THE MCNAIR SCHOLARS JOURNAL

OF THE

UNIVERSITY OF CALIFORNIA, DAVIS

University of California, Davis
Volume X • 2012

UC Davis McNair Scholars Program Staff

Principal Investigator
Jeffery C. Gibeling, Ph.D. Dean of Graduate Studies

Director
Siria Martinez

Program Assistant
Rachel Messer

Graduate Student Advisers
Michael Graziano
Jean-Yves Merilus
Julie Setele

Journal Editors
Michael Graziano and Natalie Strobach

Please address inquiries to:
McNair Scholars Program
University of California, Davis
Davis, CA 95616
(530) 752-7486
mcnair@ucdavis.edu

ii

Message from the Faculty Director of the McNair Program

It is my pleasure to present Volume X of the McNair Scholars Journal of the University of California, Davis. The McNair Scholars Program is named after Dr. Ronald E. McNair, the African-American physicist and astronaut who died in the 1986 Challenger space shuttle accident. As a memorial to Dr. McNair, the United States Congress established funding for this program in his name as a means to provide opportunities and encouragement to underrepresented and low-income undergraduate students who might otherwise not consider graduate study as an option. Funding for this program is provided through a grant from the U.S. Department of Education to assist students in attaining an advanced academic degree and a chance to succeed as exemplified by achievements of Dr. McNair. A significant component of the McNair Scholars Program at UC Davis is an individual, mentored research experience for each scholar. The research articles presented in the Journal are the culmination of a year's study and research conducted by the undergraduate students of the McNair Scholars Program. In addition to these papers, many of the scholars have presented their work at conferences and symposia throughout the country. We are justifiably proud of each of the McNair scholars whose research is presented in this journal. You will find that the papers cover a broad range of academic topics that the scholars have pursued using methodologies appropriate to their fields of study. However, the papers share a common theme in the way they exemplify the hard work, creativity and dedication that McNair scholars bring to the pursuit of their goals.

Jeffery C. Gibeling
Dean – Graduate Studies
University of California, Davis

Contents

Translocation pathway of *Brucella* Type IV Secretion Effectors

Helen Chan

Abstract

Brucellosis is a zoonotic disease caused by organisms of the genus *Brucella* that affects ruminants, causing abortions, genital infection, and persistent bacteremia. It is highly contagious and can be transmitted to humans who have close contact with animal secretions. In North America, brucellosis is primarily an occupational hazard, whereas in endemic regions such as South America, the disease is usually contracted by ingestion of unpasteurized dairy products. The pathogenicity of *Brucella* requires VirB, a type IV secretion system (T4SS) that allows the organism to survive intracellularly in eukaryotic host cells by injecting effector molecules to establish a replication niche. The first phase of the current research identified three effector proteins, VceA, VceB and VceC, which were translocated into macrophages by the *Brucella* type IV secretion system. It is now the goal of this project to elucidate the pathway that these effectors use to cross the inner and outer membranes of *Brucella* and enter the target host cell. A current model describing the translocation pathway through the T4SS of other bacteria suggests that secretion substrates are recruited by the T4 coupling proteins (T4CP) and transferred to the T4SS channel. Since *Brucella* lacks any proteins homologous to T4CP, it most likely delivers its effectors to the T4SS via a different pathway. VceA and VceB are predicted to contain a Sec secretion signal, which suggests that they are translocated into the periplasmic space prior to recruitment by the T4SS. Experiments will be performed to determine whether VceA, VceB or VceC are delivered to the periplasmic space by creating protein fusions to PhoA, which only expresses activity when present in the periplasm. If the fusion proteins are active, it will be concluded that the corresponding protein is transported to the periplasm as an intermediate step toward injection to the host cell cytosol.

Introduction

Brucellosis is a worldwide zoonotic disease that is caused by three main agents, *Brucella abortus, Brucella melitensis,* and *Brucella suis. Brucella abortus* primarily infect cattle and other ruminants and it is transmissible to humans via ingestion, inhalation, or through abrasions in the skin. *Brucella* species can evade host defenses in ruminants by targeting embryonic and trophoblastic tissue, which results in genital infections and abortions. In humans, brucellosis can manifest in the acute form with symptoms of undulant fever, headache, myalgia, and back pain and it can manifest in the chronic form with infections of the joints and muscles. In North America, brucellosis is primarily contracted by people who work closely with infected animals and have contact with bodily secretions. In other endemic regions and underdeveloped countries, brucellosis is primarily contracted by ingestion of unpasteurized milk and soft cheeses from infected animals. *Brucella* are Gram-negative bacteria that are able to survive intracellularly in macrophages by evading phago-lysosomal fusion. *Brucella* is a facultative intracellular pathogen that requires the type IV secretion system called virB, which is controlled by the virB operon to establish a hospitable replication environment within the eukaryotic macrophage cells. The T4SS translocates effector proteins into the eukaryotic host cell, which alters host cellular processes and facilitates bacterial replication. Upon phagocytosis by macrophage cells, the

Brucella vacuole diverts to an alternate route and escapes the endocytic pathway (Celli, 2003). Within the vacuole, the *Brucella* virB operon gene expression is induced by phagosome acidification (Boschiroli, 2001). The evasion of the endocytic pathway is possible due to the T4SS injection of virulence effector proteins into the host cytosol. Additionally, the secretion of effector proteins aids the recruitment of endoplasmic reticulum (ER) derived vesicles where *Brucella* can survive in a replication niche.

The type IV secretion systems are bacterial translocation machines that have the ability to translocate DNA and protein substrates across the bacterial membrane. The type IV secretion system is homologous to the conjugation system found in *Agrobacterium tumefaciens*, the prototype T4SS is called the VirB system. Conjugation systems are responsible for the dissemination of antibiotic resistance genes (Schroder et. al.) *Agrobacterium tumefaciens* relies on the VirB system to infect plant roots. There are three possible T4SS translocation routes that have been deduced thus far. The "channel model" uses Coupling Proteins (CP) to recruit substrates to a Mating pair factor (Mpf) channel. The substrates would either make contact with the channel at the inner membrane of the bacteria or in the periplasm of the bacteria. Previously, three *Brucella* virulence effector proteins identified as VceA, VceB and VceC were found to be translocated by the T4SS and conserved in all *Brucella* genomes (de Jong, 2008). However, *Brucella* does not utilize the CP that is common to the T4SS. Therefore, we hypothesize that the identified effectors gain access to the channel through an alternate route.

In a separate study, *Agrobacterium tumefaciens* virulence protein VirJ facilitated translocation of virulence effectors in a two-step process. The protein VirJ is found in the periplasm and is involved in translocating substrates from the periplasm to the host cytosol (Pantoja, 2002). Former models of the T4SS suggested that translocation was a one-step process where substrates were translocated from the cytoplasm of the inner membrane of the bacteria to the cytoplasm of the host cell. However, the study by Pantoja reveals that the type IV secretion process is not restricted to the previous suggested one-step model. Substrates that were translocated to the periplasm were found to form a soluble complex with VirJ. The VirJ complex was then found to associate with VirD4 and VirB, which are transporter components specific to periplasmic type IV translocation. In addition, the study reveals that *Bordetella* another T4SS-dependent bacteria, translocates its effectors first, by a sec-like pathway, then through the secretion channel. Since VceA and VceB are predicted to contain an N-terminal sec secretion signal, we hypothesize that these two effector proteins will be translocated in a two-step process. On the other hand, we do not predict VceC to contain a sec secretion signal. Therefore, we hypothesize that VceC will be translocated through the T4SS in a one-step process. In order to examine periplasmic translocation or lack thereof, we created fusion proteins of PhoA with a FLAG-TEM1 β-lactamase reporter assay. PhoA is an alkaline phosphatase enzyme that is only active in the periplasm. Separate fusion proteins containing PhoA and N-terminal sequences of VceA, VceB, or VceC, will help us determine whether or not the translocation is dependent on a sec-like pathway.

