaréé .......................................................................................... 97
Where I Stand: Changing Perceptions of Race and Discrimination ................. 97

Williams, Justin W. ....................................................................................... 98
A March for War? A Content Analysis of Fox News and NPR from September 17,
2001 through March 17, 2003 ....................................................................... 98

Wubbena, Zane C. .......................................................................................... 99
Cognitive Level of Development and Mathematical Fluency of First Grade Children 99

Zere, Tesfalem R.; Chu, Weihua; Weber, Mary; Wood, Thomas;
Whiteley, Marvin; McLean, Robert ............................................................... 100
Role of Secondary Signaling Pathways (cAMP & c-di-GMP) as a Mechanism
by which Escherchia coli Can Coexist with Pseudomonas aeruginosa .......... 100
We are studying mix culture of bacteria. In nature bacteria are present as heterogeneous group of microorganism. Most of the microbiological study has been conducted on pure culture of bacteria. So, it is always exciting to check the effect of living with other organisms. The main objective of our study is to check the competition between organism in co-culture and also the changes happening after mixing them. Our second objective of the project is to grow them for long period. We have designed an experimental evolution experiment with bacteria as model organism. As mammals have long life span it is almost impossible to use them as model, but as bacteria need very short time to replicate and also mutation rate is higher they are perfect for this kind of experiment. So over all, we wanted to see the effect of growing bacteria in a mix culture over long time span. We also grew pure culture for long term to serve as control. We have used two different strains of Pseudomonas aeruginosa and a single strain of Escherichia coli. All of the strains have fully sequenced genome. We grew them in Luria-Bertany broth as medium. So, we mixed two bacteria in broth and incubated at 37°C for 24hrs, and then the old culture was inoculated in a new LB broth medium. We continued this experiment for 60 days while also counting the generations. We measured absorbency of the cultures just after transfer and after 24h incubation using spectrophotometer. As bacteria double when they generate new daughter cells it was considered that when the absorbency doubled the initial reading, then the bacterial population has also doubled. We have done competition test every week by isolating them on Antibiotic media and found that both of the bacteria seem to grow well together. Then we tried to characterize other properties of them. We found that different virulence factor namely pyocyanin, quorum sensing molecules, elastase, and alkaline protease secretion of P. aeruginosa have been changed. It is also found that indole secreted from E. coli is important for their survival in mix culture. In Thin layer Chromatography P. aeruginosa seem to be losing a quorum sensing spot in co-culture. Also pyocyanin production was higher in mix culture. Currently we are exploring any biochemical changes that might happen during long term mix culture by performing Biolog assay. In future we hope to do phenotypic micro-array to characterize the changes.
In the book *The Rich Get Richer and the Poor Get Prison*, Jeffrey Reiman outlines the connection between social class and imprisonment. He argues very convincingly that “the acts defined legally as crimes, the acts treated seriously as crimes, tend to be the acts committed by poor people” (xi). While contemplating this relationship, I began to investigate the extent to which the types of institutional texts encountered and responded to by prisoners in Texas correctional facilities reinforce or resist these social structures, because institutions, through their use of discourse, “have the power to foster particular kinds of identities to suit their own purposes” (Mayr, *Language and Power* 1). The questions this study sought to investigate include: Do the institutional texts in correctional facilities reflect, reinforce, or resist class-based hierarchies or definitions of criminality? Do these documents actively work to reproduce the social relations they reflect? How do the institutions, via these texts, shape what is being written? What do these documents reveal about power hierarchies and concepts of identity within the institution itself?

To address these questions, I conducted document analysis of a sample of institutional forms taken from two different Texas correctional facilities (one county jail and one state prison—neither of which shall be referred to by name). The various documental features that were analyzed include specific language choices, font type and size, page layout, and the genre of the worksheet as it relates to the selected texts. Analysis of these documents revealed that they enforce association of inmate identity with signifiers of criminality to an unexpected degree while reinforcing institutional power hierarchies. However, document analysis also revealed that these texts reinforce class-based assumptions regarding both prisoners and staff by strictly controlling the ways in which both groups are able to organize and present information.
This research comes in light of Texas State University- San Marcos’ Common Experience. The Common Experience is a yearlong initiative designed to spark a common intellectual conversation across the university. With this conversation, administrators and student hope to foster a sense of community. The Common Experience theme for 2010-2011 is "Sustainability: Science, Policy, and Opportunity". That conversation is ignited through events organized by student organizations and campus departments in an effort to market, to promote and to education students, faculty and staff about positive environmental efforts in and around the university. With this unprecedented effort to increase Texas Student University’s environment awareness and environmentalism an important topic to all campus members, this study seeks to answer two important questions: how do Texas State University-San Marcos students perceive the university’s sustainability messaging and to what extend those messages change their attitudes and intentions to change their behavior?

Sustainability is the umbrella term for all positive environmental practices, theories and life styles. According to the World Summit of Sustainable Development (2002), the definition of sustainable development is a way to modify individual and societal lifestyles toward protecting the environment and achieving social equity in order to understand the challenges society faces, and the progress it has made to overcome them. The theory of planned behavior (TOPB) (Ajzen, 1988) indicates that behavior is predicted by three constructs: 1) attitude of an individual determined by behavioral beliefs and evaluation of outcomes, 2) subjective norms based on normative beliefs and motivation to comply, and 3) perceived behavioral control based on controlled beliefs and perceived power. The overall theory studies an individual’s personal control over carrying out the behavior. Based on TOPB, the authors expect “students’ attitude toward sustainable messages” will impact their intentions to adopt environmentally friendly sustainable practices.

In order to measure the impact of sustainable messages, a survey with a convenience sample of 200 college students will be employed. The data will be collected at Texas State University during the span of two weeks.

The practical implication of the findings will be help college administrators understand student behavioral intentions to sustainable practices and created effective campaigns.
Some previous studies concerning music education methods such as Kodály, Orff, or Suzuki have compared competing methodologies to each other. Various research considered the effectiveness of techniques characteristic to various methods. Some historical research documented the development of the Kodály methodology in Hungary and North America although more research is necessary. However, to understand a methodology, there must be analysis of the various curricula designed to support that methodology. For holistic comprehension, consideration of the purpose and context for which the curriculum was designed is essential. Mainly, in what way does the vision and context of the author affect curriculum development? More specifically, what was the author’s personal vision for the work? How did that vision affect the organization of the curriculum? How did the philosophy of teaching of the author affect personal vision and the resulting curriculum?

In response to the research questions, two curricula with similar pedagogical philosophies were selected. The selected internationally recognized publications were The Kodály Method by Lois Chosky and Kodály Today by Micheál Houlehan and Philip Tacka. Published in different decades, the comparison provided significant insight.

Due to the verbal quality of curricular data, a qualitative comparison was considered the most appropriate analytical device. Triangulation consisted of three facets of analysis. First, the context of the curriculum was established through biographical research and author communication concerning vision and purpose for the respective curricula. Secondly, confirmation of the data was established through third party informal interviews about the respective authors.

The final component of triangulation was curriculum analyzation. Summative analysis and coding techniques were used to analyze both curricula. Through the process of unitization, each page was considered a separate data unit and assigned a category code. The codes were grouped together to identify emerging themes. The results from the category assignments along with the chapter information were entered into a statistical software called SPSS Statistical Analysis Software. Data was analyzed for the mode of each chapter and code category code.

Finally, the statistical results were compared to the vision and context expressed by the personal communication. Analysis from personal communication and statistical analysis indicated that indeed the personal vision and purpose significantly affect curriculum development. Future implications include a greater use of the role of context as a foundation for analysis of both curriculum and pedagogical techniques.
We investigated the influence of trapping duration on freshwater turtle captures using baited hoop nets. We trapped 9 ponds in the Lower Rio Grande Valley and 6 ponds in the Lost Pines ecoregion areas within the state of Texas in summer 2010 using high-intensity, short duration trapping (40 traps/1 day) and low-intensity, longer duration trapping (10 traps/4 days). We found that number of captures was not different between sampling schemes. However, the mean capture-rate was twice as high after the first day of low-intensity trapping. This study showed that researchers seeking to maximize captures per-unit-effort (CPUE) should focus on the least time-intensive, labor-intensive, and expensive way to complete the trapping effort, rather than short-term temporal distribution of trapping effort.
Previous research concerning life satisfaction of the minority elderly has focused mainly on comparisons to the white elderly and generally has treated minorities as a homogenous group. The present study investigated life satisfaction among elderly blacks, Mexican-Americans, and American Indians, and comparisons were found that a canonical variable strongly correlated to education and self-concept provided significant separation between the racial groups. Subsequent univariate ANOVAs and post-hoc comparisons revealed that black elderly scored significantly higher on two subscales of the Salamon-Conte Life Satisfaction in the Elderly Scale (LSES): daily activity and self-concept. It is concluded that minority groups should not be considered as a simple homogenous group.
Historians contend that the primary relationship American women had with music at the beginning of the nineteenth-century belonged almost solely in the realm of domestic education. At the beginning of the nineteenth-century women’s compositions were primarily for the home, such as parlor songs. By the end of the century woman composers such as Amy Beach were composing large-scale art music. According to Edith Tick in her book, *American Women Composers before 1870* (1985), around the mid nineteenth-century a number of changes occurred, resulting in a period of transition for women composers.

Early American women composers such as Mrs. E. A. Parkhurst have been relatively ignored by music historians and are "barely represented in standard reference works." Therefore, in this presentation I will give an overview assessment of the compositions of Mrs. E. A. Parkhurst in order to determine the extent to which these works bridge the gap from amateur to professional.

Mrs. E. A. Parkhurst is known for composing a number of successful works during the 1860’s when the patriotic fervor and overwhelming devastation that accompanied the Civil War became the inspiration for many musical compositions. Several women saw this as an opportunity to expand their musical talents beyond domestic performance. As an organist and pianist of “natural ability,” she has composed over 90 works, as well as arrangements of numerous Stephen Foster songs.
American music theorist Percy Goetschius (30 August 1853 – 29 October 1943) significantly contributed to the field of music theory education. He authored more than 10 books, including *Exercises in Melody-Writing*, *The Theory and Practice of Tone Relations*, *The Material Used in Musical Composition*, and *Lessons in Musical Form*. This study will explore Goetschius’ pedagogy of melody construction, on which his writings are particularly thorough, and directly compare it to guidelines for melody construction in recently published theory textbooks. Furthermore, Goetschius’ sphere of influence will be shown through lineage of his students, in order to determine the extent to which Goetschius’ ideas shape music theory instruction today.
International migration from India increased with the start of economic liberalization in India in 1991. The United States became the primary destination of Indian international migrants. This paper analyzes female Indian migration to the United States. Using survey data, female Indian migrants who entered the United States before 1991 are compared with those who entered after 1991. Logit regression is used to investigate the association between year of migration (pre-/post-1991) and reasons for migration (for family reasons or for economic betterment/higher education) for the two time intervals. The analysis uses a 2007-2008 survey of Indian immigrant women residing in the United States, in addition to data from the 2001 Indian Census, the U.S. census, and UN sources. The analysis finds that increased numbers of Indian females migrated independently to the United States with the start of economic liberalization in 1991 to pursue economic betterment and higher education.
Chapman, Eileen

Social Work, Texas State University – San Marcos

Gender Roles in Modern Dday Russia

The consequences of the socioeconomic shift after the fall of communism in Russia have impacted women socially, psychologically and economically. Efforts to study and research the shifts in gender roles have been limited until now, but are nevertheless becoming more and more necessary to meet the needs of today's Russia. Though literature has shown that Russian women desire to work and focus on their careers, men still have Soviet expectations of the role of women - both as a wife and a mother. The extreme changes that have taken place over the past 20 years make it difficult to generalize Russian society, meaning the topic of gender roles is not a simple category. People in different locations, generations, ethnicity and occupations may hold different views, because they are likely to have experienced different degrees of change after the end of communism. The media calls for “bringing women back to families” (Kalabinkhina, 2005), which often paints a patriotic picture of a housewife tending to her breadwinning husband and neatly dressed children. Women in Russia may experience a greater amount of psychological and role strain, due to the demanding nature of these expectations. This study will look more closely at job availability, unemployment, mental health, birth rate, alcohol and chemical dependency and other issues facing women in both rural and urban regions of Russia.
Analyzing work of Sylvia Townsend Warner presents a particular challenge. She was incredibly eclectic in her breadth of writing, but although she wrote during the modern period, her work has resisted inclusion in the Modernist cannon. Where normally a writer is primarily categorized and subsequently analyzed based on the overarching theme such as the period in which he or she wrote, Warner does not fit neatly into any one school. She was a Modernist, a communist, a feminist, an historian, a musicologist, a poet, a short story writer, and a novelist. Even though in her own time she was reduced to the pejorative "lady communist," her work simply resists typical methods of employing a single school of criticism toward exegesis. The criticism of Edward Said and exegetical methodology of Barbara Tuchman combined to form a means by which to enter the work of Sylvia Townsend Warner.

This paper seeks to develop and examine a method of entering the work of Sylvia Townsend Warner. Edward Said argues that all literature is contrapuntal. By this he means that literature functions not in a linear mode but in associative and harmonic mode. Multiple desperate elements can be present and often are present in any text and no one element need to be privileged over another. Said's seminal work *Orientalism* first developed the idea of examining a text in terms of multiple, disparate voices, but instead of identifying each voice and examining them collective in terms of cacophony, or conflicting tropes, he argued that separate strong themes can combine to create a unified new theme that is independent and individual, one that resists easy categorization. The work of Barbara Tuchman helps address the problems inherent in establishing context that Said's contrapuntal reading raises. In *A Distant Mirror* (1987), Tuchman introduced a methodology for examining history and context that reduces the risk of homogenization and bias. Her methodology considers the type and amount of available information, the presence of the pervasive negative in that information that gives rise to bias, and the difficulty of analyzing in light of an "ideal" versus a "realized" history. This paper introduces and refines a method of exegesis combined from the criticism of Edward Said and Barbara Tuchman. Once defined and refined, the critical approach then can be applied and illustrated using the work of Sylvia Townsend Warner.
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Advertising, Kookmin University

Moderating Effects of Subjective Knowledge or Objective Knowledge to Positively versus Negatively Framed Advertising Messages

Sometimes the same messages utilizing a same advertisement method can achieve different advertisement effects in accordance with its type whether it is positive or negative. Message framing takes an important role in the advertisement strategy. It is a very important problem in the field of marketing and advertisement to find which advertisement strategy can change consumer attitude, and which message strategy can play a critical role for purchasing.

This paper aimed at finding the influence of moderating variables on the effect of message framing which had not been discovered by existing studies, and had tried to clear up the framing effect in accordance with mediators by classifying the concept and type of knowledge. For this purpose, it classified knowledge into subjective knowledge and objective knowledge (Bruks, 1985) based on previous studies to clear up the message framing effect in accordance with the type of each knowledge.

This paper was consisted of double factors design - 2x2 (message framing x objective knowledge), 2 x 2 (message framing x objective knowledge) - between subjects. This paper proved hypothesis through an experimental study.
Healthcare costs now account for 17% of the U.S. gross domestic product, amounting to annual healthcare costs of $7,400 per person and rising 7 to 8 percent per year. Diagnostic tools are essential towards effective and affordable healthcare; yet current diagnostic technologies are expensive and inefficient. The ability to quickly and efficiently measure multiple biomarkers at the point-of-care (POC) has the potential to reform clinical laboratory science. To overcome these challenges, the McDevitt lab has developed a microfluidic programmable bio-nano-chip (PBNC) that synergizes components from clinical chemistry, bioinformatics, microfluidics, optics, and image analysis. At the heart of the PBNC is an array of anisotropically etched pyramidal microstructures that hold chemically sensitive agarose microspheres that are capable of detecting acute myocardial infarction, HIV, bacteria, and cancer. While the PNBC has been reported to detect concentrations as low as 10 fg/mL, outperforming traditional ELISA by four orders of magnitude, the microfluidic structure holding the agarose microsensors have yet to be optimized. We herein report a computational modeling approach that utilizes statistical full factorial design of experiments to arrive at key geometric parameters that optimize the detection performance of the POC device. Based on initial simulations, we expect at least a 50% increase in analyte capture efficiency.
Purpose
With the continuing economic development and urban expansion in the Blanco River watershed, it is imperative to characterize the land cover change in the region as it has occurred over the years. Recording, modeling, and predicting the land use and land cover changes in the watershed are the first steps to establishing relationships between such changes and their impacts on the watershed ecosystem, both short and long-term.