Materials and Methods
Fusion of PhoA to pFlagTEM
PCR was performed for PhoA. The annealing temperature that was used was 57°C with two minutes extension time. Gel electrophoresis was performed on the PhoA PCR product and 1% agarose gel was used. The PhoA PCR product was purified with QIAprep Spin Miniprep Kit. Next,

6

transformation was performed on the PhoA PCR product. PhoA PCR product was cloned into PCR 2.1 cloning vector and *E. coli* TOP 10 competent cells and streaked on LB plate with kanomycin, X-gal, and incubated overnight at 37°C for β-lactamase assay. Blue colonies indicate that transformation was not successful and white colonies indicate that transformation was successful. Selected white colonies from β-lactamase assay with X-gal plate and grew overnight cultures at 37°C. PhoA in PCR 2.1 plasmid was purified with QIAprep Spin Miniprep Kit. Digestion was performed with restriction enzymes SmaI and XbaI. For restriction enzyme SmaI, digestion was incubated at 25°C for one hour and for restriction enzyme XbaI, digestion was incubated at 37°C for one hour.

Previously constructed TOP 10 + pFlagTEM and TOP 10 + pFlagTEM + VceB fusion plasmids were cultured overnight at 37°C in 8 ml of LB broth with 8 µl of chloramphenicol. Digestion was performed on TOP 10 + pFlagTEM and TOP 10 + pFlagTEM + VceB plasmids using restriction enzymes SmaI and XbaI. Next, T4 ligation was performed to ligate TOP 10 + pFlagTEM and TOP 10 + pFlagTEM + VceB with PhoA. Initially, the ligation was unsuccessful. A new culture of TOP 10 + pFlagTEM and TOP 10 + pFlagTEM + VceB was grown overnight and purified with QIA Filter MIDI. Next, digestion was performed on TOP 10 + pFlagTEM and TOP 10 + pFlagTEM + VceB with restriction enzymes SmaI and XbaI.

T4 ligation was performed with PhoA insert that was digested with XbaI and SmaI with TOP 10 + pFlagTEM and TOP 10 + pFlagTEM + VceB that was also digested with XbaI and SmaI. Additional T4 ligation control was performed using TOP 10 + pFlagTEM and H20 as the insert. Several resulting ligated colonies were selected to undergo colony PCR and digestion with XbaI and SmaI to verify that the insert was present. Plasmids were purified with QIAprep Spin Miniprep Kit. Transformation was performed using TOP 10 + pFlagTEM + PhoA and TOP 10 + pFlagTEM + VceB + PhoA in BL21 competent cells for protein expression. Cultures of TOP 10 + pFlagTEM + PhoA and TOP 10 + pFlagTEM + VceB + PhoA in BL21 cells were grown at 37°C overnight. After 24 hours, the cultures were diluted 1:10 for protein expression at 37°C for two hours. A 12% SDS-PAGE gel was performed followed by a Western blot with Anti-Flag antibody.

Fusion of N-terminal sequences to pFlagTEM + PhoA

PCR was performed to obtain N-terminal sequences for VceA, VceC, VirJ, and MalE. For VceA, VirJ, and MalE the annealing temperature was 54°C with one minute extension time and for VceC the annealing temperature was 57°C with two minute extension time. Purified PCR products with QIAprep Spin Miniprep Kit. Performed transformation on PCR products with PCR 2.1 cloning vector and *E. coli* TOP 10 competent cells and streaked on LB plate with kanomycin, X-gal, and incubated overnight at 37°C for β-lactamase assay. Selected white colonies from the plates and purified for VceA + PCR 2.1, VceC + PCR 2.1, VirJ + PCR 2.1, and MalE + PCR 2.1 plasmids with QIAprep Spin Miniprep Kit. Digestion was performed on PCR2.1 plasmids with restriction enzymes NdeI and XhoI. TOP 10 + pFlagTEM + PhoA was also digested with NdeI and XhoI. Performed T4 ligation using TOP 10 + pFlagTEM + PhoA digested with NdeI and XhoI and PCR 2.1 containing N-terminal sequences of VceA, VceC, VirJ, and MalE that were also digested with NdeI and XhoI. Several resulting ligated colonies were selected to undergo colony PCR and digestion with NdeI and XhoI to verify that the insert was present. Plasmids were purified with QIAprep Spin Miniprep Kit.
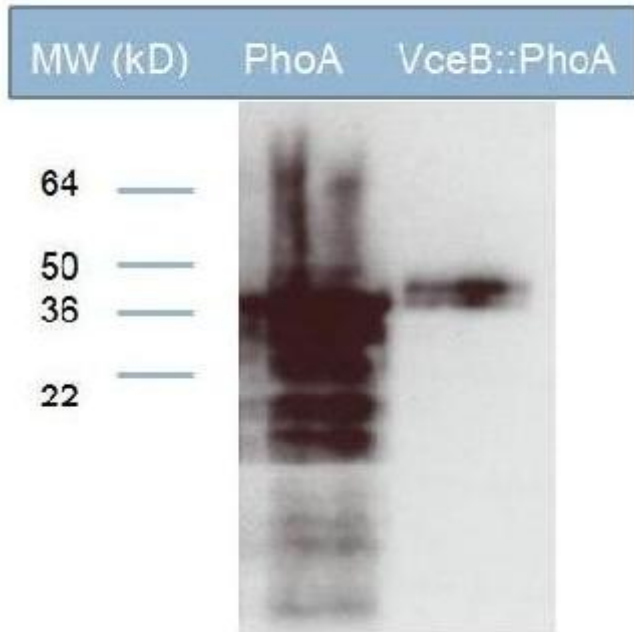
Figure 1: VceB::PhoA Fusion Protein

Figure 1: Western blot of PhoA protein and VceB::PhoA fusion protein. Proteins were detected using anti-FLAG antiserum.
Figure 2: Western blot of sodium azide assay for VceB::PhoA fusion protein with and without the addition of sodium azide. Proteins were detected using anti-FLAG antiserum.

that are capable of exporting mature PhoA into periplasm will turn blue while the colonies that are incapable of translocating mature PhoA will remain white.

Sodium Azide Assay

Two 5ml cultures of TOP 10 + pFlagTEM + PhoA + VceB in BL21 will be grown overnight at 37°C. To both cultures, chloramphenicol, glucose, and IPTG will be added to induce protein expression. To only one culture, sodium azide will be added to inhibit the Sec machinery. After, perform an SDS-PAGE gel followed by a Western blot. If the exported protein is translocated via a Sec-dependent pathway, sodium azide will inhibit cleavage of the Sec sequence and there will only be one band present on the Western blot. If the exported protein is dependent on the Sec pathway and sodium azide has not been added to the culture, there will be two bands present on the Western blot, indicating that the Sec sequence has been cleaved.

Transformation was performed using TOP 10 + pFlatTEM + PhoA and TOP 10 + pFlagTEM + VceB + PhoA in BL21 competent cells for protein expression. Next, cultures of TOP 10 + pFlagTEM + PhoA and TOP 10 + pFlagTEM + VceB + PhoA in BL21 cells were grown at 37°C overnight. After 24 hours, the cultures were diluted 1:10 for protein expression at 37°C for two hours. A 12% SDS-PAGE gel was performed followed by a Western blot with Anti-Flag antibody.

BCIP Assay

5-bromo-4-chloro-3-indolyl phosphate (BCIP) assay will be performed by streaking out TOP 10 + pFlagTEM + PhoA and TOP 10 + pFlagTEM + VceB + PhoA on an LB plate containing BCIP and chloramphenicol. The bacterial colonies

Figure 2: Sodium Azide Assay

(-) Na-Azide   (+) Na-Azide
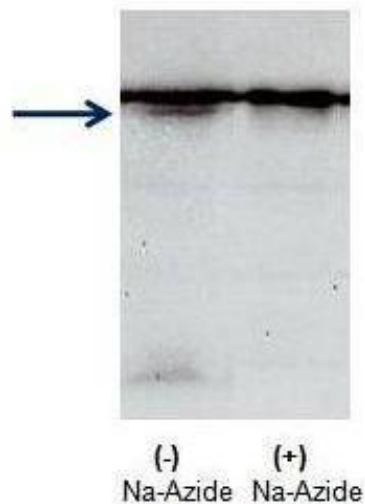
Results

VceB::PhoA Fusion Protein

Figure 1 shows the Western blot of both the VceB::PhoA fusion protein and PhoA with no secretion signal which were expressed in *E. coli*. The first lane of the Western blot represents the PhoA protein with no secretion signal and it showed a breakdown of the protein. In contrast, the second lane of the Western blot of the VceB::PhoA fusion protein showed two distinct bands.

Sodium Azide Assay

Figure 2 illustrates the results of the sodium azide assay. The first lane represents the 5 ml culture of TOP 10 + pFlagTEM + PhoA + VceB in BL21 without the addition of sodium azide, the protein was cleaved and two bands were present on the Western blot. The second lane represents the 5 ml culture of TOP 10 + pFlagTEM + PhoA + VceB in BL21 with the addition of sodium azide, the protein was not cleaved and only one band was present on the Western blot.

Discussion

VceB::PhoA Fusion

The PhoA protein requires periplasmic translocation because the PhoA folding enzymes are located in the periplasm. Thus, the PhoA protein needs to be properly folded in the periplasm before it is active. The PhoA protein with no secretion signal showed a breakdown of protein because the protein most likely never translocated to the periplasm. In contrast, the VceB::PhoA fusion protein showed two distinct bands on the Western blot suggesting that the fusion protein contained a sec-like signal which resulted in translocation of the PhoA protein. Additionally, the VceB::PhoA fusion protein was able to undergo proper folding which resulted in stable enzyme activity.

Sodium Azide Assay

Since sodium azide inhibits the Sec complex activity, it could be inferred that a protein that was translocated via the Sec-dependent route would be affected by the addition of sodium azide to the culture. Having two bands present on the Western blot without the addition of sodium azide suggests that a Sec sequence has been cleaved.

References

1. Hoover, D. L., Friedlander, A. M. "Brucellosis." *Medical Aspects of Chemical and Biological Warfare.* 25 (1997): 513-521
2. Pappas, G., Papadimitriou, P., Akritidis, N., Christou, L., Tsianos, E. V. "The new global map of human brucellosis." *The Lancet infectious diseases* 6.2 (2006): 91-99
3. Kulakov Y.K., Guigue-Tale, P.G., Ramuz, M.R., O' Callaghan, D. "Response of *Brucella suis* 1330 and *B. canis* RM6/66 to growth at acid pH and induction of an adaptive acid tolerance response." *Research in microbiology.* 148.2 (1997): 145-151
4. O'Callaghan, D., Cazevieille, C., Allardet-Servent, A., Boschiroli, M. L., Bourg, G., Foulongne, V., Frutos, P., Kulakov, Y., Ramuz, M. "A homologue of the *Agrobacterium tumefaciens* VirB and *Bordetella pertussis* Ptl type IV secretion systems is essential for intracellular survival of *Brucella suis*." *Molecular Microbiology.* 33.6 (1999): 1210-1220
5. Hong, C. P., Tsolis, R. M., Ficht, T. A. "Identification of Genes Required for Chronic Persistence of Brucella abortus in Mice." *Infection and Immunity.* 68.7 (2000): 4102-4107
6. Arenas, G. N., Staskevich, A.S., Aballay, A. et al. "Intracellular Trafficking of *Brucella* abortus in J774 Macrophages." *Infection and Immunity.* 68.7 (2000): 4255-4263
7. Boschiroli, M. L., Ouahrani-Bettache, S., Foulongne, V., Michaux-Charachon, S., Bourg, G., Allardet-Servent, A., Cazevielle, C., Liautard, J. P., Ramuz, M., O'Callaghan, D. "The

Brucells suis virB operon is induced intracellularly in macrophages." *PNAS.* 99.3 (2002): 1544-1549

8. Pantoja, M., Chen, L., Chen, Y., Nester, E.W. *"Agrobacterium* type IV secretion is a two-step process in which export substrates associate with the virulence protein VirJ in the periplasm." *Molecular Microbiology.* 45.5 (2002): 1325-1335

9. Cascales, E., Christie, P. J. "The Versatile Bacterial Type IV Secretion Systems." *Nature Reviews: Microbiology.* 1 (2003): 137-149

10. Schroder, G., Dehio, C. "Virulence-associated type IV secretion systems of *Bartonella." TRENDS in Microbiology.* 13.7 (2005): 336-342

11. Schulein, R., Guye, P., Rhomberg, T.A., Schmid, M., Schroder, G., Vergunst, A.C., Carena, I., Dehio, C. "A bipartite signal mediates the transfer of type IV secretion substrates of *Bartonella henselae* into human cells." *PNAS.* 102.3 (2005): 856-861

12. Christie, P.J., Atmakuri, K., Krishnamoorthy, V., Jakubowski, S., Cascales, E. "Biogenesis, Architecture, and Function of Bacterial Type IV Secretion Systems." *The Annual Review of Microbiology.* 59 (2005): 451-484

13. de Jong, M.F., Sun, Y.H., den Hartigh, A.B., van Dijl, J.M., Tsolis, R.M. "Identification of VceA and VceC, two members of the VjbR regulon that are translocated into macrophages by the *Brucella* type IV secretion system." *Molecular Microbiology.* 70.6 (2008): 1378-1396

14. Alvarez-Martinez, C.E., Christie, P.J. "Biological Diversity of Prokaryotic Type IV Secretion Systems." *Microbiology and Molecular Biology Reviews.* 73.4 (2009): 775-808

15. Pizzaro-Cerda, J., Moreno, E., Sanguedolce, V., Mege, J., Gorvel, J. "Virulent *Brucella abortus* Prevents Lysosome Fusion and Is Distributed within Autophagosome-Like Compartmetns." *Infection and Immunity.* 66.5 (1998): 2387-2392

Optimizing Energy Density of a Torpedo Launch Through Computational Fluid Dynamics

Tsz Fung

Department of Mechanical Engineering
University of California, Davis

Abstract

Energy density is the amount of useful energy per unit volume. Researchers throughout the past year have improved energy density for various vehicles, including cars and ships. Not many experiments have been conducted regarding the energy density of a torpedo during launching. Simulation is modeled by CFD (Computational Fluid Dynamics) program OpenFOAM, open-sourced CFD software. It is used to perform flow-field numerical simulation of underwater torpedo launching based on the Reynolds averaged Navier Stokes equations. The finite element method is used to analyze the relation between the launch tube and the torpedo. Moving-mesh method is used to solve for the motion of the torpedo relative to the tube. The boundary element method is used to solve linear partial differential equations using given boundary conditions to fit boundary values into the integral equation. It is expected that the energy density can be optimized simultaneously by varying the geometry of the torpedo head and the amount of power supply in the launching process when the torpedo reaches the terminal velocity in the launch tube before propelling.

Introduction

"Computational" means mathematical models with computer computation; "fluid dynamics" means the dynamics of things that flow, namely liquids and gases. CFD enables researchers to study the dynamics and phenomenon about specific behavior of certain fluids with parameters such as boundary conditions of the flow, for instance, elbow bended tube, and associated factors such as viscosity, temperature and pressure. Using CFD allows users to build a computational model that represents a system or device specifically for the particular study, then basic principles of flow from physics and chemistry is applied to this virtual prototype; the software will run a stimulation predicting an outcome of the fluid dynamics and related physical phenomena. Therefore, CFD is a sophisticated computationally- based design and analysis technique. It provides its users insight, foresight, and efficiency.

CFD is a branch of fluid dynamics that uses computers to calculate and analyze problems involving fluid flows such as gas and liquid. Programs such as
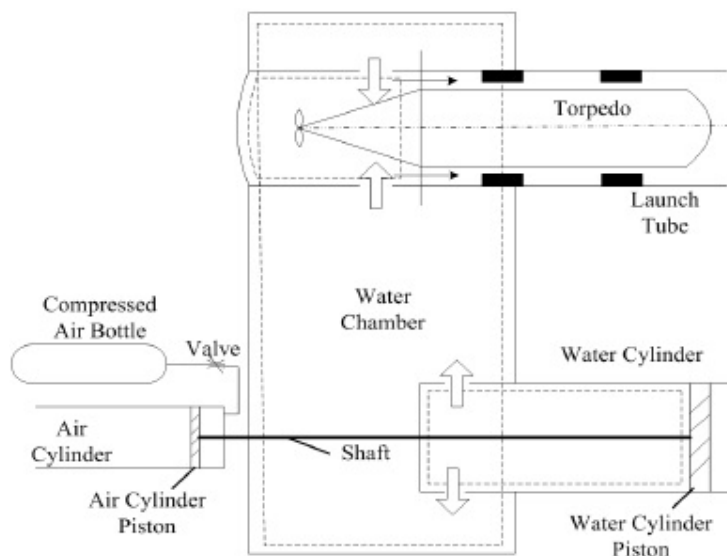

Figure 1: Water pressure trimmed launched system

OpenFOAM are used to define boundary conditions of fluid flows. The fundamental basis of most CFD problems relates to the Navier-Stokes equation, which defines any single-phase fluid flow. Then the equation can be simplified to result in Euler's equations by removing the viscosity term. Furthermore, full potential equations are obtained by taking out the vorticity term (irrotational).