Methodology
Land use/Land cover maps were created by classifying aerial photographs from 1987 and 2004 into seven classes: Agriculture, urban, grassland, grass/shrub, forest, water and barren. Change potential maps were created to show the likelihood each class has to change to another over time. Ultimately change prediction maps were created that show the possible future of land use/land cover in the study area for 2020 and 2050. Desirable zones for development and habitat/ecosystem protection were delineated as well.

Results
A. Characterized historic and current land use and land cover attributes and dynamics in the river basin by developing a land use and land cover database for the study area to provide quick, comparative and inexpensive information about land use and land cover changes in the watershed.
B. Developed a simulation model to simulate land use changes in the river basin and to identify driving forces that are behind the land use change, and predict future land use and land cover change using the simulation model for the years of 2020 and 2050.
C. Provided recommendations for ecologically sustainable development to minimize impacts on water quality and availability of habitat areas within drainage area for the Blanco River.
Approximately 50% of all pregnancies in the U.S. are unintended, with the highest rates among women 18-24 (Finer & Henshaw, 2006). Most unplanned pregnancies result from failure to use or the ineffective use of contraceptives (Frost et al., 2007). In addition, almost half of the 19 million new cases of sexually transmitted infections (STIs) are found in individuals 15-24 (Weinstock et al., 2004). Research has been conducted to establish what factors predict contraceptive use (e.g., Brunner Huber et al., 2006; Frost et al., 2007) in an effort to decrease the rates of unplanned pregnancy and STIs. Studies have found that men and women maintain differing contraceptive attitudes, which influence their contraceptive behaviors (Ryan et al., 2007). For example, individual factors were stronger predictors of contraceptive behaviors for males, while relationship factors were stronger for females (Manlove et al., 2006). Although there is an abundance of research on contraceptive behaviors, there is limited research examining contraceptive responsibility. Therefore, this study will explore gender and contraceptive responsibility among college students.

This study will be guided by feminist theory which argues that the concept of gender is multidimensional and includes individual gender (masculine or feminine identity), structural gender (categorizing people hierarchically), and cultural gender (symbols attached to social gender and their constructs; White & Klein, 2008). All three of these dimensions will be used to guide our study with the assumption that individual, structural, and cultural gender differentially impact how males and females approach contraceptive responsibility.

This study is based on a broader study exploring the sexual behaviors, intentions, and decisions of college students. A subsample of 54 students participated in an individual interview via synchronous chat technology (interviews lasted from 37 to 102 minutes; mean=65.36). However, for the purpose of this study, four students were excluded because they identified as being gay or lesbian. The remaining sample consisted of 25 females and 25 males, mainly White (68%), ranging in age from 18 to 25 (mean=20.48). The majority (68%) were either casually dating or involved in a relationship.

Data will be analyzed using the constant comparative approach. The two graduate student co-authors will begin by reading the interviews. Next, the coders will individually employ open coding to identify reoccurring themes. They will subsequently meet to collaboratively develop a coding system using a consensual coding approach. After they have come to an agreement about coding procedures, they will use axial coding to refine their coding system. The pattern of coding and collaborating will continue until all interviews have been coded. Finally, selective coding will be employed to identify gendered trends in contraceptive responsibility.

Based on feminist theory, it is expected that females will be more likely to claim responsibility for contraceptive use, but males will be more likely to purchase contraceptives. Analysis will corroborate the degree to which these expected results are reflected in the data and will highlight additional themes that emerge from the interviews. Our findings will provide useful strategies for promoting the effective use of contraception among college students.
Influence of Collectivism in the International Student Brain Drain.

Purpose for Research

Our research will develop a theoretical framework for the study of the correlation between the brain drain of international students post graduation and the level of collectivism and their ability to assimilate into the American culture. Furthermore we will determine if the students’ capability or inability to assimilate affects their return to their country of origin.

Research Approach

The study will analyze the correlation between the level of collectivism in the student’s country of origin and the student’s assimilation into the host culture. A construction will be completed for a suggested survey to analyze student demographics and levels of collectivism.

Expected Results

We anticipate that students from highly collectivist cultures will experience difficulty assimilating into the individualistic American culture. This study will make recommendations to universities and businesses about actions they might take to facilitate the assimilation process of these international students and help them feel more comfortable in the American culture. Furthermore we will suggest for universities and business organizations to increase the inclusiveness of these groups so that they can a sense that they belong in our organizations and in society in general.
Legitimate Peripheral Participation in the GNU/Linux Community

Legitimate peripheral participation (LPP) is a process whereby learning occurs informally as members of a group interact to develop knowledge and skills. The Free and Open Source Software (FOSS) model and in particular the GNU/Linux community exhibit several characteristics of LPP. Therefore, research was conducted to study the significance and impact of LPP on learning within this community. The data collected highlight educational benefits of participation in the GNU/Linux community as well as the utilization of the FOSS framework.

Research Question

The problem of this research was to identify the significance and impact of legitimate peripheral participation on learning in the GNU/Linux FOSS community, specifically:

1. To what extent does legitimate peripheral participation impact members' learning in the GNU/Linux FOSS community?
2. What are the perceived educational benefits of participation in these communities?

Methodology

An online Likert scale survey consisting of 21 questions and an interview that included semi-structured questions were utilized to collect data.

The survey’s link was posted to online message forums dedicated specifically to GNU/Linux such as Linuxquestions.org, Ubuntu, Red Hat, OpenSuse, and Debian user groups. Additionally, several Linux user groups (LUGs) were provided with the survey link. The greatest number of respondents (n>3000) occurred after Linux-oriented bloggers began sharing the survey link.

T-tests were conducted to compare responses based on level of members’ participation, communication, and roles in the FOSS community. Chi square analysis was used to determine if results vary from expected counts; results were non-random. Regression tests were used to identify significant regressors for further evaluation.

Ten participants of a Linux installfest volunteered for the face-to-face interview. The interview questions were designed to elicit respondents’ learning preferences, level of participation, educational experiences, and personal growth in the context of the GNU/Linux FOSS community. Commonly occurring cognitive and participatory elements in respondents’ replies were identified.

Results

Our research utilized survey (n=4625) and interview (n=10) data to examine learning in the context of legitimate peripheral participation in the GNU/Linux FOSS community. Preliminary data indicate that a significant correlation exists between community participation and perceived educational benefits of FOSS. Multiple regression analysis of variables indicates a strong preference for implementation of the FOSS framework in education.
"Tikkun olam" is the Hebrew phrase that means, "to repair the world." The idea of fixing what is broken in the world has become standard teaching in most modern Reform and Conservative synagogues. Ecofeminism, is defined here as the act of feminists, but to work with nature. The purpose of my paper is to examine whether Judaism and ecofeminism are compatible. By examining Judaism’s treatment of nature and comparing it to ecofeminist perspectives, I will argue that there are values in the spiritual and the activist components of the religion that are consistent with ecofeminism. This topic is particularly significant, since grassroots, community activism by women may be the road to improving the environment and influencing peace in the Middle East. When Jewish and Palestinian women work for common environmental causes, they may forge a bond, which can lead to improvement in the environment and to peace, thereby “repairing the world.” In my paper, I will explore the environmental components of the Jewish religion, including the perspective that Jews are to be stewards of the land, with the charge to protect and preserve nature. Taking inspiration from Jewish ecofeminism, Jewish women, who historically have been the activists, might be able to build a road to peace in the Middle East. I will use a literature review as my methodology.
Purpose Statement:

The purpose of our study is to show that females and males have different emotional reactions to watching violent horror films (torture porn). Our study is exploratory. We hope to set a basis for future research, which will look at the short-term and long-term effects of these films on college-aged viewers. Additionally, it can set the basis for studies that will establish a correlation between enjoying these films and negative emotions and behavior.

Hypotheses:

H1. Negative emotions, such as: disgust, fright/anxiety, and sadness will be higher in female college students after viewing a horror movie clip.
H2. Positive emotions, such as: enjoyment, enthusiasm, and aggression will be higher in male college students after viewing the same clip.
H0: There will be no difference in emotional response between male and female participants.

Methodology:

We will conduct our study in two separate classrooms at Texas State University. Our goal is to have at least 100 participants. We will explain to participants that they will be watching a horror film clip, which will contain graphic images. Additionally, we’ll tell students that they will receive an incentive (extra credit) for participating. We will then pass out a consent form that students must sign if they want to participate. If not, they will be able to leave the classroom during the study. After consent forms are collected, we will play a horror film clip (yet to be determined) for approximately 15 minutes. For this study’s purpose, we will be focusing on the graphic horror genre, commonly known as torture porn. After the clip, students will get a questionnaire with both close-ended and open-ended questions. The questions will measure their emotional response to the film clip based on the emotions stated in the hypotheses section: enjoyment, enthusiasm, aggression, disgust, fright/anxiety, and sadness. We will analyze the responses in order to prove or disprove our hypotheses that female participants will have a higher negative emotional response, and male participants will have a higher positive emotional response. As stated earlier, we are hopeful that our study will open the door to future quantitative and qualitative studies that look at the effects these films have on emotional health and behavior.
Du, Lue (Derek) and Dalton, Charles

Engineering, University of Houston

Large Eddy Simulation of Uniform Flow past a Rotating Cylinder

In this paper, we investigate the problem of uniform flow past a circular cylinder rotating at a constant speed by solving the three-dimensional viscous incompressible Navier-Stokes equations using a combination of finite difference and spectral methods. The wake turbulence is being modeled using an LES procedure.

This problem has been studied extensively in the past because of its important theoretical and practical applications. There are two controlling parameters in this problem: Reynolds number (Re=UR/υ) and velocity ratio (α=ΩR/U0).

It was found, through two-dimensional numerical simulation, that there existed four successive stages of transition at low Reynolds number (48≤Re≤500) as the cylinder rotation speed increased. That is when α≤α1, periodic vortices (mode 1) shed from both sides of the cylinder alternately similar to the von-Karman vortex shedding for non-rotating cylinder case. However, as α increased to the second range, α1 <α< α2, the vortex shedding disappeared and the flow obtains certain steady state. As the rotation speed further increased to the very narrow third range, α2 <α< α3, vortex shedding (mode 2) appeared again, however with very different structure. Finally, as the rotation speed further increased to the last stage, α> α3, vortex shedding mode 2 disappeared and the flow became steady again.

This very interesting phenomenon was not reported in the past for turbulent flows. In this paper, we extended the simulation to higher Reynolds number when the wake is fully turbulent. In addition, a streak-line visualization technique was used to examine the wake structure and vortex shedding process in detail. We investigated the cases of Re=200, 1000 and 20000 with α ≤5. For Re=200, both two- and three-dimensional computations were carried out, while for Re=1000 and 20000, three-dimensional LES was implemented.

For the α values we have considered, both modes of vortex shedding were found for Re=200 and 1000. This confirmed that this two-mode vortex shedding phenomenon was not limited to the laminar wake regime. For Re=20000, the mode 2 has not appeared yet, but it was expected for higher α value from our streak line visualization.

Cases of higher Reynolds numbers and rotation speeds are presently being examined and we anticipate that additional results at higher values of Re and α will be available for the Conference.
Rural landholders in the eastern Texas Hill Country are faced with the “spillover” effects of population growth in the Austin-San Antonio Corridor that increased over 30 percent between 1990 and 2010 and is expected to increase another 60 percent by 2050. More than 150 years of livestock overgrazing and fire suppression has led to massive increases in Ashe juniper, decreases in livestock carrying capacity, and reduced groundwater recharge. The decrease in livestock carrying capacity has contributed to reduced profitability of ranching that has fueled land fractionalization for exurban ranchettes and loss of wildlife habitat. “Brush management” programs increase carrying capacity and recharge but are expensive for the landowner.

This paper analyzes the potential for selling woody vegetation for charcoal (mesquite), firewood (Oak), fence posts (juniper) and powerplant fuelwood (mesquite, oak, and juniper). Vegetation sampling at the 4,000 acre Texas State Freeman Ranch employing the point-centered quarter method and measurements of tree diameter, height, and mass provided resources per unit area for the three taxa. Using market prices provides a value of greater than $1,000 per acre. When these values were extended to the 1.2 million acre “eastern Texas Hill Country” region, the annual supply is worth over $1 billion and would sustain a 100 MW wood burning powerplant. Additional revenues would be provided by the additional ¼ to 1/8 acre foot of useable water supply per acre and the nearly double livestock carrying capacity.
Flores, Guadalupe

Thatre and Dance, Texas State University – San Marcos

Poetic Association: Shakespeare’s Use of the Prologue in *Henry V* to Enhance Social Status

This research project examines the prologue to *Henry V*, as well as the nature of the Chorus character, to determine William Shakespeare’s intent, as the purpose of the character and his text have been in dispute since the play’s inception. The research conducted determines the character’s true nature and the purpose of the prologue by two methods: a review of scholarly work conducted on the prologue since its creation; and through rhetorical criticism, specifically the cluster critical approach, which identifies relationships between key terms. The project results indicate that the prologue is in fact an attempt by Shakespeare to enhance the social status of the theatrical community by demonstrating the necessity of theatre to witness the history created by the nobility. By intertwining their destinies overtly and subtly, Shakespeare advances his chosen profession by making it indispensable for an understanding of the nature of history, both individual and communal.
Purpose

The purpose of this research is to describe the different services offered by private military companies. An examination of literature related to the private military industry illustrates the history of non-state actors as well as factors that contributed to the post-Cold War growth of the industry. The main factors discussed are the corporatization of service providers and growing trends of privatization during the Cold War.

Method

Through the use of a conceptual framework, three descriptive categories were developed. Each descriptive category is comprised of sub-categories that identify a type of service offered in the industry. The descriptive categories are drawn from P.W. Singer’s book *Corporate Warriors: The rise of the privatized military industry*. They are used to connect to website analysis of existing PMCs. The population studied is drawn using members of a private military trade association called the International Peace Operations Association (IPOA). Using content analysis, a keyword search was conducted of member websites to identify the percentage of companies offering a given service.

Findings

The data shows that each descriptive category has one service provided by at least half of the companies in the sample and that more than half of the firms examined provided services in at least two descriptive categories. The overall results indicate that PMCs are equipped to deliver a multitude of services. Additionally, the results show how private military companies have equipped themselves to target market niches with wide-ranging contract specifications.
From a phenomenological perspective, everyday life exists as a reality which is subjectively interpreted by human actors. This reality presents itself to those actors as a pattern of social actions that is independent of the individual actor. It is this pattern of social actions which is the focus of this paper.

I spent three months in the summer of 2010 conducting research within an age-specific retirement community in San Marcos, TX. The purpose of this research was to observe the interaction between residents within the community, to identify patterns of social action, and to learn how the residents, or actors, themselves interpreted these patterns. To accomplish this goal I spent an average of six to eight hours a day for three months conducting participant observation at Mariposa Apartment Homes, a community which restricts its population to residents of fifty-five years or older. Along with participant observation I conducted both formal and informal interviews with participants. These methodological approaches allowed me to collect data that was both behavioral and cognitive; I was able to record both the actual social actions of participants, as well as the effects of these actions, and the participant interpretations of the social actions that occurred.

This data enabled me to apply a multi-leveled social network analysis of the residents at Mariposa Apartment Homes. The first level of analysis entails a mapping and measurement of the social relationships and flows of information between individuals and specific social groups. Three distinct social groups were identified within this level of analysis, for which actors, boundaries, and centrality are established. These groups lead to the second level of analysis: how individual identity was formed from classification with a specific social group within the larger social network of Mariposa Apartment Home residents.
The objective of this research study is to present evidence that contemporary films, more specifically *Transformers: Revenge of the Fallen*, follow in a thematic fashion that reflects and personifies the classical literature of Milton’s *Paradise Lost*.