OpenFOAM is the software used to perform the computation portion of the research. It uses finite volume numerics to solve systems of partial differential equations ascribed on any 3D unstructured mesh of polyhedral cells. It is a free, open-sourced CFD software developed by OpenCFD Ltd. Its usages vary from commercial to educational purposes. The wide range of features allows users to solve anything from complex fluid flows involving chemical reactions, turbulence and heat transfer, to solid dynamics and electromagnetics. The core technology of OpenFOAM is a flexible set of C++ modules. This allows solvers, utilities, and libraries to be built. It is open, not only in terms of source code, but also in its structure and hierarchical design, therefore solvers, utilities and libraries are fully extensible.[1]

The torpedo-launching system is the most important component of the launch process. The type of launch system studied is the water pressure trimmed system that uses compressed air as energy source, shown in Figure 1.[2] As the valve open, the air from the compressed air bottle will flow into the air cylinder piston. Then the air cylinder piston pushes the water cylinder piston to release water into the water chamber. The pressure difference between the chamber and launch tube allows launching process. Past research focused on 1-D modeling of the launch system's dynamics, which neglect the geometry aspect.[3, 4] Modeling with geometry is significant because it can predict system's

energy density and vibration and noise.[5] In addition, the 2-D and 3-D simulation of torpedo launch system have been compared and validated with experimental data.[5, 6]

Simulation of torpedo launching is modeled by CFD (Computation Fluid Dynamics). An axisymmetric model will be considered in the simulation. A moving-mesh method is used to solve for the motion of the torpedo relative to the tube. The tube inlet is modeled as a pressure-inlet boundary condition. Experimental data will be used to verify the CFD simulations. Characteristics of the launching flow field and pressure distribution having been specified. In this study, the geometry of the torpedo and the length of the launch tube are the most important properties. The purpose is to increase the energy density of the launching process.

Method and Approach

In any simulation, choosing a convenient computation domain will simplify the complexity of the problem. Similar to Xiaofang Zhang's model, this model only regards the interaction of the flow and torpedo in the launch tube; therefore, only water in the tube and outside of the submarine are selected into the computation domain. Also, since the geometry is symmetrical, an axisymmetric model can be applied to reduce to computing time and further simplify the problem.[5]

The detailed launched tube model is shown in Figure 2. Add-ons in the tube's interior wall are not modeled for simplicity. Also the boundary condition will be defined using a wall boundary at the submarine surface and a pressure outlet boundary.[5]

The torpedo is modeled using simple shape excluding any fine, rudders and propeller. Different nose shapes of the torpedo, which introduce great drag force in the launching process, will be tested to determine to optimal geometry.

The physical model will be created via CAD (computer aid design) software, and then meshed into grid using meshgen.

Mathematical Model

Regarding any fluid flow problem, the Reynolds number determines the state of the flow, whether is it laminar or turbulent. The definition of Reynolds number is as follows:

$$Re = \frac{Ud}{\nu} (1)$$

Where U is the mean velocity, d is the equivalent diameter of the tube, and ν is the kinematic viscosity, which water is used in this study. In the literature, the velocity of a torpedo can reach 12m/s, thus Re = 2.7e6 at the tube inlet. According to the characteristic of flow in pipe, the flow field is incompressible and turbulent.

The Reynolds averaged Navier Stokes Equations serve as governing equations. In rectangular form, it is expressed as:

$$\frac{\partial U_j}{\partial x_j} = 0 \ (2)$$

$$\frac{\partial U_i}{\partial t} + \rho U_j \frac{\partial U_i}{\partial x_j} = -\frac{\partial P}{\partial x_i} + \frac{\partial}{\partial x_j}\left[\mu\left(\frac{\partial U_i}{\partial x_j} + \frac{\partial U_j}{\partial x_i}\right)\right] - \frac{\partial}{\partial x_j}(\rho\overline{u_i u_j}) \ (3)$$

Where ρ is the density of the fluid, P is the pressure, $U_{i,j}$ and $u_{i,j}$ is the fluid mean and fluctuating velocity component, μ is the dynamic viscosity, and $\overline{u_i u_j}$ is the Reynolds stress tensor. According to Xiaofang Zhang, since the stress tensor needs a closure, a popular assumption is that it is proportion to the strain rate tensor, by defining a turbulent viscosity ν_t as

$$\nu_t = \frac{\mu_t}{\rho} = \frac{C_\mu k^2}{\varepsilon} \ (4)$$

Where k is the turbulent kinetic energy and ε is the turbulent kinetic energy dissipation rate.

Two more equations are introduced with the standard k-ε model:

$$U_j \frac{\partial k}{\partial x_j} = \frac{1}{\rho}\frac{\partial}{\partial x_j}\left[\left(\mu + \frac{\mu_t}{\sigma_k}\right)\frac{\partial k}{\partial x_j}\right] + P_k - \varepsilon \ (5)$$

$$U_j \frac{\partial \varepsilon}{\partial x_j} = \frac{1}{\rho}\frac{\partial}{\partial x_j}\left[\left(\mu + \frac{\mu_t}{\sigma_\varepsilon}\right)\frac{\partial \varepsilon}{\partial x_j}\right] + C_{\varepsilon 1}\frac{\varepsilon}{k}P_k - C_{\varepsilon 2}\frac{\varepsilon^2}{k} \ (6)$$

Where P_k is the turbulent kinetic energy production term.

Through experiment, the above constants are determined and $C_\mu = 0.09, C_{\varepsilon 1} = 1.45, C_{\varepsilon 2} = 1.9, \sigma_k = 1, \sigma_\varepsilon = 1.3$.[5]

Newton's second law of motion governs the motion of the torpedo:

$$F = ma \ (7)$$

$$\frac{dv_t}{dt} = \frac{1}{m}F \ (8)$$

Where a is the acceleration, derivative of the torpedo velocity v_t, and m is the torpedo mass, F is the total force acting on the torpedo which is obtained from integrating pressure on the surface of the torpedo.

Overall Procedure

First, an analytical solution, referring to the potential flow solution, of a simplified shape of a torpedo, bullet shape, will be obtained under certain assumptions to get a sense of what the computational result would be. Assumptions such as incompressible fluid, constant temperature, 2-phase flow, neglecting any cavitations, inviscid flow, boundary-layer and subsonic flow are made. Boundary conditions are specified. Data regarding the torpedo and launch tube, such as initial launch condition, typical speed at launch, and velocity and pressure profile, will be given from other similar experiments.

The next step is to model this simple launching simulation on the CFD program, Openfoam. Afterward, actual shape of torpedo and launching condition

13

will be taken into account. A rough draft of the simulation will be done by hand, and the following methods will be used to solve the situation: based on the Reynolds-averaged Navier Stokes equations and a k-epsilon turbulence, axisymmetric model will be considered in the simulation; a moving-mesh method will be used to solve for the motion of the torpedo relative to the tube.

The Navier Stokes equations are used widely regarding most of the fluid dynamics related problem. The K-epsilon turbulence model is one of the most common turbulence models. It is a two-equation model, which includes two extra transport equations to represent the turbulent properties of the flow, allowing taking into account for history effects like convection and diffusion of turbulent energy. The Axisymmetric model is designed to work on two-dimensional meshes, and should only be activated if the mesh is indeed two-dimensional. A further restriction is that the mesh is oriented such that the axis will be at y=0 in global coordinate space. Therefore no part of the mesh can be below y=0, and boundary face that is tangential to the y=0 axis should be of type Axis.

Results
Result is still pending and is not currently available. The prediction is that for the nose shape, at an angle about 40-45 degrees, the drag is reduced to an optimal level; and the launch tube is shortened about 1/3 of its original length to reduce material cost.

Future Studies
After results have been obtained, the next step is to investigate this launch system further by adding on more complexity and taken out some of the assumptions such as assuming terminal velocity is reached inside the launch tube. Also, if funding is feasible, experiments will be conducted to verify the computational results.

References
1. "User Guide", OpenFOAM, June 2011
2. ZHANG Xiao-fang, WANG Shu-zong, LIAN Yong-qing, "Modeling and Simulation of Pneumatic and Hydraulic Underwater Weapon Launching System," Chinese Journal of System Simulation, vol. 21, pp. 3092-3095, May 2009
3. LI Zhong-jie, WANG Shu-zong, LIAN Yong-qing, CHEN Yi-hui, Simulation on adjustable discharge valve of underwater compressed-air launcher. Chinese Journal of System Simulation (in Chinese). 2005,17(12): 3074-3080.
4. Lian Yongqing, Wang Shuzong, Chen Yidiao, Optimal study on the underwater weapon's interior trajectory of compressed air launcher, Chinese Journal of Ballistics (in Chinese). 2002, 14(2): 1-5.
5. Xiaofang Zhang; Shuzong Wang; Dexin Yu, "2D Axisymmetric CFD Simulation of Underwater Torpedo Launch Tube Flow," *Information Engineering and Computer Science, 2009. ICIECS 2009. International Conference on* , vol., no., pp.1-4, 19-20 Dec. 2009
6. Ravi Ramamurti, William C. Sandberg, and a.R. Lohner, Simulation of a Torpedo Launch Using A 3-D Incompressible Finite Element Solver and Adaptive Remeshing. 1995, Naval Research Laboratory Washington, DC 20375-5320.
7. Chen Yang, Xaio-long Gou, Sheng-li Tang. "Multi-scale Modeling of Energy System via the Means of Coupling Process and CFD Models," International Conference on Power Engineering, pp.1380-1384, October, 2007, Hangzhou, China

Attachment and Memory

Fausto Gonzalez

University of California Davis

Abstract

Psychologists have examined people's earliest memories, but little is known about what determines the nature and detail of these memories. One possibility is that differences in attachment style – the orientation to close relationships learned in one's family during childhood – are associated with what is recalled and reported as an early memory. Research indicates that avoidant individuals use memory suppression as a defense, so they may be especially inclined to bias their recall or report of earliest memories. Anxious and avoidant attachment may also be related to the emotional tone of early memories and the way parents are portrayed in these memories, given that attachment patterns emerge from early relations with parents. This ongoing study focuses on relations between the two major dimensions of attachment insecurity—anxiety and avoidance—and recall of early experiences, including ones with parents. Questionnaire measures are being used to assess the quality of past and present relations with parents, attachment anxiety and avoidance, and participants' (a) earliest memory, (b) earliest memory with mother, and (c) earliest memory with father. Additional measures related to memory suppression are included. It is hypothesized that more avoidant individuals' earliest memories will be less clear and will not refer back as far in time, and that both anxiety and avoidance will be associated with less positive early memories, which will provide theoretically and clinically useful information about attachment and early memories.

Early memories have proven to be an elusive topic of study, and as a result, there is a relative gap in early memory research. Studies have shown that consolidation and retrieval of memories can be affected by an assortment of characteristics, which only adds to the mysteries and uncertainties of early memory research. The present study examines the possible connections between early memory and attachment insecurities. Attachment theory, created originally by John Bowlby (1982/1969), is an offshoot of psychoanalytic theory. The original form of that theory, as is well known, was created by Sigmund Freud in the years from 1895 to 1930. Many aspects of Freud's theory have been criticized and revised since 1930, and Bowlby's extensive revision is the one that has received the most attention from researchers, because Bowlby related his ideas closely to research in evolutionary biology, cognitive-developmental psychology, and community psychiatry. One characteristic of attachment theory that remains from Freud's original theory is the emphasis placed on early parent-child relations. Bowlby's conception of attachment insecurities rooted in childhood was operationalized in the 1970s by Mary Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978). They showed in laboratory and home-observational studies that children's attachment patterns, originally called secure, anxious, and avoidant, can be predicted by characteristics of a child's parents' behavior. Securely attached children have parents who are sensitive and responsive to their needs, which creates in their children a sense of self-confidence and comfort with intimacy. Anxiously attached children have parents who are sometimes

attentive and sometimes not (mostly when the parents themselves are anxious), and this causes the children to be doubtful about the availability of support and overly vigilant in later relationships, watching out for rejection, inattention, or abandonment. Avoidantly attached children have parents who are uncomfortable with having someone fully dependent on them, and this causes the children to try to become self-sufficient and unwilling to rely on relationship partners later in life.

The dimensions underlying the attachment patterns, called attachment anxiety and attachment-related avoidance, can be assessed in young adults with self-report measures (research on this topic has been reviewed and integrated by Mikulincer and Shaver, 2007). Measures of attachment anxiety and avoidance have been found to correlate with a wide variety of other theoretically relevant variables, including emotional memories, emotion-regulation strategies, social perception, and functioning in romantic or marital relationships. The purpose of the present study is to explore possible relations between the attachment insecurity dimensions and features of early childhood memories. To the extent that emotional memories and emotion-regulation strategies are related to attachment orientations, recalling early childhood experiences may be affected by attachment insecurities. In particular, these insecurities are expected to influence the emotional content of early memories and the number and clarity of memories recalled.

A few studies of young adults' earliest memories have been conducted, although they did not include measures of attachment orientations. Peterson, Smorti, and Tani (2008) found a number of significant associations between the recollection of early memories and the type of parent-child relationships reported. They found that children who reported more supportive relationships with parents

during childhood recalled more memories, recalled more positive affect in their memories, had more episodic (specific, detailed) as opposed to script-based memories, and had a mean age of memory recollection that was younger than individuals with poor parental involvement. They also found gender differences in memory recall: Women recalled more and earlier memories than men.

Englander (2007) linked early emotional memories with later psychological functioning (e.g.., needs, coping strategies, values, and daily choices). In light of these findings, it seems likely that attachment patterns, which have also been associated with coping strategies (Mikulincer & Shaver, 2007), will be associated with features of early childhood memories. Loftus (1993) found that personality factors affected the recollection of early memories. She found that retrieval of early memories was significantly affected by such things as coping strategies, categorical thinking, neuroticism, and openness to experience, which was consistent with what she called the motivated retrieval failure hypothesis. Attachment insecurities can also be viewed as personality characteristics (they are, for example, fairly stable over time), and they are related to various aspects of social motivation. Thus, they may also be associated with motivated memory retrieval and failure of retrieval.

If it is found that attachment insecurities play a role in early memory formation and recollection, this may provide a new window into psychopathology associated with early childhood trauma. Salvin, Stein, Pinsker-Aspen, and Hilsenroth (2007) found a significant difference in adult object relations (representations of social experiences) between individuals with low-severity childhood sexual abuse and high-severity childhood sexual abuse. Sexual abuse is an example of attachment-related trauma that contributes to later attachment

insecurities. But Salvin et al. did not include attachment measures in their study.

Method

Using the *Handbook of Family Measurement Techniques* (2001), a series of questionnaires and surveys were selected to assess parent-child relationships, the relevance of these relationships to adult social interactions, the degree to which these relationships contribute to psychopathology, and current (young adult) attachment patterns. The selected questionnaires include the *Network of Relationships Inventory* (Furman & Buhrmester, 2009), the *Parental Nurturance Scale* (Buri, 1989), the *Experiences in Close Relationships Inventory* (Brennan et al., 1998), and the *Positive Affect and Negative Affect Scale* (Watson, Clark, & Tellegen, 1988). These measures were used to assess the degree to which participants exhibit a level of interdependence from their parents, their adult attachment patterns (assessed in terms of degree of anxiety and avoidance), and the degree of positive and negative affect exhibited by the participants.

Also included were assessments of each study participant's (a) earliest memory, (b) earliest memory that includes mother (or mother figure), and (c) earliest memory that includes father (or father figure). Participants were 250 undergraduates attending the University of California, Davis, who completed questionnaires presented on a secure survey website managed by the Department of Psychology. The participants received research credit in a psychology course in exchange for helping with the study.

Results

The data are still being analyzed, but preliminary correlations (Pearson product-moment correlations, represented by the italicized letter "*r*") include the following (where + indicates a borderline significance level of $p < .10$, * indicates significance at $p < .05$, and ** indicates significance at $p < $

.01). The italicized letter *p* represents the probability that a particular result might have occurred by chance, given the sample size, so the smaller *p* is, the more likely it is that the result was not due to chance.