There is implied meaning throughout the film. That is, there is a battle between good and evil, the chosen and the fallen; the everlasting battle that lives on throughout the ages. This engagement is played out in a modernized version, and the battles foreshadow and parallel the sequential acts of Milton’s text. However, the film is an adaptation and not a direct following of *Paradise Lost*, and that is evident with the technology involved. The structure, though, remains the same, and the new elements do not change the story; they just add to it.

The characters have different names, and the plot is modernized, but the structure of the film remains relevant to the construction of *Paradise Lost*. Also, the film’s characters embody the traits of characters in the epic, and the story incorporates the fall and rise of mankind. The film, however, highlights the fact that there is meaning beyond the fall; that is to say, the story begins with the fall.

The purpose of this research study is to make evident that classical literatures continue to have an impact on contemporary and modernized films of today. Because of a lack of resources pertaining to such fields of interest, this study will concentrate solely on the text and dialogue between *Transformers: Revenge of the Fallen* and Milton’s *Paradise Lost*. From the dialogue and parallelism, the study will imply that *Paradise Lost* has set precedence and influenced the film *Transformers: Revenge of the Fallen*.

Further arguments can be made that because such films continue to follow classical literary structures, in essence the modernized version of *Paradise Lost* is the aftermath and continuation of mankind.
The only biography of Joseph Stephen Cullinan in print focuses exclusively on his leadership in the Texas oil industry.¹ This thesis builds upon that scholarly research, but the main source of information will come directly from Cullinan’s own papers. By using a largely untouched source, this work expands the general pool of knowledge regarding Cullinan and paints a clearer picture of the nature of Houston’s business elites in the early twentieth century. Rather than reexamine his private business dealings, this thesis will examine four areas of Cullinan’s public life: his opposition to the Ku Klux Klan, support of the Bonus Bill, campaign against the prohibition of alcohol, and founding of the Houston Negro Hospital. Although these four areas seem to be only loosely connected, it is Cullinan’s archaic nineteenth century political and social ideals that link them together.

Specifically for this conference, the author will present an excerpt of this thesis. The excerpt title is “THE BONUS BILL, CREDIT AND CURRENCY, AND MONETARY REFORM.” Joseph Stephen Cullinan was a lifelong member of the Democratic Party, but his understanding of economics clashed at times with his party affiliation. Cullinan’s support of the Bonus Expeditionary Force, and the legislation that fueled that army, is an example of the conflict between his party’s platform and his economics. He backed Congressman Wright Patman’s efforts to secure early and immediate execution of the Bonus Bill, a piece of veterans compensation legislation. Even thought the fight was against a Republican controlled executive at first, the Democratic Party was not united behind Patman’s scheme. As Cullinan tried to advance his economic principles, such as his notion of the difference between credit and currency, he alienated some in his own party. While not abandoning his party loyalty, he decided to back the Bonus Bill over the 1932 party platform because his economic ideals spoke louder than his politics.

Cullinan’s rationale for supporting the Bonus Bill reform placed him squarely in the tradition of the Jeffersonian Democrats. This group believed that the Democratic Party had left its people and principles, and they opposed the reelection of President Roosevelt in 1936. They condemned Roosevelt because they saw his New Deal and expansion of government as a sharp break from traditional Democratic ideals of liberty, limited government, and states’ rights. While not affiliating themselves with the Republican Party, the Jeffersonian Democrats supported the Republican platform because it more closely mirrored their ideals. The Texas branch of the Jeffersonian Democrats was based out of Austin but had many prominent businessmen and professionals throughout Texas on its roles. Cullinan himself was a Jeffersonian Democrat. Because of his somewhat archaic early nineteenth century Jeffersonian ideals, he felt betrayed by the Party but never actually abandoned it. Consequently, he had to endure uncomfortable positions at times because of his contradictory politics and party affiliation. His support of Patman and the Bonus Bill is just one example of this.
The regulation of the human energy metabolism is crucial to ensure the functionality of the entire organism. Deregulations may lead to severe pathologies such as obesity and type 2 diabetes mellitus. The decisive role of the brain as active controller and heavy energy consumer in the global regulation of the complex whole body energy metabolism is subject to recent research activities. Latest studies suggest the priority of the brain energy supply while all organs in the organism compete for the available energy resources.

The aim of the present study is the development of a general mathematical model to realistically describe the healthy whole body energy metabolism. In particular, the investigation of the tight link between cerebral energy supply and corresponding metabolic responses of the organism is of foremost interest.

We develop and investigate a model, which describes the human energy metabolism in a novel and compact dynamical system. The model takes into account the two central roles of the brain with respect to the energy metabolism. That is, it is considered as a consumer as well as a superior regulatory instance. We integrate energy fluxes and their control signals such as glucose fluxes, hormone signals and the ingestion momentum in our dynamical system. As one novel characteristic, the hormone insulin is regarded not only as local signal but as central feedback signal of the brain. Consequently, our model contains the competition for energy between brain and body periphery.

The model realistically reproduces the qualitative and quantitative behavior of the energy metabolism even for a large class of physiological interventions. Key elements like the brain's preeminence are reflected. Short time observations demonstrate the physiological periodic food intake generating the typical oscillating blood glucose variations. Integration over the daily cycle yields a long-term model. Furthermore, the analytic investigations of the dynamical system show a stable behavior in accordance with the homeostatic regulation of the energy metabolism on a long time scale.

The presented dynamical system is a step towards a systemic understanding of the human energy metabolism and thus does shed light onto defects causing diseases caused by deregulations in the energy metabolism such as obesity and diabetes mellitus. The origins of these epidemic pathologies are still unravelled.
Path splicing is a proposed routing architecture for the Internet in which end-hosts (and intermediate routers) are empowered to change the paths their traffic uses by modifying a number of bits in the packet headers. These bits allow intermediate routers to choose alternate paths from the shortest one.

To that end, this paper exposes SKWeak (Selective K Weakest links) attacks that exploit the adaptive behavior of end-hosts, through attacking the K weakest links. We show that SKWeak attack can significantly increase the network overhead due to the use of non-optimal paths.

Our results show a multiplicative factor of SKWeaks attacks that are close to 700. We propose defense mechanisms that aim to limit the dynamics induced by preventing excessive splicing from end-hosts. Our assessment is conducted based on the real Sprint topology with synthetic traffic matrices.
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Passing Off Death: Irene’s Subjectivation and Interpellation of Her Other

This paper will analyze Nella Larsen’s *Passing* and the main character of Irene in order to demonstrate that as an individual in the process of subjectivation, Irene’s obsession with the ordering and control of her life necessitates the casting aside of certain objects or ideas that she denies as part of her subjectivity. The Other she ultimately casts aside is death, and Larsen formulates this in the character of Clare; for Irene, Clare represents reminders of her own death because of her attributes of overt sexuality, “passing,” and hidden blackness. *Passing*, while adhering to themes of obsessive control and hyper-organization characteristic of the Modernist time period, also formulates the terror of the human condition through the character of Irene and her denial of death. Ultimately, this paper demonstrates that the process of individual civilization itself supports the individual’s denial of death.
Video games are a constantly evolving medium which has significant contributions to communicative rhetoric. Games with expansive storylines, such as role-playing games (RPG), have been intensely criticized regarding the styling of the gameplay; however, the rhetorical implications of such games have not been heavily investigated. Final Fantasy VII has played a significant role in the development of RPGs and provides a good case from which themes of feminist rhetoric may be uncovered. Through qualitative analysis, the project isolated themes of hierarchy, heteronormativity, patriarchy, interconnectivity and multiplicity in order to determine if the game functions as a transmitter of feminist rhetoric. Uncovering such themes in Final Fantasy VII can help provide arguments regarding the messages female gamers are receiving from a traditionally male dominated medium and open up a channel for investigating the feminist themes present throughout the medium. The findings of the study suggest that even through a predominantly masculine medium, subversive feminist rhetoric is transmitted through interactions between characters and the players within the video game. This project could be a catalyst for further research into rhetorical criticism of video games and their unique features in the field of communication.
Edmond Dédé has been praised for his many musical achievements as a violinist, composer and conductor of the late nineteenth century. Yet, his effects on and contributions to both social and musical movements in America and abroad are lacking contextual recognition. Subsequently, he holds but an obscure presence in the lexicon of American music history today. How then, and more importantly why, does a composer of considerable fame and notoriety shift, one presumes undesirably, from positions of authority in musical and societal achievement to relative inexistence? By presenting aspects of Dédé’s life, education, and work, in context of the time in which he was writing and performing, a more appropriate view of his many musical intentions and resulted success will be realized in a detailed analysis of, one of Dédé’s most popular works as defined by its documented exposure, his Méphisto Masqué (1889).

The piece itself will reveal several of the unique characteristics of Dédé’s compositional writing as well as his very personal struggles with and retaliations against American prejudice. Combined with historical perspective, the weight of Dédé’s musical style and intentions will be revealed to suggest a greater importance of his overall work as a composer.

Ultimately, this paper will examine Dédé’s Méphisto Masqué in both relevant musical and social context, in efforts to justify the importance of his contributions to the American culture of the late nineteenth century.
In today's world, culture and social forces influence many aspects of life. One such area is the role that culture plays on early education in laying the foundation for success in higher education. While cultural influences are not entirely deterministic, they can help us to understand the dynamics between early education and culture.

The major purpose of this study is to find out how culture influences the structure of early education in high context and low contexts countries. We will examine the patterns didactically using information gathered from the following high context (Japan, India, and China) and low context (USA, Germany, UK) countries. We will use a qualitative methodology conducted using a sufficient sample of students from each of the selected countries. The Survey will consist of a questionnaire to gather data about personal experiences with early education and learning styles. Additionally, we will categorize the participants of our questionnaire into the following: Relationships, Communication, Cultural Patterns, and Authority. Using the metrics gathered from these surveys, we will attempt to draw conclusions on cultural impact on early education.

Our expected results to this qualitative survey are as follows:

The research project will result in clear cultural and social influences that differentiate early educational environments within high context and low context cultures. For example, students from high context cultures perform better from the ages of five to nine as opposed to their low context peers. Also, taking into account that culture and social influence are only two variables out of many, a strong correlation between success in early education from age five to nine and success in higher education will be asserted. On the one hand, we also expect that the results of this study would allow business organizations to be able to predict the quality level of future employees found in various regions around the world. On the other, we anticipate that these results would allow businesses to make more effective decisions when they need to recruit youngsters to be trained for very demanding, high tech jobs.
Fully Dense Freeform Fabrication (FDFF) is a new freeform fabrication method capable of building fully dense prototypes from practically any materials in a layer-by-layer basis. Using this method, a CAD model is sliced into computer layers; the material sheet is then cut from the computer layers. After adding the bonding materials between layers, the layers are aligned into a work-holding system. Using pressure and/or heat, layers are attached to form a 3D prototype from a fully dense material. To reduce the prototyping time and improve the quality of the products, FDFF is using variable (adaptive) layer thickness based on the model geometry. In this research, the adaptive layering technique for the FDFF process is explained. In this method, using the design-by-feature solid modeler, any internal and external features are recognized. Then, the contours are formed through the cutting the solid model at each variable z level. The thickness is then adjusted based on the error. Finally, 2D and 3D slices are generated for the use in water cutter and evaluation purposes respectively. Preliminary experiments have shown parts with high accuracy and good mechanical properties.
The Third World has seen an increase in civil wars, refugee migration, famine, disease, ethnic cleansing, economic turmoil, and many other atrocities. These factors, often referred to as Complex Emergencies, have helped perpetuate a cycle of poverty and underdevelopment within their respective societies. Although there has been a quasi-awakening within academia and the international world, humanitarian responses in many cases have been ineffective.

With institutions such as the UN, UNHCR, WHO, FAO, and many other NGOs and regional organizations, why have humanitarian efforts failed? What causes some states to benefit and not others? Why can’t developed countries assist in implementing more effective strategies and institutions to Third World states? What are the factors that both invite and deter humanitarian efforts? These are only a handful of questions I wish to address. There are many factors which contribute to complex emergencies. I hope that by exploring these factors I can better understand why humanitarian efforts are so difficult to implement; and perhaps I can provide some insight which might benefit the study of complex emergencies and the implementation of humanitarian efforts.

I intend to research the effects civil war, political instability, weak institutions, economic instability, and natural disasters have on civilizations; and in what ways these complex emergencies have affected humanitarian efforts throughout the region and world.
Identification and Characterization of *pic7*, a Novel *Arabidopsis* Mutant Resistant to Auxin

Among plant hormones, auxin plays a major role in plant growth and development. Indole-3- acetic acid (IAA) is the major natural auxin in plants while some synthetic chemicals with auxinic activities are widely used as herbicides. Recently we isolated a new Arabidopsis mutant named *pic7* with altered auxin response to synthetic auxin picloram. Root growth assays indicate that the *pic7* is resistant not only to auxin but also to several other plant hormones such as abscisic acid, cytokinin, ethylene and jasmonic acid, suggesting that *PIC7* gene plays an essential role in several hormone signaling pathways. *pic7* plants are less fertile than wild type. Closer examination of *pic7* flowers indicates that *pic7* produces less number of pollens as well as defective pollens. We have mapped *pic7* mutation to a genetic window of 42 genes in the north arm of chromosome 1. Currently we are sequencing candidate genes in this genetic window to identify the mutant gene.
Hsu, Wei-chao

Education, University of the Incarnate Word

An Exploratory Study of Consumer Decision-Making and Learning Styles Among the Millennial Generation in Taiwan

Over the past 20 years, the world has become connected like a village and all demographic revolutions severely impact all levels of various enterprises locally and globally. The Millennial Generation, expected to grow as a powerful and prime consumer group, has forced marketers to change their old marketing techniques in order to communicate effectively with them by adapting to emerging media and embracing their fast-changing pace. Since the essence of marketing is to recognize consumer purchasing behaviors, understanding how consumers psychologically acquire, process, and make decisions is critical to alter or modify marketing strategies.

As evident in the E. K. Sproles and Sproles’s (1990) study, consumer decision-making styles are related to the way a person thinks or learns. This study proposed to investigate the possible relationships between consumers’ decision-making styles and individuals’ learning styles among the Taiwanese Millennial Generation, who were born between 1981 and 2000, through identifying and exploring their consumer decision-making styles and learning styles. By randomly sampling students at a private university in southern Taiwan, a cross-sectional survey research design is selected to classify consumer decision-making styles and learning styles of one specific cohort. Three Chinese survey instruments, including the modified Consumer Styles Inventory (CSI) (Lin, Shih, & Hsu, 2001), the Index of Learning Styles (ILS) (Felder & Soloman, 1997), and a demographic survey, were administered to collect statistical data and completed by 934 students in classes during May, 2010. By employing similar statistical methods as E. K. Sproles and Sproles (1990), the results hopefully will categorize consumer decision-making styles using principle components analysis (PCA) and reveal differences and relationships processed through independent-sample t test, Pearson correlation, Multiple Analysis of Variance (MANOVA), and canonical correlation among various student groups.