As expected, more avoidant participants reported memories of their parents that were more negative than those of participants who were less avoidant. For example, both "bad mom" ($r = .14**$) and "bad dad" ($r = .19**$) scales were significantly correlated with avoidant attachment scores. In addition, participants with higher avoidance scores had lower scores on "good parent" scales (good mom $r = -.34**$; good dad $r = -.32**$). As expected, avoidance was associated with age of earliest memory – that is, with not being able to remember back as far in time – but only for mothers ($r = .16*$). Avoidance correlated significantly with the emotional negativity of early memories involving the father ($r = .23**$), but not with those involving the mother. The significant correlations were as expected, but the difference between the parents was not expected.

Attachment anxiety was correlated with higher "bad mom" scores ($r = .21*$), with lower "good dad" scores ($r = -.23**$), and with less positive early memories of dad ($r = .11+$). Participants tended to recall their two parents, or parental figures, in similar ways, with both being either "good" or "bad" (good mom and good dad, $r = .55**$; mom bad and dad bad, $r = .29**$), and the emotional valence of specific early memories for one parent was correlated with the emotional valence of early memories of the other parent (affect of mom memory with affect of dad memory, $r = .32**$).

Also, the affect of the early memories was consistently associated with parental "goodness" and "badness," suggesting that conscious, explicit evaluations and the evaluations implied by early memories were similar. For example, the good mom scale

correlated significantly with the affect of the earliest memory involving mom ($r = .23**$), while the good dad scale correlated significantly with the affect of the earliest memory involving dad ($r = .53**$). As expected, emotional suppression, considered a nonoptimal method of emotion regulation, was significantly associated with attachment-related avoidance ($r = .58**$), and avoidance was negatively correlated with the healthier regulation strategy, reappraisal ($r = -.28**$). Also as predicted, attachment anxiety was associated with rumination on negative memories ($r = .53**$).

When the affect ratings of all three early memories (earliest memory overall and earliest memories involving mom and dad) are combined, to increase reliablity, avoidance correlates positively with age of earliest memories and negatively with the affective tone of the memories, as expected, and these associations become nonsignificant when suppression is controlled. This suggests, as expected, that suppression – a psychological defense – plays a role in restricting access to early experiences, especially experiences with parents.

<p style="text-align:center">Conclusions</p>

Early memories are one way that people mentally represent themselves and their early relationship partners. To the extent that these memories are negative, they may be associated with negative self views and dysfunctional coping strategies. To the extent that a person does not want to remember hurtful early experiences, he or she may suppress early memories and therefore not be willing or able to look back as far as peers in time. Early memories may therefore be useful in psychotherapy and personality assessment, providing clues to sensitive issues in a person's memory network. If these memories are systematically related to attachment patterns, assessing both those patterns and early memories may help clinicians and counselors get to the heart of clients' underlying problems more quickly.

<p style="text-align:center">References</p>

1. Bowlby, J. (1982). *Attachment and loss: Vol. 1, Attachment* (2nd ed.). New York: Basic Books. (Orig. ed. 1969)
2. Brennan, K A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York, NY: Guilford Press.
3. Buri, J. R. (1989). Self-esteem and appraisals of parental behavior. *Journal of Adolescent Behavior, 4*, 33-49.
4. Englander, M. (2007). Persistent psychological meaning of early emotional memories. *Journal of Phenomenological Psychology, 38*, 181-216.
5. Furman, W., & Buhrmester, D. (2009). "The network of relationships inventory: Behavioral systems version. *International Journal of Behavioral Development, 33*, 470-478.
6. Loftus, E. F. (1993). Desperately seeking memories of the first few years of childhood: The reality of early memories. *Journal of Experimental Psychology: General, 122*, 274-277.
7. Mikulincer, M., & Shaver, P. R. (2007). *Attachment in Adulthood: Structure, Dynamics, and Change*. New York, NY: Guilford Press.
8. Peterson, C., Smorti, A., & Tani, F. (2008). Parental influences on earliest memories. *Memory, 16*, 569-578.
9. Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS. *Journal of Personality and Social Psychology, 54*,1063-1070.

Intervention: The Effects of Parental Involvement and Attention Deficit Hyperactivity Disorder on a Child's Educational Success

Treasineu McDaniel

University of California, Davis

Research suggests that the process of dropping out is not sudden; that teens go through long processes of academic disengagement. One factor related to academic struggle is Attention Deficit Hyperactivity Disorder (ADHD). Of the approximately 4.5 million children in the U.S between 3 and 17 years of age, 4% of females and 11% of males have been or will be diagnosed with ADHD. Most analysis of dropout rates measures psychological and social effects as having separate and independent influences on educational attainment. Yet children with ADHD often have difficulty in school as they struggle to sustain a long span of focus; some develop behavioral issues in the classroom as result. As such, an anecdotal assumption that ADHD will cause children to have negative school experiences can be sustained.

ADHD is an impairment that affects both the psychological and social condition. Characterized by chronic and impairing behavior patterns and abnormal levels of inattentiveness, it affects 3-5 % of school-age children and 2-8% of college students; young African American males are diagnosed at much high rates. ADHD is diagnosed most often through questionnaires given to parents, family, and teachers, patient interviews with doctors or other healthcare professionals, or exclusionary medical tests that attempt to isolate ADHD as a sole cause. Individuals with ADHD often have difficulty with memory and with response inhibition. Also, because of the social nature of the disorder, along with severe academic challenges, individuals suffer from grave emotional challenges and co-morbid conditions such as Oppositional Defiant Disorder (ODD, 30-50%), Conduct Disorder (CD, 30-50%), Anxiety Disorder (20-30%), and/or Bipolar Disorder (11-22%).

It has been determined by scholars in the fields of education, behavioral sciences, and those that examine the interaction social psychological behavior that students who suffer from ADHD are significantly less likely to be academically successful. Such findings can be found in "The Academic Experience of Male High School Students with ADHD" (Kristine M. Kent et al). In a qualitative study of 516 males previously diagnosed with ADHD, this longitudinal study tracked their success and followed them over the four-year period of their high school careers. The interaction and input of teachers and parents as well as the students themselves was used to determine the academic and social success of the participants. The result of the study held that "children with ADHD grow up to have significant academic impairment in high school". An important variable mentioned in this study that this research was unable to examine was school attendance. This research found that male students with ADHD were had many more absences than other students. Also this study shows that their teachers report that students with ADHD complete and turn in less work than their counterparts. This study, although a study of a specified population, exemplifies the same issue: students with ADHD are gravely academically disadvantaged. Another study done concerning the outcomes of female adolescents with ADHD ("Late Adolescent and Young Adult Outcomes of Girls Diagnosed with ADHD

in Childhood: An Exploratory Investigation") revealed more psychological contributors that could have influence on educational performance. This study was more than just a measure of academic achievement; it measured interpersonal relationships, psychological evaluation, and overall social adjustment. These factors can be directly correlated to a student's school performance. Although there were no significant findings for emotional disorder amongst girls with ADHD, the study did find a significant number of them who struggle with depression and/or social maladjustment. Also, although moderate levels of delinquency were also reported there was not enough to establish a causal relationship with ADHD. The same was found for interpersonal and family relationships wherein there were no statistically significant findings yet there were notable differences amongst the girls with ADHD. To reconcile differing results studies sampled from diverse populations isolate more organic reasoning for poor school performance, such as a deficit in executive functioning. Said findings can be explained by understanding the difficulty of students who have ADHD, but also the mediating factors mentioned above that provide for such varying results.

Literature on parental involvement confirms much of what is socially expected. That is, higher levels of parental involvement can predict a child's relative success in a given setting. In a nine-year longitudinal study of African Americans and academic performance, parental involvement was one of the strongest predictors of academic success (Dailey and Birchwood). Similarly studies measuring the academic success of students across ethnicities in urban areas found strongest correlations to be between parent interaction and higher levels of performance (Andreas J. et al). Also, in a study of children in primary school with ADHD, parents who practiced what the study labeled "parent-tutoring" faired higher in their reading performance (Hossler et al). From this information pulled from a variant scale of parental involvement it can be deducted that parental involvement is inextricably linked to children's educational outcomes; but because of the proposed organic nature of ADHD, do the same ideals apply?