In conclusion, exploring knowledge of this significant relationship will enable future researchers and marketers to use the Index of Learning Styles (ILS) as a means to better approach how consumers obtain and learn information regarding new products or services. The results will offer guidance to researchers and marketing practitioners for future research in formulating effective marketing strategies and promoting influential messages toward new market segmentations.
Iskali, Goniela and Zhang, Yixin

Biology, Texas State University – San Marcos

Invertebrate Diversity in Bracken Bat Cave: Effects of Bat Guano Subsidy

Cave ecosystems are generally oligotrophic and highly limited by energy sources due to the lack of primary productivity, and therefore almost entirely rely upon allochthonous resources. This has led to the development of special adaptations in cave organisms in order to survive these stable, but extreme conditions. Bracken Bat Cave in central Texas is atypical in terms of the magnitude of allochthonous energy resource input in the form of bat guano. Bracken Bat Cave is recognized as the ecosystem with the largest bat community in the world (a colony of more than 20 million Mexican Free-tail bats). This phenomenon has resulted in an exceptional cave ecosystem. Our study focused on determining the species richness and abundance of cave invertebrates in Bracken Bat Cave with respect to cave depth, guano layer depth and seasonality. We accomplished this by randomly sampling in three preselected cave zones of 45 m length on a monthly basis for 5 months. Each sample contained a core-sample from the surface to 0.91 m in depth. Through the comparison of these two depth factors we aim to establish whether invertebrate species richness and abundance vary at different cave and guano depths, with respect to seasonality. Preliminary data analysis suggests that cave invertebrate population abundances are closely correlated to guano availability. This is supported by our findings that the highest abundance of organisms coincided with the months of the highest amount of guano deposits. The depth of layers and depth of cave did not significantly affect cave macroinvertebrate abundances. In addition, species richness did not vary with respect to seasonality, cave depth and guano depth. The data thus indicates that cave invertebrates at Bracken Bat Cave greatly rely on the subsidy supplies from the cave-inhabiting bat populations. These findings underline the importance of bat conservation at Bracken Bat Cave, since it appears that the bats represent a key stone species in this ecosystem. Our project is crucial in increasing our knowledge of such a unique cave ecosystem and it will have ecological implications on cave conservation for preserving such a distinctive ecosystem and the largest population of bats in the world.
What impact has the use of technology had on the work of the Wooster Group? Under the guidance of director Elizabeth LeCompte, the Group has used any useful technology available to them to develop and produce each of their shows. Technology provides a foundation from which the Group can approach each new piece. Their pieces Three Places in Rhode Island, House/Lights and Hamlet, which span thirty years, reflect the ways in which their work with technology has changed and remained the same. I researched these pieces through articles, books, a videotaped performance, and a live performance.

The aural and visual technology with which the Wooster Group interacts has become more sophisticated as the technology available to them has become more sophisticated. Their work reflects major technological advances in aural, visual, and computer technology, and their use of technology has played an increasingly important role in the development and performance of pieces in the Wooster Group’s repertoire.
The plant hormone auxin regulates many aspects of plant growth and development. Abscisic acid (ABA), another plant hormone, is involved in many stress related plant responses. It is believed that these two hormones overlap in their functions to adapt plant growth to different stress conditions such as salinity and osmotic stress. It is also known that Mitogen-Activated Protein Kinase (MAPK) pathway is involved in plant stress responses. In a recent study, *IBR5* that encodes dual specificity phosphatase (DSP) was identified as a gene involved in both auxin and ABA response pathways. It was also found that IBR5 physically interacts with Arabidopsis Mitogen Activated Protein Kinase 12 (MPK12) and dephosphorylates it, suggesting that MPK12 and IBR5 are involved in these signaling pathways. To uncover the cross talk between auxin and ABA signaling pathways, we studied the expression patterns of *IBR5* and *MPK12* using RT-PCR, and transcriptional and translational gene constructs of *MPK12* and *IBR5*. So far our data indicate that these two genes are subjected to both transcriptional and post-transcriptional regulation under various environmental stresses. Our findings suggest that IBR5 and MPK12 are involved in adapting the auxin response through ABA signaling under stress conditions.
Blackbrush, *Coleogyne ramosissima*, is a native, long-lived, evergreen shrub occurring primarily in the transition zone between the Mojave and Great Basin deserts and on the western border of the Sonoran Desert, forming a band at mid-elevation from southeastern California to southwestern Colorado. Blackbrush is vulnerable to threats of increased temperatures, decreased precipitation, and increased frequency and intensity of wildfires that are predicted with climate change and amplified by urban encroachment into wildlands. Because of blackbrush's sporadic natural regeneration, natural recovery of this shrub is slow, allowing exotic annual grasses to invade burned areas, and providing more fuel for future wildfires, thereby making the loss of blackbrush populations permanent. Aggressive restoration by seed broadcasting is used to meet these challenges, but these efforts also tend to have low success rates since blackbrush seeds suffer high predation rates by ant and rodent granivores and require long periods of inundation to break dormancy. I performed an experiment to quantify the rate of seedling emergence and survival in the Mojave Desert of southern California in a fully factorial design with three factors thought critical for blackbrush establishment: method of seed application, predation by mammalian granivores, and micro-environment. I applied seed either by dropping 3 seeds into 1 cm deep wells, or by encapsulating three seeds in a clay/soil/fiber mixture (“seed balls”) and burying them 2 cm deep in the soil. Seed balls are thought to favor seedling establishment in two ways, by buffering moisture variation and preventing seed predation. Predation of seeds and young seedlings by mammalian granivores and herbivores was manipulated by constructing wire mesh enclosures over plots where seeds or seed balls were planted. Micro-environment was manipulated by setting up seed plots on the north side of shrubs or in the open. Seed plots contained 50 seed wells or balls (equivalent to 150 seeds per plot) and each treatment combination was replicated three times. The experimental design (+/- seed balls, +/- enclosures, near to/far from shrubs) was repeated across three sites along an elevation gradient. Precipitation, soil moisture, and soil temperature where recorded continuously every 15 min to characterize environmental effects of elevation.

Results:
Across all sites, germination from untreated seeds was higher than from seed balls. Herbivory prevention had a positive effect on seed germination and seedling survival, but only at the highest elevation site. I found no significant difference in micro-site effect on seedling emergence or survival. Rainfall inputs were only marginally different between sites, but higher elevation sites were cooler and soil moisture was retained for longer. My study suggests several avenues for improving blackbrush restoration, including the judicious application of a mixture of bare seed and seed balls and the fine-tuning of restoration methods to elevation.
The plant hormone auxin regulates many aspects of plant growth and development. This is mainly achieved through the controlled gene expression. The Small Auxin Up RNA (SAUR) gene family consists of 72 genes in Arabidopsis and are known to be induced by auxin. Nevertheless, so far only one gene has been functionally characterized.

In an attempt to functionally characterize SAUR genes we overexpressed 4 closely related SUAR genes in wild type Arabidopsis background. One of these genes, ALTERED APLICAL HOOK MAINTENANCE2 (AAM2), shows accelerated apical hook development when overexpressed in wild type background. Conversely, knock-out mutant (aam2) of this gene exhibits slower apical hook development compared to the wild type indicating that the AAM2 is involved in regulating the apical hook development in Arabidopsis. Additionally, primary root growth of transgenic seedlings overexpressing AAM2 are resistant to synthetic auxin 2,4-D, but are sensitive to 1-NAA suggesting that overexpression of this gene may compromise normal auxin transport pattern. Since the apical hook development involves asymmetric cell growth in the apical hook that requires asymmetric accumulation of auxin, it is possible that AAM2 may play a role in asymmetric transport of auxin. We also found that AAM2 overexpression lines exhibit altered responses to several abiotic stresses suggesting that AAM2 plays multiple roles in plant growth and development.
This study investigates the effect of household environmental characteristics, that is, water and sanitation on the probability of child mortality in rural Ethiopia. The study used the data set that originates from the demographic and Health Survey (DHS) conducted in 2000. The analysis is conducted using a Cox Proportional Hazards model. It is a multivariate model of the child’s life duration, which analyses the effects of household’s environmental characteristics such as water and sanitation; other factors on the likelihood of the child’s death.

The study found that improved water supply results in both infant and child mortality reduction. However, the availability of sanitation facilities per se could not result in mortality reductions unless due attention is given for promoting awareness of the rural society on hygiene practices.
Past research examining message framing effects on persuasion has produced mixed results. Some studies show positively framed messages to be more persuasive than negatively framed ones. Other studies provide the opposite results. Thus, many researchers tried to find moderating variables accounting for the mixed results.

Mood is also examined as moderating variable to make relative effects in the message framing context. Three theories suggest that people in positive or negative mood will differ in their reactions to the framed messages: the mood-maintenance/mood-repair explanations, the hedonic contingency theory, the role of mood in the context of meaningful losses and gains. However, these explanations have limitations for generalization because three affective frameworks expect different results in moderating effects of mood on message framing. Conflicting results of relationship between mood and message framing can make the prediction of another moderating variable to control the effect of mood on message framing. This study suggests personality traits as one of moderating variables to control mood effects on message framing.

According to Trait-congruency theory, Individual differences in emotional processing are due to relatively stable personality traits that make people to process information that is congruent with those traits. This selective processing may be especially apparent for traits that include emotional components such as trait anxiety, trait anger. Therefore, some researches argue that studies of emotional processing must include measure of both stable traits and temporary mood states to obtain meaningful results. This view suggests that personality may moderate the mood congruency effect. An individual's standing on certain emotion-relevant personality traits may determine whether a mood congruency, mood incongruency, or no mood effect on emotional processing is obtained. In this context, this study measures personality traits and mood states to clear up the interactive effect of mood and message framing. The personality traits are used to distinguish extraversion which is closely relate to positive effect, and neuroticism which is closely relate to negative effect.

This study hypothesizes that personality traits moderate mood congruent as well as mood incongruent effect. In other words, high-extraversion individual in positive mood will recall positively framed message more, but diagnose framed negatively message more importantly than low-extraversion individual in positive mood. High-neuroticism person in negative mood will recall negatively framed message more, but diagnose positively framed message more importantly than low-neuroticism person in negative mood.

But when a person is in negative mood, some personality traits, especially related to positive effect, are related to motivations to regulate induced negative mood states. According to this view, high-extraversion person in negative mood will recall positively framed message more to repair his or her negative mood, but diagnose framed negatively message more importantly than low-extraversion person. Also low-neuroticism individual in negative mood will recall positively framed message more, but diagnose framed negatively message more importantly than high-neuroticism person in negative mood.

The purpose of this study is find the relative effect of mood and personality traits as moderating variables on message framing.
Great-tailed grackles (*Quiscalus mexicanus*) are habitat generalists occupying a wide variety of environments, with the exception of dense forests and prairies without water sources. They also find suitable habitat in urban and suburban habitats, such as golf courses, campuses, lawns, parks, and streets. In these habitats grackles are often classified as a nuisance species. Previous research has indicated there are seasonal differences in habitat use by grackles; however, habitat use and behavior have not been examined in an urban environment. The goals of this study were to document seasonal use of urban and peri-urban habitats in San Marcos, Hays County, Texas. We also documented behaviors observed in the different habitat types. We compared habitat use by season and compared behavior by season and habitat. We used program Presence to find the best fit model that explained occupancy within habitats. Chi-square tests were used to determine differences in behavior between seasons and habitat types. A principal components analysis was used to determine differences in woody vegetation among the study sites. The best fit model incorporated occupancy, colonization and detection with habitat type and time of day as covariates. We found grackles favored developed areas (85%) over open (60%) and wooded (27%) habitats. Grackle behavior changed by season and by habitat type. However, behavior needs to be examined in more detail regarding the gender.
In 1993, the Texas Legislature enacted statutes that mandated the creation of the Texas public school accountability system to rate school districts and evaluate individual campuses within the districts. Geography as a graduation requirement began in the 2001-2002 school year, with geography also being required at the middle school and high school levels, at the same time the 1993 approach was altered. The system is slated to be altered again within the next two years. How are the ratings determined, and what do they signify?
LaBuhn, Richard W.

Education, Texas State University – San Marcos

A Preliminary Study of the Effects that Four L.E.E.D. Gold Certified Elementary Schools have on Student Learning, Attendance, and Health

There has been explosive growth in green school construction in recent years. The United States Green Building Council is a leading nonprofit organization that has an accreditation system entitled Leadership in Energy and Environmental Design (LEED), and hundreds of schools across the nation are currently either being constructed or renovated to meet the LEED criteria. There are four levels of LEED certification: Certified, Silver, Gold, and Platinum. Proponents of green building claim that students who attend green schools have improved test scores, attendance rates, and health compared to students who attend conventionally constructed schools. Very few studies have undertaken the task of validating these claims, however.

This study selected four LEED Gold certified elementary schools from across the United States that had been serving students for at least three school years: Great Seneca Creek Elementary, Germantown, MD; Third Creek Elementary, Iredell, NC; Rosa Parks Elementary, Portland, OR; and Summerfield Elementary, Neptune Township, NJ. The researcher’s goal was to answer the following research questions:

1. Do students who attend LEED Gold certified schools perform better on standardized tests than students who attend non-certified schools?

2. Do students who attend LEED Gold certified schools have better attendance rates than students who attend non-certified schools?

3. Do students who attend LEED Gold certified schools report fewer health problems than students who attend non-certified schools?

Each of the green schools was assigned to a cohort that consisted of other elementary schools from within their districts. A simple linear regression model was then used to compare standardized math and reading test scores within each cohort. The same model was used to compare attendance rates as well. The regression model controlled for student socioeconomic status, teacher experience, and class size in most instances. Health data was collected for Great Seneca Creek Elementary, MD (School year 2009-2010) and Rosa Parks Elementary, OR (School years 2006-2010). This information was presented in case study format.

The test and attendance data failed to support the claims that students who attend green schools have better test scores and attendance rates.
The purpose of this study is to explore possible links among the perceived attractiveness of women and overall workplace competence as measured by four components: skills, knowledge, empathy, and delegation of authority. Current literature available discusses various workplace competence components extensively, but does not address the above possibility of any relationship linking the specific five components together. The study takes place at a private university located in Texas with a randomly selected group of students being the participants of the study. The Evaluation of Perceived Attractiveness Survey, designed by one of the researchers in this study, is used as the scale in the study to measure perceived attractiveness, skills, knowledge, empathy, and delegation of authority. The data is entered and run through the SPSS program to determine if any significant relationships exist among the five components mentioned.
Lelo, Linda

Recreation, Parks & Tourism, Texas A&M University

Understanding the Experience of African American Visitors at the African Burial Ground National Monument

Sites of African American heritage in the United States are numerous, significant, and diverse. They range from civil war sites, to houses of major civil rights figures, to slavery-related sites. Slavery-related sites include plantations, burial grounds, castles, and even museums. Several studies have shown that very few African Americans visited plantations, possibly because of the traumatic history attached to the sites. Much more research is needed on slavery-related sites in the U.S. that attract a larger number of African American visitors like the African Burial Ground National Monument (AFBG) in New York City.

The AFBG is a significant heritage site for African Americans, but also for all Americans as it is called one of the most important archaeological finds in U.S. history. Ultimately, the discovery of the 17th century African Burial Ground, where around 15,000 free and enslaved Africans rested, lead to the erection of a memorial in 2003 and a visitor center in 2010.

The purpose of this research is to get a better sense of how African American visitors experience the ABG, to understand the meanings these visitors attach to the ABG, and to see how the narratives of the ABG present slavery in an uplifting manner. This work is the result of my dissertation field work conducted in New York during the summer of 2010. In-depth interviews, observations, documents, and field notes were used as data collection techniques.
This thesis investigates charactonym and name symbolism in Nilo Cruz’ *Anna in the Tropics* to show how they embody and illuminate particular aspects of Latino and American culture. Charactonym is the practice of giving fictional characters names suggestive of their inner nature. Name symbolism builds on charactonym and gives insights into the real life society and culture that the characters represent. Do these two literary devices help to illustrate the different attitudes of Latinos and Americans toward tradition and modernization, homosexuality, and traditional gender roles as they are presented in the play? When the characters’ actions bring these two cultures together, a constant struggle exists to find a comfortable union between them. Each character, strengthened by charactonym and name symbolism, offers insights into a particular element of Latino and American culture; however, they do not supply a definitive answer. Ultimately, this play presents various Latino and American culturalisms in such a way as to facilitate a dialogue on the pros and cons of a hybrid culture. Data drawn from a close reading of the play, an intensive investigation of the characters’ names, and contemporary literature all show evidence of a play that prods the reader to confront the notion of cultural identity. The investigation concludes that through charactonym and name symbolism Cruz utilizes each character in *Anna in the Tropics* to present certain Latino and American culturalisms, thereby allowing the reader to gain a deeper and more significant understanding of the play. Cruz presents the issues and lets the reader draw his own conclusions.
Evaluation of a Culturally Sensitive Mentorship Program for Minority Breast Cancer Survivors

The purpose of this study was to evaluate the Joy Luck Academy mentorship program, a 10-week culturally and linguistically appropriate curriculum specifically designed for Chinese breast cancer survivors. 12 Chinese breast cancer survivors, who have completed primary treatment within the last 12 months, and 7 mentors participated in this program. Participants were recruited from the local communities, and enrollment was available on a first-come-first-serve basis.

The curriculum of the mentorship program included two major components. The first component provided information to increase the participants’ knowledge of breast cancer post-treatment health management, including aspects of physical, mental and emotional recovery. The second component paired up each participant with a trained breast cancer survivor volunteer who provided one-on-one peer support and mentorship. The curriculum was designed and executed by medical oncology specialists, including doctors, nurses, psychologist, and nutritionist; experienced researchers in breast cancer survivorship; and an administrative advisory board of six members, some of whom were breast cancer survivors. The program met once a week for a two-hour session for 10 consecutive weeks. Each session included a 25-minute individual conversation session between each participant and her corresponding mentor, a healthy dinner prepared by program staff, a 30-minute exercising session, and a main activity which may be topical discussion, sharing of experiences, or guest speaker presentation. Participants were provided many written resources, including a comprehensive community cancer resource guide, lecture notes from presentations, recipes for healthy cooking, etc.

Pre-program questionnaires were distributed to mentees before they started the mentorship program, and post-program questionnaires were distributed to them upon their completion of the program. Mentees filled out the pre-program surveys at home and handed them in class, and they mailed in the post-program questionnaires.

The baseline and follow-up health questionnaires were used to evaluate the efficacy of the program. Descriptive statistics and repeated measure ANOVA of health outcomes between baseline and follow-up revealed that the program was beneficial: Depressive symptoms (assessed by the Brief Symptom Inventory) showed significant decrease at follow-up than at baseline (F = 6.448; p < 0.05; \( n_p^2 = 0.417 \)). The mean of depression measure decreased from 0.8833 to 0.4833, with the standard deviation dropping from 0.8960 to 0.5119. Anxiety symptoms also showed decrease at follow-up than at baseline though not significant (F = 2.530; p = 0.146; \( n_p^2 = 0.219 \)) due to the small sample size. The mean of anxiety measure decreased from 1.0333 to 0.6833, with the standard deviation dropping from 1.3444 to 0.9211. The results suggest that this kind of mentorship program has significant psychological benefits and may be utilized and further developed in the future to help minority breast cancer survivors recover and return to normal life.

Funding Source: Susan G. Komen Foundation (BCTR0707861 (Q. Lu) , PI: Qian Lu), American Cancer Society MRSGT-10-011-01-CPPB (Q. Lu) (PI: Qian Lu).
Previous studies on mass media and social behavior state the importance of media exposure as an important component of behavior change (Bandura, 1986; Kincaid, 2000; Rogers, 1995). The purpose of this study is to determine how the use of Facebook, as a mass medium, affects interpersonal relationships between college students, their families, and their partners.

Studies have shown that approximately 20 million college students use Facebook for socialization and entertainment. It is particularly used as a way to communicate with friends, family, and romantic partners. Facebook, along with other social networks, have changed the norms of social transparency, making aspects of our personal lives more visible to those we network with online (VanManen, 2010). As the consumption of Facebook rises, we increasingly see a crossover between user’s online interactions and real life relationships (McEwan & Guerrero, 2010). Therefore, based on previous premises (Bandura, 1986; Kincaid, 2000; Rogers, 1995), the authors hypothesize that Facebook does affect interpersonal relationships among college students, whether it rekindles relationships or causes conflicts.

This quantitative study will employ a survey for data collection with a convenience sample of 300 college students. The focus of this research will be to determine the effect of Facebook usage on interpersonal relationships among college students between the ages of 18 and 25. The questionnaire will measure the quality and amount of interaction with family members, friends, and romantic partners both on Facebook and in real life. In addition, it will include open-ended questions to explore more in depth the impact of Facebook on interpersonal relations. For example, how do students use Facebook to handle interpersonal conflicts? Has Facebook caused conflicts in your relationships? How does Facebook change the way students maintain interpersonal relationships? Does Facebook have a positive or negative effect on interpersonal relationships?

The results of the study will provide a significant contribution to the academia and to society by revealing the impact social media, particularly Facebook, has on relationships today.
In modern manufacturing, supply chains are increasingly becoming global, virtual and short-lived requiring rapid and dynamic changes to keep up with the current marketplace. A challenge in this respect is determining suitable suppliers in a timely and accurate fashion. Current methods of finding potential suppliers have difficulties fully addressing both attributes: time and accuracy. Keyword-based search methods performed by computers can be very fast. However, given a textual description of a supplier, without performing complicated natural language processing, it is difficult to determine the context of words in a block of text resulting in inaccurate results. Human domain experts are able to interpret context within a textual description as well as perform reasoning with what is known about a supplier; this allows for highly accurate results with a small set of suppliers. As the number of possible suppliers increases, the time for the human expert to examine all possible suppliers increases and the potential exists for an increased number of human errors on the part of the domain expert.

In this presentation, the Manufacturing Service Description Language (MSDL), an ontology for formal representation of suppliers’ capabilities and manufacturing services will be described. MSDL uses the Web Ontology Language (OWL), a standard endorsed by the World Wide Web Consortium, which allows definitions and meanings to be constructed for manufacturing concepts that are understandable by computers. Also information about a search engine that has been developed that interprets the MSDL ontology will be presented. A user can use the search engine to create a query based upon their particular needs and desires in a supplier. The search engine returns a ranked list of potential suppliers based upon the query and the information contained in the ontology. Finally, a comparison will be shown of the results of this search engine with the results from a pair of independent domain experts.
When first examining *The Canterbury Tales* it would seem that Chaucer had a poor opinion of women. However, Chaucer was aware of strong, intelligent and capable women. Women exerted power and influence in ways men were not typically allowed. Therefore, the most important power that women had was the power to play the role of the intercessor, intervening on behalf of men. This role as intercessor was associated with peace and mercy and was typified by the saints and the Virgin Mary. Saints in the Middle Ages played a key factor in a person’s faith. One prayed to a saint so that the saint would intercede with Mary, Christ, or God on the person’s behalf. The saint was also someone to imitate, an example to follow. The Blessed Virgin Mary was the prime saint. As the Queen of Heaven she sat at the right hand of Jesus reigning over the kingdom of Mercy while her son ruled over the kingdom of Justice. As the ruler of the kingdom of Mercy and the bridge between humanity and Christ, the Virgin was the perfect example of how powerful a woman could be as an intercessor. The Blessed Virgin Mary was not the only example Chaucer had for women as intercessors at this time. There were at least two very real living examples in England: Anne of Bohemia, the first wife of Richard II; and Joan of Kent, the mother of Richard II. The living examples of women interceding can be seen in Chaucer’s writing. When examining *The Canterbury Tales*, one can most clearly see this expressed in *The Prioress’s Tale* and *The Second Nun’s Tale*. In a more secular form, one can see intercession occur in *The Knight’s Tale, The Wife of Bath’s Tale*, and *The Clerk’s Tale*. *The Tale of Melibee* is the Chaucer tale that is the closest portrayal of Anne of Bohemia and Joan of Kent as a woman interceding on behalf of men in politics. Chaucer was not the only author to see this power in women nor was Anne of Bohemia and Joan of Kent the only women in history to wield it.
The Maya glyph ‘Lord’, or *ajaw* in spoken Mayan, is an example of a morpheme and associated graphical symbolism loaned to the Maya from the Gulf Coast Olmec culture. In my presentation I will discuss the hypothesis that the linguistic elements of the word *ajaw* can be shown to express this Olmec influence based on the historical linguistic comparison of Mayan and Mixe-Zoquean, the language of the archaeological Olmec culture. Several scholars, including Brian Stross, Virginia Field, and Terrance Kaufman have illustrated the significance of my hypothesis, which states that the linguistic and epigraphic representations of *ajaw* define the Southeastern Mesoamerican concept of kingship.

The purpose of the supporting research is to determine if the etymology of *ajaw* can provide insight into the earliest function of non-royal elites before the manifestation of kingship into the Maya social order. My hypothesis is further supported by a literature review that focuses on the comparison of *ajaw* to possible Mixe-Zoquean roots. These roots provide more complex elements of morphology to the Maya definition of lord/*ajaw*. Furthermore, the early representations of Mixe-Zoquean morphemes and visual symbols associated with Olmec kingship provide clues about the original function of kings and elites in Southeastern Mesoamerica.
McMullin, Lee

Education, Texas State University – San Marcos

Does Developmental Reading Benefit Hispanic Males?

Problem:

Though developmental education has long been part of American post-secondary education, reliable evidence of its benefits, especially for ethnic minorities in reading, is lacking (Swail, Cabrera, Lee, & Williams, 2005). Developmental education has costs, however, in added tuition, time-to-completion, and discouragement (Bailey, 2009). Since Hispanic males are among the least likely students to achieve a post-secondary credential and among the most likely to be placed in developmental reading, policy-makers, practitioners and students themselves need to know whether developmental reading is beneficial or detrimental to their success (Adelman, 2004; Clery, 2008).

Research questions:

This study seeks to determine whether academic outcomes for male Hispanic students in a large 4-year state university program improve as a result of taking a developmental reading course.

The specific questions to be answered are:

1. How well do background characteristics (gender, ethnicity, socio-economic status, high school GPA, ACT/SAT score, high school rank) predict the success of Hispanic males in a 4-year college as measured by:
   1. Enrollment in the second semester
   2. Enrollment in the 2nd year
   3. Reading intensive course grade
   4. 2nd year ending GPA
   5. Grade in non-reading-related fine arts or PE courses
   6. Accumulated credits at end of enrollment at the university?

   How well do moderating variables (placement and enrollment in developmental reading, placement but no enrollment in developmental reading, not placed in developmental reading) predict the success of Hispanic males in a 4-year college as measured by the same 6 variables.

Method:

Using path analysis this study will attempt to establish the results for Hispanic males who were placed and enrolled in developmental reading with students who were placed but did not enroll in developmental reading or were not placed in developmental reading in order to identify what factors, including developmental reading instruction, may contribute to college success for Hispanic males. Data for the study will be drawn from the University records for a specific semester-long course in reading improvement and from similar records for the comparison groups. Results are expected to identify which of the variables considered most strongly correlate with measures of academic success. These results will further indicate whether developmental reading is efficacious for Hispanic Males.
McNeal, Frances

Women's Studies, Texas Women’s University

“Sacred Activism” in the Face of Colonialism: The International Council of Thirteen Indigenous Grandmothers

Colonialism has continued to undermine the lives of Indigenous people through “doctrines of conquest” as well as create relational dualistic paradigms that rank, stratify, and otherize those who are not considered the norm. This paper, examines how The International Council of Thirteen Indigenous Grandmothers, healers from Alaska, North, South, and Central America; Africa; and Asia practices what they describe as “sacred activism” to counteract the negative impact of colonialism on Indigenous people globally, the inhabitants of our global community, and the earth. I argue that The International Council of Thirteen Indigenous Grandmothers represents a relational worldview of interconnectedness that perceives everything as interconnected and because of their worldview they challenge the relational dualistic paradigms of colonialism. In addition, because of their worldview they offer a viable alternative to bring about healing and peace in global relations among people, non-humans, and the earth through a transnational grassroots movement in an era of globalization.
The American Correspondents in Paris, an Elite Group Overseas

Many believe that the glorious days of foreign correspondents are long gone. In the 1990’s several studies demonstrated an already significant and consistent decreasing interest in foreign news among US media. In such a hostile context, this study, conducted between September 1996 and May 1997 in Paris, France, focused on American correspondents based in France.

For this qualitative study, a US foreign correspondent was defined as a journalist, reporter, and/or editor working full-time, part-time or on a freelance basis for a US media outlet. In order to qualify for the study, a correspondent had to have registered with the French Minister of Foreign Affairs, which ultimately provided a precise listing of contact names.

A questionnaire was developed following preliminary individual interviews with experienced reporters based in Paris. Drawing from field observations emanating from long- and short-term internships with several US media--as well as one-on-one in-depth interviews with freelancers, reporters, editors and bureau chiefs--the study presented an ethnography of this small group who cover France for their respective US media. This study’s goal was to verify whether the American correspondents represent an elite group and whether a Paris assignment was indeed a professional reward.

The findings confirmed the hypothesis as they revealed that through their socio-demographics, levels of experiences in the job, common work practices, and previous positions, American correspondents in Paris were regarded as ‘la crème de la crème’, working in a prestigious destination. They were an elite group, trusted by their editors, having demonstrated a higher level of journalism earlier in their careers. The results also indicated several concerns such as the growth of the Internet, the lack of interest in foreign news in the US and issues linked to personal social relationships. It clearly revealed as well their differences in role perceptions.

While some studies questioned whether foreign correspondents should be placed on journalism’s endangered species, the US media continued at the end of the 1990’s to be represented in Paris by experienced reporters belonging to an elite group.
Male anxiety about the lack of stability in the French government, economy, and social structure following the Revolution was expressed through attempts to impose increasingly strict control over women. The creation of the “separate spheres” philosophy confined women to the realm of domesticity and removed them from virtually all public discourse. While “proper women” obeyed these strictures, others continued to participate in the public sphere men claimed for themselves because of financial necessity or personal preference, usually a combination of the two. Prostitutes represented a double-edged threat, as both women who refused to remain cloistered in the private sphere and women who did so as sexual beings. With public honor for men secured by private virtue by women, masculine privilege was ironically fragile and open to constant challenge, as the very basis for that privilege left men open to constant worry over their ability to maintain it. Women experienced this anxiety in a number of ways. “Respectable women” acquiesced and saw their opportunities for public discourse, individual success, and sexual identity steadily reduced and dismissed. Women in prostitution experienced male anxiety differently, with each level of this highly stratified world reflecting different fears and encountering different levels of regulation and discrimination.