This question is the foundation for the research that follows: How does ADHD affect a child's academic success? To more succinctly reach the answer to this question, posed are two directly exploratory inquiries: 1) Does ADHD have a negative effect on educational attainment? 2) Does parental involvement mediate ADHD's effect on educational outcome? From previous research, some of which is presented above, we can predict that ADHD will have an independent negative effect on educational outcome. Also, because parental involvement in other areas, according to background research done, has its own effect on positive educational outcomes we can deduct those higher levels of involvement may mediate ADHD's effects.

The National Longitudinal Study of Adolescent Health ascertained a stratified random sample of youth from U.S. high schools. In Wave I, 20,745 adolescents (grades 7–12, ages 12–20 years during the 1994–1995 school year; 47.5% male) were interviewed. One year later, in Wave II, approximately 15,000 of the same youth were assessed during in-home interviews. Approximately 5 years later, an embedded genetic sample, consisting of full siblings and twins, was asked to provide saliva for genetic analyses in Wave III (3,787). The subjects at Wave III had a mean age of 22.4 years.

For our sample we used a filtered sample of participants who rated high on a self-reported scale of ADHD. These were questions designed to measure, in a deductive manner, the likelihood that the

participant did in fact have ADHD—questions such as, " When you were between 5 and 12 years old did you have difficulty sustaining your attention in tasks or fun activities?" The variable for parental involvement was quantified on a ten-item on a scale that measured the amount of time parents spent with their children with questions such as, "How much time have you spent on a school project with your child in the past week?" The dependent variable, educational attainment, was measured by number of schooling completed on a scale from 6 to 22; 6 being middle school and 22 being graduate level. Also included were control variables: age, gender, ethnicity, delinquency, and attachment patterns. The sample was made up of 9774 participants, 49% female and 51% male, whose ages range from 12-21. The study's findings held four variables to have the strongest statistical significance in testing dropout probability against ADHD: gender, neighborhood safety, parental involvement, and delinquency. Males with ADHD, for example, were found to be 26% more likely to drop out of high school than females. The variable that quantified

the neighborhood. Participants in Wave II were rated on overall residential satisfaction and personal perception of community efficacy and the presence of informal social control. Answers to question previously mentioned were both based on ordinal scale and yes or no scales that were put together to in a collective measure of neighborhood quality, also indicative of class.

Parental involvement was also measured in Wave II. This variable quantified the overall parental-adolescent bond. Wave II participants were asked questions relating to both direct and indirect forms of parental control. Participants were asked if they had curfews and if they felt like they could talk openly to their parents without judgment. These questions were combined to quantify parent relationships. Lastly, delinquency was surveyed on an ordinal scale measuring minor to more serious offenses.

The result of statistically significant variables are displayed in the table be below. This study posed two hypotheses: 1) There would be a significant relationship between ADHD and dropping out net of all other factors 2) Parental involvement would mediate ADHD's effect on educational attainment. Although for educational attainment and parental involvement there were statistically significant outcomes, when combined in an interaction both effects were lost. According to the logistic regression model (left), for every one unit increase in ADHD there is a .723 increase in dropout probability. According to the OLS regression model (right), for every one-unit increase in ADHD the years of education decrease by .579 (nearly 60%). Delinquency decreased the likelihood of educational success by 30%,

VARIABLES	Logistic Regression (1) Dropping Out		OLS Regression (2) Years of Educ
	Odds Ratio	% Change Odds	Raw
ADHD	0.723***	106%	-0.579***
	(0.062)		(0.037)
delinquency2	0.260**	30%	-0.348***
	(0.104)		(0.057)
parents	-0.886***	-59%	0.699***
	(0.068)		(0.037)
neighborhood	-0.123	-12%	0.129**
	(0.123)		(0.059)
healthcare	-0.057	-6%	0.198***
	(0.163)		(0.076)
Male	0.229***	26%	-0.175***
	(0.070)		(0.035)
academic	0.029***	3%	-0.025***
	(0.002)		(0.001)
Constant	-0.505		11.511***
	(0.292)		(0.154)
Observations	11172		11174
R-squared			0.109
Robust standard errors in parentheses			
*** p<0.01, ** p<0.05			

neighborhood safety, established in Wave II, asked questions to assess the security of

and being male also decreases academic success probability. Also included in the table are some potential mediating factors. The study's results show that an increase in the intensity of parental relationship decreases the likelihood of dropout by nearly 60%, which is almost as much it is increased by ADHD alone. Another, although less significant, variable is the importance of neighborhood safety. Neighborhood safety yields a 12% decrease in the probability of dropping out. Another mediating factor that even less significant yet still worth mentioning is the importance of quality health care.

In order to reconcile the counterintuitive findings there must be heavy reliance on the literature. That is to say that because the results contradict abundant sources of academic knowledge that the flaws must lie in our methods. First, the measure of parental involvement measured only the amount of time spent between parent and child. This can present many problems; one being that parents who spend time with their children but who are not educated about ADHD will have no effect in deterring its effects. Also the measure of ADHD itself is limited as it retrospective and self-reported opposed to an official diagnosis.

The educational implications of the correlation between ADHD are indicative in the lacking for accounting for the needs of students with this learning disability. Said children and adolescents are often placed in classrooms with typical children who are able to learn in conventional ways and made to feel even worse than they probably already do. In the formerly mentioned study a lack of class attendance was highlighted which could possibly be because of feelings of inadequacy in comparison with the other children in the classroom. Such learning disparities call for amendments to the educational system as a whole; amendments that prevent labeling but also provide for the needs of children

who require them. Such amendments may require more funding, more parent involvement, or simply more strategic planning but such plans are not uniform for educational institutions; amendments are highly dependent on the school, its demographics, and its resources. Such lacking is also indicative of the lack of consideration for learning disabilities, namely ADHD.

The limitations of quantitative study are that researchers are forced to infer the meanings of relationships between variables. Although ADHD and dropout were determined to have a relationship, this study was unable to determine individual reasoning as to why dropout rates were so prominent in ADHD populations. Control variables allowed for the study to make inferences and draw conclusions from the numeric findings, yet a qualitative study could have provided more concrete answers. The benefit to a qualitative study in this case would have been opportunity to obtain responses on a more individual basis. The limitations of qualitative research in this case would be the prevention of a national data set; a set that could be easily used in quantitative research.

Possibilities for future research include the examination of ADHD, negative self-image, and subsequent delinquency. Because students in the research examined above were found to drop out at higher frequency than their counterparts, the question of why needs to be answered. One possible explanation could be the negative self-image that carries as a result from the labeling effects of ADHD. Research in this area could act to possibly extend bridging and/or inclusion programs for children with special needs in order to make them feel included in society. This could possibly act as a deterring mechanism for dropping out. Also if negative self-image is addressed at the onset of diagnosis, the potential for success in higher education and career opportunities is increased. Research on

learning disabilities—aside from ADHD—is in dire need of further study. Many students, especially in underserved communities suffer from undiagnosed learning disabilities and those with a diagnosis are hard pressed to find resources to support their special need.

The Weight of Poverty:
Deconstructing the Political Discourse on the United States Supplemental Nutrition Assistance Program in California

Sarah J Palmer

Department of Sociology
University of California Davis

Abstract

Over 46 million Americans live in households unable to consistently purchase adequate food. Government supplemental food programs have aided in filling the gap. In recent years, a public debate has emerged over the proposition that federal supplemental food programs, namely the Supplemental Nutritional Assistance Program (SNAP), contribute to the nation's obesity epidemic. This issue is demonstrated at the California State level with the comparison of two proposed bills offering two varying solutions. Framing the political discourse are two varying points of view regarding the link between supplemental food programs and obesity, wherein conservatives and liberals disagree about the size and significance of the effect of this supplemental food program on obesity. Moreover, conservatives tend to blame the food programs themselves while liberals tend to blame the high cost of food as well as the lack of healthy food in low-income neighborhoods. However, this is not simply an issue of party polarization; the study demonstrates that the debate over the purported link between food programs and obesity is far more complex.