At the lowest levels, street and brothel prostitutes with limited resources and influence experienced this anxiety most directly. With no means to resist state impositions of regulation, they were subject to draconian and minutely-detailed legislation controlling every aspect of their lives. This system of regulation, ostensibly created to control the spread of venereal disease also served to impose regulation and “order” on what was perceived to a be a disruptive force within society. Mid-level prostitutes experienced less direct control, simply by being less available to it. Linked in public perception with the rising middle class, they stoked concerns about the rapid social economic changes sweeping through society. Legislation designed to control street prostitution could affect these women, as the regulations were so broadly drawn and open to interpretation that any woman in public was in some danger of accusations of illegal behavior and therefore open to arrest. At the highest levels of prostitution, courtesans moved in a completely different world. Beauty, personal charm, the ability to blend in with the upper levels of society, and position as a status symbol insulated these women from the indignities faced daily by those at lower levels. Public perception of class and social status created celebrity status for many of the courtesans, and for the most part, winked at moral transgressions so long as they stayed within the role they were given. Courtesans were attacked by many as venal and grasping, a sign of moral decay that was slowly destroying the best families, but the growing public appetite for celebrity and display delighted in the opulence, luxury, and personal style of the top level courtesans.
Moore, Todd and Dixon, Richard

Geography, Texas State University – San Marcos

Seasonal and Annual Temperature Trends in Texas

This study spatially examines annual and seasonal temperature trends for the state of Texas using data from forty-two stations in the United States Historical Climatology Network (USHCN) over the period 1932 to 2002. Linear regression analysis is used to determine temperature trends. The trend values from these analyses were plotted using the geographic coordinates of their associated USHCN station. This provides maps of Texas showing forty-two locations and their associated annual and seasonal temperature trends. These maps, however, do not provide any information about temperature trends in the areas between the USHCN stations. Using a geographic information system, a spatial interpolation procedure is used to estimate temperature trend values for locations where USHCN stations do not exist. These estimations are based on the trend values of the existing stations. The final result is a series of maps illustrating a continuous surface of temperature trends across Texas.
Examination of foraging ecology and food availability is critical to our understanding of the biology of a species. An individual’s survival and reproduction is dependent on its ability to locate and capture prey; thereby obtaining nutrients for its energetic requirements. The current literature is lacking quantitative information on the foraging habitats or available foods of the federally endangered black-capped vireo (Vireo atricapilla). The objectives of my research are to examine the foraging behavior, use of foraging substrates, and changes in foraging behavior and available forage of the vireo during the breeding season. Using repeated foraging behavior surveys, I recorded foraging maneuvers and foraging substrates. I also recorded a vegetation time-use budget to estimate the total time spent in each available vegetation type during foraging surveys. I used foraging and time-use data with vegetation survey data to compare vegetation used to the available vegetation composition. I repeatedly collected branch clippings for arthropods to monitor changes in available forage. I examined temporal changes in foraging behavior and vegetation use, and compared to shifts in arthropod abundance. These findings are from year 1 of a 2-year study. Initial results from foraging and time-use surveys reveal that shin oak (Quercus sinuate), live oak (Q. virginiana), and Ashe juniper (Juniperus ashei) are the primary species used by the black-capped vireo, with the foliage-gleaning foraging method. Data collected during the 2011 breeding season surveys will be analyzed with 2010 data to address the remaining questions and assess temporal trends in foraging behavior and available foods.
Introduction and purpose

The purpose of this investigation was to determine the comparative effectiveness of three distinct pedagogical approaches by conducting an experiment in which three groups of students were taught in different manners, according to the theoretical premises that support each approach. The three groups were then tested to reveal which method was most effective. The target structure for the experiment was Spanish object pronouns. This particular structure was chosen because it is one with which students (particularly English speakers) struggle. For example, in English, the pronoun *him* is the same regardless of its usage as a direct object, as in: "Sally hit *him,*" or as an indirect object, as in: "Sally gave *him* the gift." In the first example, the appropriate Spanish pronoun would be *lo,* whereas in the second example, the appropriate pronoun would be *le.* Also, students have trouble understanding Spanish pronouns' appropriate place in syntax, which is before the verb, as opposed to English pronouns' position after the verb. These and other factors make Spanish object pronouns difficult for students to grasp, and therefore difficult for teachers to teach.

Methodology

Over the course of two semesters, the instructor taught three groups of students enrolled in Spanish 1410 (elementary level) at Texas State University, San Marcos. At the outset of the experiment, all three groups of students took a pretest that covered direct and indirect object pronouns in English in order to determine how much they knew about the grammatical function and usage of the target structure before instruction began. Throughout the semester, each group was exposed to a different style of instruction of the target structure: the traditional approach, the semi-constructivist approach, and the constructivist approach. The traditional approach, which is the approach most commonly found in textbooks currently in circulation, typically explains the function and usage of object pronouns in English and then compares them to their function and usage in Spanish. The semi-constructivist approach, which uses authentic dialog as a point of departure for the lesson, uses logic and meaning as the basis for understanding rather than grammatical rules. Finally, the constructivist approach allows students to form hypotheses about the function and usage of object pronouns in Spanish based on a limited number of example sentences, and then students continue to test those hypotheses as exposure to the target structure increases. Each group of students had different homework assignments and in-class supplementary materials based on the style of instruction they received.

Results

The target structure was included on three separate unit exams as well as the course final exam. The percentage of correct responses to the exam items that featured the target structure was then compared across the three groups in order to draw conclusions about the effectiveness of each method.
Nalajala, Naveen and Tongdan, Jin

Computer Science, Texas State University – San Marcos

Communication Technology-A Survey on Its Application in Power Grid Automation

Problem

According to the Department of Energy, the transmission growth in the USA is exceeding 25% every year, yet the steps taken towards the innovation and renewal are among the lowest of all industries. Although information technologies such as Internet, wireless meshes, and wireless sensor networks can greatly automate and simplify the electricity supplying process, many technical issues concerning the implementation of these information technologies are still open.

Methodology

Today’s smart grids should posses the following attributes to compete in dynamic changing technological world: Intelligent, Efficient, Accommodating, Motivating, Opportunistic, Quality-focused, Resilient, and Green. The key to implement these features is the integration of the high-speed communication with the information technology.

Designing cost-effective, yet reliable, communication architecture is crucial. It might be appropriate to consider the hybrid network architecture for studying its application to the electric system automation. Compared to traditional SCADA (Supervisory Control and Data Acquisition) technology, hybrid networks provides high speed communication within the core network and the last mile connectivity.

Other communication technology is WiMAX (Worldwide interoperability for Microwave Access) with Wireless Mesh Networks for automation. It has advantages like high reliability, low installation costs and increased coverage area but has design issues when dealing with harsh environments, placement of signal towers, mobile support and security related issues.

In today’s competitive electric utility market, real time information about the consumer electric demands becomes a key factor in reliable delivery process. In the study, Demand side management (DSM) technology called On-line Purchase Electricity Now (OPEN) provides us the concept of giving incentives to the users. If the customer’s demand order and the actual consumption match with each other, she/he will receive more financial incentives than the others. The OPEN system aims to make customers to “order the electricity they need, and consume exactly what they ordered”.

Conclusion

We have proposed a novel DSM concept (i.e. the OPEN system) that allows customers to order and purchase electricity via the broadband Internet. The preliminary research shows that on-line electricity reservation system is technically feasible, theoretically justifiable, and financially achievable. The implication of the OPEN system will go beyond the design and operation of smart grid systems. It opens the way to managing the production and the distribution of many other service industries such as water distribution, natural gases supplying, and health care systems.
Cambodia is a country that is struggling to emerge from the genocide and cultural devastation caused by the Khmer Rouge period which occurred from 1975-1979. It is a country with a broken infrastructure and poor access to quality education, where corruption intervenes any attempts towards rehabilitation and development. Currently, there are over 400 local NGOs and 200 international NGOs operating in Cambodia. Although some NGOs are more effective than others, they are all instrumental in improving the lives of the Cambodian people.

My paper discusses the problem of rural community development in Cambodia and how collaboration between local and international non-governmental organizations can benefit rural community development. Because local NGOs are predominantly based on volunteerism, they often do not have access to adequate resources, funding, and expertise in order to be effective agents of change. NGOs today benefit most when they form partnerships with established international organizations where expertise, technology, and political will are readily available.

The methodology of my research is built upon a foundation of direct hands-on experience and documentation, interviews, and general research on the development of NGOs operating in Cambodia. The problem is presented as a case study where I argue that collaboration between local and international non-governmental organizations is necessary to affect positive change in the area of sustainable community development in rural Cambodia.
Women during the Victorian period were considered to be predisposed to mental illness due to the perception that they did not have the intellectual capabilities of men. This theory became particularly prominent in cases where women did not adhere to the traditional female roles as a consequence of a desire to educate themselves, explore their sexuality, and use their imaginations. This madness theory spread quickly through British society as a result of Victorian needs to maintain hierarchal boundaries between male and female genders. In *The Victorian Girl and the Feminine Ideal*, Deborah Gorham posits that “adolescent girls were advised that they must be content to be ‘inferior to men’” (119). So, early on, young ladies were instructed to “accept both the limited confines of domesticity and a very narrow range of public self expression” (Gorham 119). Girls were trained to be docile, to still their imaginative impulses; those who rebelled, whether children or grown women, were viewed as hysterical, suffering from mental breakdowns, which led medical professionals to diagnose them as mad.

In *Women’s Madness*, Jane Ussher aligns hysteria with the daughter’s disease, suggesting that “nervous, susceptible women between puberty and thirty years of age...are most frequently visited by hysteria; and such constitutions have always a greater aptitude to strong mental emotions, which on repetition, will superinduce mental derangement” (74). If women prone to hysteria are in this age range, and if hysteria is a symptom of sexuality, then writers of fiction can use hysteria to suggest sexuality covertly.

While Lewis Carroll’s Alice does not fall within the age group delineated by Ussher, most film adaptations have depicted her as older, falling into this age group and therefore portraying her as psychologically unstable because of her creativity and imagination. It may seem odd to link women’s madness and imagination with Carroll’s *Alice in Wonderland*, since he wrote the story to encourage young girls to use their imaginations, be creative and have fun. However, society continues in its attempt to make Alice a sexual being by changing her age.

In aging Alice, film directors have used her as a conduit to explore women’s mental illness and sexuality because these are issues society continues to obsess over. This cultural obsession with insanity and sexuality reveals a warped lens through which society views and ages Alice into adulthood, in a way causing her loss of innocence and therefore, forcing her corruption. By tracking changes in culture’s attitudes toward female sexuality and mental health, beginning with Carroll’s *Alice in Wonderland* to modern film adaptations by male directors, this paper will examine how Alice has been changed to fit society’s views of women’s mental illness and sexuality, which necessitates a child’s loss of innocence.
Oyeyipo, Elizabeth

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An Empirical Study of Requirements Management in an Agile-Scrum Development Environment

Producing high quality software products that meets the requirements of stakeholders or customers is a major issue in the field of software engineering. The dynamically changing environments make changes to requirements in the software development process, an inevitable task. Poor requirements and changes to requirements are major elements that have led to late or failed software projects.

Agile software development, a currently evolving methodology embraces changes to requirements in a more positive way. It follows an iterative development process, which produces increments of deployable software as oppose to documented report in the traditional development process.

This research reports an empirical study of requirements management in an Agile-Scrum software development process. We compare how the changes influenced the software development, from the human hours/effort expended, and the functionality produced. We performed empirical analysis on data collected from students taking CS4398 and CS5394 Software Engineering project class of the Computer Science Department. Results show that when changes were made to the requirements, functionality produced by two of the development teams had a significant increase, while the other six teams had no significant differences. Also, the amount of effort does not correlate to the number of functions produced.
College and University music programs play a pivotal role in the survival of Western Classical music, producing virtuoso performers capable of recreating this music and, more importantly, a musically-educated audience who is conscious of what they are hearing. Though this is an undeniably positive phenomenon, it does not represent the Western culture’s musical evolution as a whole. This is instead represented by our popular music and dance music genres. Here, a musically un-educated audience dictates the evolution of musical conventions by their collective economic approval.

Much can be gained by the study of these popular music genres, including a more complete understanding of our culture and the changes that have occurred in both the music itself and the cultural purpose of that music. This paper will explore these topics, specific to twentieth-century dance music. I will outline changes in syncopation patterns and focus on some theoretical aspects of rhythm and tonality in the dance music of the present. I will also include a brief study of how these musical conventions were shaped by the culture at large, based on current research into musical cognition and perception. This paper is, however, of a primarily theoretical nature and will discuss cultural and historical matters only superficially. Finally, I will reference other theoretical works which study twentieth-century dance music and I will give suggestions for further research.

This paper will work toward the goal of understanding how the mind perceives dance music and what factors may affect the public’s collective musical taste.
There is an ongoing hatred of university Creative Writing programs among scholars and seasoned writers alike. A recent rash of criticisms has reinvigorated this argument, especially among poets. The art of poetry is especially susceptible to these attacks because it has increasingly faded from mainstream attention since the inception of MFA programs in 1936. Many of America’s most famous poets have argued for the dissolution of university Creative Writing, including Donald Hall and Robert Bly. In this paper, I propose a solution to the popular complaint that poetry is a doomed art because of its withdrawal into academia. I contend that increasing admissions to these programs will increase public interest in the art as a whole. Using the model of the self-help group and the proliferation of Alcoholics Anonymous, it is apparent that the spread of a group-oriented workshop format is dependent upon a more widespread consciousness of the format’s benefits and nuances. The poetry workshop is no exception, especially given the highly personal nature of the subject matter. Poetry discomforts many readers because of this difficulty, but this problem could be overcome by making the academic study of poetry more open to the public. As proof, the widespread acclaim that Julia Cameron has received for her bestselling self-help book *The Artist’s Way* demonstrates the potential for increased awareness of art via the workshop. Cameron's method focuses on the use of art as a means of defeating alcoholism, and is even a twelve-step program that utilizes the workshop format. The popularity of her program suggests that a more open admissions policy to the highly selective MFA Programs in Poetry would increase public awareness of poetry and thus increase its popularity and book sales as well. A larger, more learned audience for the art would also push it to change in unforeseen ways that would make the complaints against MFA programs obsolete.
Applying the phenomenological theories of French philosopher Gaston Bachelard in *The Poetics of Space* and *The Poetics of Reverie*, my interpretations of James Joyce’s plots and protagonists in *Dubliners* demonstrate Bachelard’s assertion, that “to enter into the domain of the superlative, we must leave the positive for the imaginary” (*Reverie* 89). Joyce carefully constructs his details around ellipses, offering the reader of *Dubliners* an even more meaningful, “superlative” plot, a second plot that can be imagined with the aid of clues within the evident, or “positive” plot. What I intend to bring into better balance by these analyses is what I believe to be a biased and primarily negative critical reading that has been widely propagated.

Joyce’s treatment of *Dubliners* has been described by Sydney Bolt as “clinical” (16), and in fact it is Joyce’s clinical approach, along with his meticulous attention to detail, that allows the reader to see the strength in his characters, characters who traditionally, in critical analyses, are considered weak or pathetic.

Joyce was a virtual transient from age nine, when his family began their descent through various houses and deteriorating neighborhoods. By peopling with his fictive characters the houses he had inhabited briefly while growing up in Dublin, Joyce became, by writing *Dubliners*, Bachelard’s “dreamer of houses” (*Space* 5), an ideal compromise for Joyce’s unsettled temperament, because he was thus “housed everywhere but nowhere shut in” (62).

Applying Bachelard’s poetics of space, I posit a “topoanalysis” of Joyce’s “Clay” and “The Sisters,” to demonstrate how Joyce’s narratives reveal the deeper natures of his characters, and perhaps even future events, revelations that predict the propensity of Joyce’s Irish protagonists to survive despair and defeat against great odds.

In the second part of this essay I describe Bachelard’s “cogito” of the dreamer from *The Poetics of Reverie*, as it applies to the mental state of Joyce’s character, Emily Sinico, in “A Painful Case.” This analysis is an intimate exploration of the interiority of a lonely woman who opts out of “reality” in defiant refusal to pretend that her life is other than an unbearable, loveless existence. Applying Bachelard’s poetics of reverie, I illuminate the unusual but, I argue, deliberate choices made by Emily Sinico.
The Indiana Plan was a legally protected system implemented between 1907 and 1909 designed to systematically purge future generations in American WASP society of perceived criminals, degenerates, and other unfit groups of people by eliminating their reproductive rights through compulsory sterilization. While the deceptively-named system was never widely practiced throughout the state of Indiana, its creator and sole implementer, Dr. Harry Clay Sharp, was successful in propagating his ideology throughout the nation under the guise of eugenic social improvement. Although Dr. Sharp was not the first to establish a eugenic philosophy, the sentiment behind the American eugenics movement comprised a significant portion of the WASP ethos and represented the thinly-veiled popular prejudices of the Progressive Era.

*Overcoming This Unfortunate Condition: Progressivism and the Birth of Compulsory Sterilization in Indiana, 1907-1909*, explores the pervasiveness of Progressive ideologies in the legal establishment of the nation’s first compulsory sterilization legislation through an analysis of the primary medical and socio-political writings of Dr. Harry Clay Sharp. *Overcoming This Unfortunate Condition* represents an effort to shed light on the American drive toward social progress through eugenics, and is an excerpt from *The Indiana Plan: Dr. Harry Clay Sharp and the Eugenic Sterilization of Criminals and Degenerates*, a Senior Honors Thesis presented to the faculty of the Department of History of the University of Houston, in partial fulfillment of the requirements for the Degree of Bachelor of Arts, December 2008, by David Alexander Quiroz.
We used the Malagasy primate communities to examine the role of harsh environmental conditions and species ecological trait similarities in structuring the composition of lemur community across Madagascar. We gathered species composition and phylogenetic data for 32 lemur species communities and reconstructed a more complete phylogenetic tree of the 68 actually known living species. We measured the relative phylogenetic distances within and between communities by calculating two phylogenetic metrics. We used minimum rainfall, maximum elevation and habitat type as our environmental factors and body weight, diet and activity rhythm to test the role of ecological similarities. We showed that the majority of individual communities are made of phylogenetically over dispersed assemblages and are more distantly related than expected by chance. Environmental filtering is not a strong mechanism in determining lemur community assemblages though is present in dry environments and low elevations. In these areas, activity and diet show convergence. Overall lemur communities show a divergence of the species body weight and activity rhythms. However, their body size is limited by the species similarity in diet suggesting that resources competition is a strong mechanism in shaping their assembly. The over dispersion pattern of lemur communities in Madagascar is due to a limiting similarity in their traits which are influenced by environmental factors rather than by direct environment filtering.

*Keywords*: Malagasy primates, community ecology, phylogenetic over dispersion, habitat filtering, limiting similarity
The demand for clean, renewable energy is intensifying given rising fossil fuel prices, concerns for the environment, and a desire to reduce our foreign oil dependency. The question for public administration is: what are the tools, incentives, and implications for formulating, implementing, and evaluating policy that affects cleaner energy specifically and environmental concerns in general?

The U.S. Congress, Office of Technology Assessment has identified various environmental policy tools. These tools are designed to help in one or more of the three general phases of the policy cycle—formulation, implementation and evaluation. Single and multi-source tools can directly limit pollution. Examples include integrated permitting, trackable emissions, technology specifications, and product bans and limitations. Knowledge of the range of policy options and their development and applications will aid policy makers. There should be clear justifications, and a thorough understanding of the options, when choosing and developing the details of these policy tools. An example of one such policy tool is Life Cycle Assessment (LCA), which measures environmental impacts of a product, process.

Life Cycle Assessment assesses the entire life span of the product (or process) to evaluate the environmental impact from start to finish (including all inputs and outputs). "LCA should be seen in a broader context, as a tool that provides information on the product’s environmental impacts for decision making." (Miettinen et al., 1997, p. 279) As such, LCA could be a very useful tool for policy makers who seek to address environmental issues. SETAC (1995) states the "application of the life-cycle concept may improve the public policy process by providing more information to decision-makers in a comprehensive manner" (p. 14). In fact, LCA is a very sufficient method in providing quantitative values for qualitative information. LCA has three distinguishable quantitative elements: inventory analysis (data collection of energy and materials), impact assessment (potential impacts to the environment), and improvement assessment (identifies opportunities to affect environmental improvements).

Life Cycle Assessment can clearly guide decision makers in their goals of informed decision-making. LCA provides a holistic perspective, which can and should be used for regulatory, economic, and technological policy making.
Over the past decade adolescent obesity has been on the rise (CDC, 2000). The Centers for Disease Control and Prevention (2000) reports that 70% to 80% of overweight adolescents will continue to be obese in adulthood, with increases in morbidity and mortality. Furthermore, the CDC (2010) reports that adolescents are engaging in more sedentary behaviors and are consuming more calorically dense foods. The rise in adolescents’ obesity status has raised questions on the effects of higher body mass indexes on academic performance. Past research has attempted to link cardiorespiratory performance, body mass index with academic outcomes. Current findings suggested, that higher cardiorespiratory performance and lower BMI are associated with better academic outcomes on standardized testing (Castelli, Hillman, Buck, & Erwin, 2007). Despite the positive links found between the former variables, school districts are limiting access to physical activity (Zuñiga, 2000). The Department of Education: “maintains that the time spent on physical activity should be better spent on academic pursuits” (Tremblay, Inman, & Williams, 2000). The current study examined the relationship between cardiorespiratory performance and academic outcomes of middle school boy and girls. Using the standardized FITNESSGRAM® (Cooper Institute, 2007) physical fitness assessment and state standardized math and reading scores, as measures of academic performance. Results indicated a positive relationship between aerobic fitness scores on math, \( r = .17, \ p < .001 \) and reading scores, \( r = .14, \ p < .001 \). Additionally BMI was found to be negatively associated with math \( r = -.03, \ p < .001 \) and reading \( r = -.09, \ p < .001 \) scores. The results suggest that aerobic fitness and BMI may impact academic results on standardized tests.

Key words: Aerobic power, body-mass index (BMI), cardiorespiratory performance
Rosales, Thelma

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The Process of Growing Small: Victorian Womanhood in Alice in Wonderland

Alice in Wonderland depicts the anxiety of a young girl who believes adulthood will provide freedom she cannot enjoy because of her strict Victorian upbringing. Through her journey, however, she realizes that women must fit into a particular role in society and that her choices are limited because of her gender. This concept is reinforced as the females in Wonderland prove to be powerless despite their outward grandeur, and males prove influential regardless of their apparent madness. Specific instances from the novel are examined to show the psychological journey Alice goes through, her rejection of Victorian gender roles, and her temporary escape from the norm.
Today’s industrial and commercial electricity consumers mainly rely on computerized equipment which is sensitive to power interruptions, disturbances and blackouts. Hence, power quality has become increasingly important and negligence in this area may produce unfortunate consequences. The power conversion process that affects the electrical current and voltage supplied to all systems (loads) is a complex, non-linear phenomenon. The aggregate result of these nonlinear processes is the presence of objectionable harmonic currents in the ac power system.

This research emphasizes that constant power monitoring and field measurements are the key factors in solving power quality problems. According to power quality standards such as IEEE 519, the most effective way to meet harmonic distortion limits is to measure the harmonics at each individual load and filter them at a convenient location on the power grid. The goal of applying specified harmonic limits is to prevent one customer from causing harmonic problems to another customer or utility. This research project uses an industry standard Power Quality Monitoring (PQM) device to determine the operating schedules of loads through their power signatures and any significant deviations from steady state. These observations are made at various campus buildings to check level and nature of harmonics at the point of measurement. The data obtained are stored in a database to facilitate generation of reports for review and analysis using software tools. The harmonic limits measured in the power system are verified against industry standards and specifications for power quality.

As the transient behaviour of a typical electrical load is strongly influenced by the physical task that the load performs, such monitoring practices might be helpful in future while observing a large scale power unit using the techniques of Non-intrusive load monitoring. These PQM techniques control harmonics present in the power system, thereby providing a solution for the growing harmonic emission resulting from highly nonlinear loads. An important set of measurements in this study includes the monitoring of the 'Solar Pump Charging Station' which uses solar power to provide electricity to various campus users.

Keywords: Power quality monitoring, Harmonics, IEEE 519, Smart grids
Saunders, Michael P.

Anthropology, Texas State University

The Sacred Geography of San José Ch’aq’ya: Long Term Continuity and Contemporary Change

Many Maya communities show evidence of long term religious continuity. In an effort to identify such continuity I recently mapped and determined the utilization of current ritual sites in the Maya community of San José Ch’aq’ya, Guatemala. I documented substantial links between pre-Columbian and contemporary sacred site layout, especially as concerns the importance of symbolically situating the community at the “center” of the cosmic order. Yet, while I identified such continuity, my research also indicates significant change in site utilization that appears linked to newly developing economic strategies in the community. Such rapid change is problematic to the idea of long term continuity. However, by symbolically centering the community in the cosmos, it appears ritual “re-creation” of the world allows religious practitioners to integrate new elements that address local conditions into existing belief systems. Thus it seems that the geographic patterning evident in the sacred landscape of Ch’aq’ya is not some “survival” of past Maya belief, but is an integral part of a dynamic and adapting belief system. Within such a framework of belief, change can occur allowing for the community to adapt to changing political, economic, social, and environmental circumstances while yet exhibiting the continuity that appears evident in indigenous Maya belief.
The Texas tortoise, Gopherus berlandieri, is a state threatened species occurring in south Texas. Dietary specifics are not known for this species and are needed for appropriate management and conservation. I collected 52 Texas tortoise fecal samples from 6 sites from across south Texas during the summers of 2007 and 2008. Vegetative analysis was performed at each site using the Daubenmire method to estimate percent cover of herbaceous plant species.

Fecal samples were examined microhistologically and vegetative matter was identified as grass, forb or cactus and to genus or species when possible by unique features of the leaf cuticles. I found over 100 species of plants at one study site which included 33% grasses, 28% forbs, and 1% cacti. Tortoise fecal matter from this site included 18% grasses, 36% forbs and 29% cacti.

Preliminary results suggest that tortoises consume forbs and cacti more than expected and grasses less than expected ($\chi^2 = 78.39, 8$ df, $p < 0.001$). This information is very valuable as invasive plant species are expanding across the south Texas brush country. Land management practices that provide forage that is selected for by the Texas tortoise should be considered.
There is sparse research on college students’ risk perceptions and health beliefs in response to outbreak illnesses (e.g., the “Swine Flu” outbreak that occurred over the 2009-2010 academic school year). This study involved a descriptive-comparative approach to assess differences in the cognitive risk perceptions for vaccine accepters and vaccine rejecters among a group of 166 students. Using backwards logistic regression with the dichotomous variable vaccine acceptance/rejection as the criterion (dependent) variable, we tested for differences in association between groups on the core constructs of the Health Belief Model (perceived severity of swine flu, perceived likelihood of contracting swine flu, perceived benefits of vaccination, and perceived barriers to becoming vaccinated). We also tested the expected interaction effects purported to occur through Subjective-Expected Utility theory in determining if interactions better explain the group membership when illness risk perceptions were combined into an overall perceived threat variable, and health beliefs about the vaccine’s safety and efficacy were combined into perceived vaccine risks. We expect to find that each of the Health Belief Model constructs are associated with vaccine acceptance, but their interaction will more accurately define the variable combinations that prove most useful in determining acceptance and rejection. In light of future public health efforts to increase vaccination uptake among student populations, this study can contribute to such efforts by identifying the areas which the general public and college students in particular can be better informed with regard to vaccine safety to better improve uptake rates and provide better protection to highly sensitive others in the student population.
Sheedy, Crystal

Anthropology, Texas State University – San Marcos

The Compromised Social Position of Maya Women in the Yucatan Peninsula

In the past, many ethnographers who conducted their fieldwork in the Yucatan Peninsula with Mayas indicated that more men than women traveled to work in larger cities. While the men were away, the women remained in their home communities and managed household affairs. This also allowed for the preservation of their cultural heritage. However, contemporary ethnographers, including myself, documented that with the stronger influence of tourism in the Yucatan Peninsula, more women are leaving their home communities to work in wage labor positions in the growing tourist epicenters. This change in lifestyle exposes the women to new ways of life, which some members of their home communities deem as disagreeable, because they feel that the women are abandoning their home communities and placing the village’s cultural heritage at risk. Although the women are gaining more financial independence by traveling to larger cities, they are also trying to adjust their new lifestyle to the desired roles for Maya women still upheld by several members of their home communities.
A continuing downward shift in the age of sexualization among adolescent females brings concern to parents, teachers, and administrators as the first decade of this century closes. The literature suggests that an increase in media exposure, as well as the nature of its content, influences the self-esteem of girls and their values concerning women. According to the APA Task Force on the Sexualization of Girls (2007), media exposure constrains a young woman’s concept of femininity, dangerously placing a woman’s appearance and physical attractiveness at the core of her value. The risks of early sexualization and low self-esteem abound, reaching further than teenage pregnancies and sexually transmitted diseases, possibly into the realm of associated deviant behaviors such as alcohol and drug usage, smoking, and cheating in school (See Whitbeck, Yoder, Hoyt, Conger, 1999). Fortunately, mediating factors may curtail these destructive situations from arising. Active and open parenting may be linked with a lower likelihood of adopting highly sexualized views of women (Coley, Medierios, & Schindler, 2008; Rew & Wong, 2006; Regnerus, 2005). Further research assessing these relationships raises critical awareness, the first step in protecting adolescents from objectifying forces within media and society in general.

The purpose of this presentation is to share information obtained from a study conducted on the relationship between adolescents’ self-esteem, as well as the valuing of women, and mediating variables such as perceived parental closeness. It was hypothesized that adolescents who reported closer relationships with parents would feel more comfortable talking about sexuality with their parents, and those who expressed closer relationships with parents and possessed higher self-esteem would place a higher emphasis on the internal versus external values of women.

300 adolescents, grades 9-12, were recruited as subjects via their high school psychology class. They were administered a 43 question survey, containing a shortened version of the Rosenberg Self-Esteem Scale, along with questions exploring their media use, perceived closeness with their parents, and religiosity. Pearson correlation coefficients were calculated to test hypotheses regarding the relationship between constructs measured by the survey, and a t-test was performed to compare gender means on the Rosenberg Self-Esteem Scale.

Participants will acquire valuable knowledge about the literature concerning the impact of sexualized images and narratives in the media on adolescents. Furthermore, mediating variables which influence a child’s adoption or rejection of such messages will be discussed. Participants will also learn strategies to aid both males and females in processing and choosing constructive responses to these messages.
Slone, Kailey

Communication Studies, Texas State University – San Marcos

A Call to Action or Complacency?: An Ideological Criticism of U.S. Message Films, Blood Diamond and The Last King of Scotland

_I dream of Africa..._ This simple statement evokes the notion that one is able to visualize Africa. The images of Africa that resonate in our consciousness are deeply rooted in popular media. The two films used for this analysis, Blood Diamond and the Last King of Scotland, bridge the relationship between African poverty portrayed in these films and the hegemonic visualization of the _feel good now -act later_ message unveiled in the present ideology. This analysis uses ideological criticism juxtaposed with myth to examine and expose the relationship between black African poverty and the dominant, hegemonic view of a symbolic call to action present in the films.
This study looked at how British Petroleum created specific messages for the American and British public high lightening different acts of agency following the Deepwater Horizon explosion and the Gulf of Mexico Spill. Based upon Bitzer’s work arguing that organizations create messages with specific audience in mind; this research used Burke’s Dramatist Pentad Method of critique to identify which characters were given agency and action within BP’s narratives. Data was collected from press releases and advertisements in popular US and UK newspapers from April 20\textsuperscript{th} 2010, to August 4\textsuperscript{th} 2010. Results showed BP identified and highlighted themselves as the major character of action when speaking to the American public, taking full responsibility for the spill, recovery efforts, and retribution funds. In contrast to British audiences they put more emphasis on other actors and the context having greater agency in the crisis and focused on reaffirming their long-term financial stability. This study furthers the work on crisis communication, specifically identifying the role the audience places in crafting messages aimed at reputation management.
Southern Appalachian Mountain wetlands support important ecological habitat and serve several hydrological functions. These wetlands are often located in remote, biogeographically isolated locations at high elevations within the Appalachians. We assessed one of the largest of these wetlands – the peatlands within the Cranberry Glades Botanical Area – for meadow-forest ecotone characteristics. The Cranberry Glades have been reported to be infilling with trees from the surrounding forest, but little research has been conducted on the patterns of tree growth within the moss-dominated communities. We analyzed tree establishment patterns in regard to select environmental characteristics by recording the growing conditions of 1389 trees located within 9, 10 x 100 m belt transects positioned across the ecotone of three peatlands. Our results indicated that tree growth within the ecotone occurred in decreasing density from the forest to the meadow interior, and much of the tree establishment occurred in tree islands. Significantly more trees were also found on hummocks than hollows, likely in response to the greater distance from the water table that the hummocks provide. Our results add to the minimal literature on southern peatlands and may assist in peatland restoration and conservation efforts.
Taylor, Alicia; Beall, Gary; Dharmasiri, Nihal; Zhang, Yixin; McLean, Robert

Biology, Texas State University – San Marcos

Carbon and Clay Nanoparticles Provoke Numerous Responses in *Salmonella Enterica Var. Typhimurium* and *Escherichia Coli*

Nanoparticles have become widely used and produced in the past twenty years, from cosmetics, to paints, clothing, electronics, and medical procedures. Nanoparticles are classified by having at least one dimension less than 100 nm. Due to their large surface area to volume ratio, nanoparticles may have unusual and unique properties not attributed to larger particles, often being more reactive. This study focuses on multiple *Escherichia coli* strains and *Salmonella enterica var. typhimurium* strains. Using the Ames test, three nanoparticles were examined in different concentrations to detect a mutagenicity effect. Multi-walled carbon nanotubes (MWCNT), halloysite nanotubes (HNT) and Cloisite® Na+ nanoparticles (Cloisite®) were tested and it was found that all three nanoparticles may exhibit a slight mutagenic effect. Further toxicity testing under light, no light, aerobic, and anaerobic treatments demonstrated that each nanoparticle displayed significant toxicity effects. The strongest toxic effects were expressed by the multi-walled carbon nanotube on *S. typhimurium* SGSC 1336 (*oxyR*) (*P* < 0.001). This study concludes that nanoparticles may not have a general toxic effect across all bacterial species, but exhibit species specific responses. In the case of *S. typhimurium*, the *oxyR* gene was crucial to surviving oxidative stresses caused by nanoparticles.
In 1991 Cigler and Neiwender published an article looking at Bureaucracy in the standard college level American Government textbook published in the 1980s. My research will update that article. By looking at 22 textbooks published since 2008 it will be possible to see if the coverage of bureaucracy has increased or decreased in the standard textbook in the past 20 years.

Each textbook in the current study will be reviewed using the same criteria Cigler and Neiwender used in 1991 when reviewing textbooks. The charts from the original article are reproduced with an additional column for current textbooks. In addition, a final chart is added which includes items Cigler and Neiwender did not cover but which are important today, for example internet resources. This allows for comparison between the original article research and the current research based on the same criteria, while at the same time looking at items that may not have been important to the original article but have since gained importance.

It is expected that the current coverage will be increased. During the last 20 years at least two major events, Hurricane Katrina and September 11, have occurred making bureaucracy more visible to the average American. In addition, the original article was published at the end of the Reagan years. Reagan was a proponent of “bureaucracy bashing” and tried to minimize bureaucracy as much as possible. This “feeling from above” may very well have worked its way into standard textbooks. Political leaders of today are less likely to spend time on negative perceptions of bureaucracy and on minimizing bureaucracy.
This research paper examines the impact of what possible new DNA evidence may have on a convicted felon’s underlying conviction. By examining this facts of a convicted felon’s case, I briefly delineate how a federal court may discuss the elements of 42 U.S.C § 1983, and apply those elements to the convicted felon’s case. In comparison, the elements include (1) whether the deprivation of any specific rights, privileges, or immunities, and (2) whether the deprivation of rights was committed under the color of state law. The scope 42 U.S.C §1983 is that every person who, under color of any statute, ordinance, regulation, custom, or usage, of any State or Territory or the District of Columbia, subjects, or causes to be subjected, any citizen of the United States or other person within the jurisdiction thereof to the deprivation of any rights, privileges, or immunities secured by the Constitution and laws, shall be liable to the party injured in an action at law, suit in equity, or other proper proceeding for redress, except that in any action brought against a judicial officer for an act or omission taken in such officer’s judicial capacity, injunctive relief shall not be granted unless a declaratory decree was violated or declaratory relief was unavailable. Likewise, various sources have been collected from the online legal source Westlaw, various books, federal court documents, federal cases, 42 U.S.C § 1983, and related archives or periodicals.

In contrast, the research challenges why the previously collected DNA evidence, which was improperly collected, was not raised during trial court. Also, the challenge of whether the actions of government officials affected the outcome the felon’s conviction. If substantial evidence is shown that the outcome would have been different had the issue of improperly collected evidence been raised during trial, then there is a possibility a convicted prisoner may have his conviction overturned. By propelling the facts of the case, it is more likely than not the felon probably may not prevail on a claim under 42 U.S.C § 1983.
Vélez, Lucy Guevara

Curriculum and Instruction, The University of Texas at Austin

CARE for Student Retention in GED Classes: Preparing the “Double Dropout”

Academic work has documented the benefits of General Educational Development (GED) programs (Brouillette, 1999; Golden et al., 2005; Ou, 2008). Such benefits can have both an educational and personal impact on students. The benefits gained by enrolling in GED programs can include counseling, relationships with other students and instructors, higher levels of satisfaction and optimism, as well as more confidence. GED programs provide an opportunity to start over, and leave the “dropout” label behind. Scholars have further found that not only does the GED credential translate into a long-term increase in hourly wages, but GED completers are also more likely to participate in vocational training programs, pursue a college degree, and seek better employment opportunities.

On the other hand, practitioners have also presented potential shortfalls. Pieces written by GED instructors (Dill, 1997; Siegel, 2007) have expressed the lack of authentic materials and ideas in GED classes and urged a need to evaluate conventional teaching methods in adult basic education programs.

This paper will synthesize the tenets of the concepts of ethic of care, authentic care, and critical care (Noddings, 1984, 1992, 2002; Valenzuela, 1999; Rolón-Dow, 2005; De Jesús & Antrop-González, 2006) and show how these can be used in a GED classroom in an effort to promote student retention and prevent the “double-dropout”. The data used for this paper was gathered during a small qualitative study conducted in two GED classrooms in Central Texas in 2009 as well as my own reflections as a GED instructor (2004-2009).
Effective conservation requires knowledge of habitat associations across a species’ geographic range. In particular, knowledge of breeding habitat affinities at the periphery of a species’ range is important for understanding species limits given the potential for range contraction/expansion in light of predicted climate change. We estimated occupancy of the Black-and-white Warbler, *Mniotilta varia*, at six sites located in the southwestern extreme of the species’ range. Occupancy was measured as the probability that the species is resident at a survey station or study site. Mean occupancy within sites was 0.49 agreeing with other studies indicating that Black-and-white Warbler is a relatively uncommon and sparsely distributed resident in the study areas. Canopy cover (mixture of deciduous and evergreen tree species) and slope were important predictors of occupancy. Predicted occupancy was > 0.5 for survey stations that had over 80% canopy cover and 10 degrees of slope indicating that breeding habitat of Black-and-white Warbler within the southwestern edge of the species’ range falls within a restricted set of habitat conditions. A comparison of the occupancy and habitat affinities of Black-and-white Warbler to that of the co-occurring endemic Golden-cheeked Warbler, *Dendroica chrysoparia*, showed marked differences in both local occupancy and breeding site selection between the two species. The comparatively restricted range of habitats occupied by the Black-and-white Warbler illustrates important conservation concerns and suggest the potential for northward range expansion.
The properties of a crystal are characterized by a set of Bloch wavefunctions that are symmetric under discrete translations and point group operations. When an alloy is formed from a random mixture of two crystals, the new structure loses those symmetries and develops non-trivial electronic properties. Conventional methods used for random alloys, e.g., Virtual Crystal Approximation and Coherent Potential Approximation, assume a medium of crystalline structure that pertains the same symmetries of the parent compounds. Our goal is to study the evolution of the electronic properties of the random alloys as they undergo a transition from one pure crystal to another via a direct simulation of randomly distributed atom structures. As a specific example, we study Al$_x$Ga$_{1-x}$As using the effective-bond-orbital model. Even though GaAs and AlAs are closely lattice matched zinc-blende crystals, they each have a very distinct band structure; GaAs is a direct band gap semiconductor while AlAs is an indirect band gap semiconductor. We present the direct-to-indirect band gap crossing of these alloys and a measure that can be used to probe the “Blochness” of the wavefunctions.
The rebound in bald eagle (*Haliaeetus leucocephalus*) abundance over the last several decades is a rare example of species recovery leading to delisting under the Endangered Species Act (ESA). After European colonization of North America, bald eagle numbers were dramatically reduced by a variety of anthropogenic factors, but following protection under the ESA and the banning of dichloro-diphenyl-trichloroethane (DDT), they made a strong recovery and were delisted in June of 2007. Bald eagles have historically nested in areas remote from human activity. However, as bald eagle populations have increased, so have human populations, especially near waterways. This has led to an increase in nesting territories located near development and human disturbance. I explored the potential effects of human disturbance and habitat alteration on bald eagle nesting success in South Carolina. Historical productivity data from 31 nesting seasons were compared to levels of development documented at nesting sites. Factors examined included the distance from a nest site to the nearest road or structure and the intensity, proximity, and duration of various human disturbances resulting from residential, transportation, industrial, and recreational activities. Developed and rural sites were not significantly different in terms of either mean chick productivity or the percentage of nests that successfully reproduced. Additionally, within developed sites, no specific type of disturbance or development appeared to be a good predictor of nesting success or productivity.
Williams, Desareé
Anthropology, Texas State University – San Marcos
Where I Stand: Changing Perceptions of Race and Discrimination

America has undergone many historical changes in its social composition since its independence. One of the most recognized changes is in race relations between black and white Americans. The objective of my study was to research how one’s era of socialization affects the conceptualization of race and discrimination. I hypothesized that individuals who were socialized before the Civil Rights Era (1950s – 1960s) would exhibit a higher degree of discriminatory behaviors in comparison to individuals who were socialized during or after this era. Research was conducted at two sites: a church and a nursing and rehabilitation facility. The study participants were age 40 and older. Data was collected using recorded interviews, participant-observation, free lists, and a focus group. I analyzed the participants’ understanding of discrimination, race, and their experiences with the manifestation of these concepts. This data was compiled in data matrices to compare the results across period of socialization (PoS), sex, and ethnic background. The results indicate that the PoS was not necessarily reflected in individuals’ perception of race or in their interactions with others. Regardless of ethnic background and PoS, most of the participants recognized social and ethnic diversity, demonstrated acceptance of others who were ethnically different, and did not exhibit discriminatory behaviors towards others.
Williams, Justin W.  

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A March for War? A Content Analysis of Fox News and NPR from September 17, 2001 through March 17, 2003

Since World War II the news media have expanded extensively and have become dependent on corporate and government financial support which in return rely heavily on the television; (Ryan 1991). Concurrently, U.S. society has become increasingly media-driven (Ryan 1991). According to the works of Kubey and Csikszentmihalyi (1990), television sets in U.S. households are turned on for an average of seven hours each day. Even by conservative estimates, individual Americans spend about two and a half hours a day—almost half of their available waking leisure time—watching television. Over the course of a year, two and a half hours a day adds up to more than 38 solid days of television viewing (Croteau and Hoynes, 2000: 4, 5). Media serve as significant conduits of adult education. Perhaps one of the most telling contemporary researches done which illustrates the power of media is that of Steven Kull and the PIPA/Knowledge Networks Poll. In 2003, Program on International Policy Attitudes (PIPA) in conjunction with Knowledge Networks (KN) conducted a Poll to survey Americans attitudes toward the war in Iraq. The research found significant correlations between misperceptions and the source of news media however it did not offer any content of the news that could have led to these views.

This paper specifically analyzed content produced from FOX News’ Special Report with Britt Hume and NPR’s All Things Considered, aired at 6pm on Mondays; this time was selected as a representative of primetime news broadcasting. This paper analyzed the prevalence of mobilizing frames based on the misperceptions found within the above survey. A content analysis of the primetime news segments was conducted to determine whether or not there was a direct correlation between the rates of mobilizing frames. It also analyzed the date any mobilizing frames were aired in relationship to its proximity to the initial bombing campaign in Iraq. This research also analyzed the rate of mobilizing frames referenced to its time and asked if the rate of mobilizing frames increased as the initial bombing date approached. Once the content analyses were completed, t-tests and Pearson correlation coefficients were computed and analyzed to determine any differences in the prevalence of mis-educating information within the mobilizing frames and whether or not there was a correlation to the number of mobilizing frames and the date in which they occurred.

The research revealed a direct correlation between the content of the mobilizing frames and the misperceptions found in the PIPA/KN Poll (2003). The research also determined that the rate of mobilizing frames increased as the United States neared its initial bombing campaign of Iraq. The researched found the rate of mobilizing frames differed between the news sources. It also found the rate of misperceptions within the mobilizing frames differed from the source of the framing. This research is consistent with the findings of the PIPA/KN Poll (2003).
This study was designed to investigate the cognitive level of development and mathematical fluency of first grade children. The hypotheses posed were to discern whether a significant difference existed between conserving and nonconserving children when assessed separately in addition fluency and subtraction fluency. A total of \( N=100 \) children 6 and 7-year-olds from two low-socio-economic elementary schools participated in this study. The male and female children included 63% Hispanic, 34% Caucasian, 2% Asian or Pacific Islander, and 1% African American. Jean Piaget’s conservation-of-water experiment was administered to children to determine their cognitive level of development as conserving or nonconserving. A balanced between-subjects research design included a randomized sample of \( n=50 \) nonconserving and \( n=50 \) conserving children. Using a counterbalanced method, two single-skill Math Fact Probe instruments were administered separately for two-minutes to measure addition fluency and subtraction fluency. The raw scores were analyzed using a MANOVA. The results of this study indicated that conserving children in first grade had significantly greater, at the .05 alpha level, addition fluency and subtraction fluency than nonconserving children in first grade. Post-hoc analyses investigated covariates: gender, race, and age. Gender and race had no statistically significant effect on mathematical fluency. Age and cognitive level of development were two separate factors that related to mathematical fluency. However, cognitive level of development was not a proxy for age. Age had an additional effect on mathematical fluency above and beyond cognitive level of development. The implications of this study indicated that cognitive level of development is not a grade level designation. Children in first grade were conserving and nonconserving. These invariant levels were characterized by different abilities in mathematical fluency. Educators’ pedagogical techniques and the design of curriculum should reflect these differences. Developmentally appropriate teaching practices should be used in the classroom to increase mathematics achievement for first grade children.

**Keywords:** Child Development, Cognitive Ability, Cognitive Development, Developmental Stages, Elementary Education, Elementary School Mathematics, Grade 1, Mathematics Achievement, Mathematics Education, Mathematics Skills, Piagetian Theory, Skill Development
Zere, Tesfalem R.; Chu, Weihua; Weber, Mary; Wood, Thomas; Whiteley, Marvin; McLean, Robert
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Role of Secondary Signaling Pathways (cAMP & c-di-GMP) as a Mechanism by which Escherchia coli Can Coexist with Pseudomonas aeruginosa

In their natural environments, bacteria typically are found as mixed species communities, and are often attached to some type of surface as biofilms. There has been considerable interest in studying bacterial biofilms. However, much less is known about the mechanisms that enable bacteria to grow as mixed populations in biofilms or planktonic communities. Recent studies showed that purine biosynthesis genes in Eschercia coli are consistently upregulated during co-culture with Pseudomonas aeruginosa, an organism that E.coli coexists with in the intestinal tract and aquatic environments. Aside from their function as nucleic acid components, purines are involved in energy transfer reactions in central metabolism (ATP & GTP) and are components of the secondary cell signaling molecules: cyclic AMP (cAMP) and bis - (3'- 5')-cyclic di-GMP (c-di-GMP). In this study, the role of cAMP and c-di-GMP as a mechanism enabling E. coli to coexist with Pseudomonas aeruginosa is investigated. This is done both by genetic and culture-based screens using four strains of Eschercia coli and Pseudomonas aeruginosa wild type strain (PAO1). The four strains of E.coli used in this study include BW25113 (wild type), and deletion mutants in crp (which lacks the cAMP receptor protein), cyaA (which lacks the adenylate cyclase enzyme) and cpd (lacks the enzyme to degrade the cAMP). The results showed that the crp and cyaA mutant strains showed a significant reduction in their ecological fitness in mixed culture growth with PAO1 while the cpd mutant strain was as competitive as the wild type. One of the mechanisms for the loss of the ecological fitness of the crp and the cyaA mutant strains of E.coli is shown to be indole production. The crp mutant strain does not produce indole and the cyaA mutant strain produces very low concentration of indole in the first 24hr (as compared to the wild type and to the cpd mutant strain). Chemical complementation of the strains (crp and cyaA) with indole restored the wild type phenotype, making them more competitive.