Introduction

Currently, the United States Department of Agriculture reports that 46 million Americans live in households unable to consistently purchase adequate food. Governmental supplemental food programs have aided in filling the gap (USDA, 2012). In recent years, a public debate has emerged over the proposition that federal supplemental food programs contribute to the nation's "obesity epidemic." Framing the political discourse are two varying points of view regarding the link between supplemental food programs and obesity, wherein conservatives and liberals disagree about the size and significance of the effect of supplemental food programs on obesity. Legislative attempts in Minnesota, New York, and California have been made to limit the scope of purchase in SNAP by eliminating high sugar items- namely soda. To complicate matters, debates within the left and the right have surfaced as multiple organizations offer multiple solutions. The debate has escalated in the current period of political polarization, economic recession and recovery, with every group being very protective of what little it has.

The issue of obesity and supplemental food programs is emotionally charged-- touching on the ideas of basic needs and human rights, personal choice, and classism. This study will focus on the California food policy arena, and specifically two bills (AB 669 and SB 471) proposed in spring of 2011 as solutions to the growing obesity epidemic in the State. I will examine the values, priorities, and strategies that frame the debate. The reason that this topic is important to examine is that obesity in general, but more so among the poor, is a serious issue. It is a public health risk, and some might say a matter of national security; rising obesity rates lead to an unhealthy citizenry, which in turn has a negative effect on the nation's workforce

and productivity. From a sociological perspective it offers a lens for viewing the contemporary dispute about obesity, nutrition and the welfare state. California as a state is large and diverse both in geography and population; any problem that the state is experiencing is applicable to the national level. In addition, the California case provides insight into the politics of this issue that may be applicable to other food policy and nutrition debates as well as to other contexts such as other American states and federal level. The most notable political dynamic in the California debate was that advocates on both sides worked hard to build coalitions and gain allies and that this often led to a phenomenon of "strange bedfellows."

Brief Federal History of SNAP
The first legislation in the United States authorizing a needs-based food assistance program was in May of 1939 under the Potato Control Act under the Direction of the Federal Surplus Commodities Corporation (FSCC). As the title of the organization suggests, the primary focus of the FSCC was regulating surplus and strengthening agricultural markets through farm industry pricing (University of Michigan Library Collection, 1985). The first Food Stamp Program (FSP) allowed eligible participants to purchase orange-colored stamps that were equal to their normal food expenditures; and for every one dollar worth of orange stamps, 50 cents worth of blue stamps were also received. Orange stamps could buy any food, and blue stamps could be used to purchase surplus foods determined by the Department of Agriculture (USDA, 2011). The program was short lived and last for only five years.
Eighteen years later, in 1961, President Kennedy incited an expansion of distribution and demanded an increase in perishable goods; diverting the focus on shelf-stable products (i.e. "government

cheese"). Four years later, President Johnson asked congress to make the FSP a permanent program. With *The Food Stamp Act of 1964* the goal shifted slightly to strengthening the agricultural economy, *as well as* improving nutrition levels among low-income recipients (University of Michigan Library Collection, 1985). In 1974 the large pilot program expanded to the entire nation with 14 million on the rolls (USDA, 2011). *The Food Stamp Act of 1977* streamlined eligibility through income determined guidelines, added more rules and bolstered the bureaucratic process. Many regard the most important change to SNAP was brought on by *The Food Stamp Act of 1977*: the decision by the government to go to an entitlement program and eliminated the purchase requirement. The early 1980s brought cutbacks, however, in the mid eighties the Electronic Benefits Transfer card (EBT) was introduced which was seen as a great way to simplify a difficult transaction (Bartholow, interview, 7/13/2011) and most importantly, reduced stigma. The welfare reform of 1996 (PRWORA) eliminated the eligibility of most legal immigrants, placed strict time and work restrictions on the time allowed in the program, and froze standard deductions, vehicle value limits, and minimum benefits. The early 2000s restored the program somewhat with both increased funding and the reinstatement of more lenient qualification requirements. In an important change, *The Food and Nutrition Act of 2008* defined eligible food as "any food or food product for home consumption and also includes seeds and plants which produce food for consumption by SNAP households" (USDA, 2011). Today, in the wake of the Great Recession, the United States Department of Agriculture reports that SNAP enrollment is at an all time high with over 46 million recipients (1/2012).

A Contemporary (National) Discussion

On a national level, there have been attempts at legislation to regulate the amount of "sugar" (but really we are talking about high fructose corn syrup) and "junk food" that is available to everyone; however the focus has been disproportionately on poor people. Many claim that because low-income populations have high rates of obesity, focusing on them makes sense. Across the United States there have been proposed soda taxes, "soda bans," and attempts to limit the purchasing scope of SNAP recipients. For a number of reasons none have ever come to fruition. Beginning in 2004, the Agriculture Department denied a request by Minnesota to prevent food-stamp recipients from buying junk food (Oliver, 2006). The department said that the plan, which focused on candy and soda, among other foods, was based on questionable merits and would "perpetuate the myth" that food-stamp users made poor shopping decisions. Welfare rights and anti-hunger advocates accuse states of being patronizing to food-stamp users. Joel Berg of the New York City Anti-Hunger Coalition explains that, "It is really all about punishing poor people, and micro managing people's lives. It would be one thing if all of these rules regulations were there from the beginning, but these have all been added on and continue to be" (interview, 8/14/2011). Congress debated but rejected restricting the purchase of sugared drinks with food stamps as part of the 2008 farm bill.

Recently in California: SB471 & AB669

In February of last year, two bills were introduced at the California State Capital: SB471 Rubio and AB669 Monning, however different, both were in response to the mounting concern over the obesity epidemic in Californian communities throughout the state. In California, SNAP benefits are delivered under the state program, Cal Fresh. About 3.6 million individuals participate, and the state receives about $6.8 billion in federal funds for Cal Fresh. In federal fiscal year 2007, the average monthly household allotment was $259. In California, counties also share in the cost of administering the program, along with the state and federal government. Total costs per case were even higher—$93 in California—but this total includes expenditures not closely related to administering benefits (e.g., nutrition education, employment and training programs, and automation development projects) (PPIC, p.8).

Monning AB669

In its most fundamental form, AB 669 intended to put a one-cent tax on sweetened beverages. The money was to be placed in the Children's Health Fund, which would be used to fight obesity through a broad array of initiatives, from encouraging physical education to making potable water accessible in schools. To give a general estimate, this tax would have translated into a 12-cent tax on a 12 oz. can of soda, though sweetened beverages of all shapes and containers would be taxed, barring the exceptions discussed below. This bills aim was to curb obesity by disincentivising the consumption of soda, especially among low-income people and people of color who are disproportionately affected by obesity. The soda tax was modeled after the tobacco tax. The funds from a tobacco tax are used for tobacco prevention campaigns. Because the tobacco tax is passed on to consumers, people are actively discouraged from buying cigarettes, and thus the effects of smoking cigarettes are lesser simply because the population is creating fewer health problems for itself. This is the model that Bill Monning (D-Carmel) aimed to imitate. Engelhard and Garson suggest that aggressive public policy interventions that helped bring down tobacco use could be modified and applied to fight obesity, including, "imposing excise or sales taxes on fattening food of little nutritional value,

as the tax on cigarettes has proven to be the single most effective weapon in decreasing tobacco use" (2009, p.24). The tax would be applied to distributors and undoubtedly passed on to consumers. While this is not written into law, it is the assumed fall out by all sides. Mr. Monning welcomed this monetary burden as fulfilling the law's intent is to decrease the consumption of soda.

Assembly member Monning's bill, AB 669, has two goals: 1) to change the consumption habits of those who drink sugar-sweetened drinks, and 2) to raise money for anti-obesity programs. Monning's stated goal of AB 669 is to use market mechanisms to alter the behavior of those who drink sugar-sweetened drinks, using the same tactic as the cigarette tax. In concept, the bill was admirable, but as policy, AB 669 lacked focus and failed to see the state's obesity epidemic as the complex issue that it is. This is yet another example of policy that addressed symptoms rather than the disease. Although this bill rested on good intentions, further inspection reveals two exemptions to the tax that are politically clever but should have been included if the intention was truly rooted in a desire to combat issues of obesity. The exceptions are:

i) Any product sold in liquid form for consumption by infants, which is commonly referred to as "infant formula";
ii) Any product sold in liquid form for weight reduction;
iii) Water, to which no caloric sweeteners have been added;
iv) Any product containing milk, milk products, or plant protein sources;
v) Medical food, as defined; and,
vi) Coffee and tea

There is no defensible health reason that milk, coffee, and tea drinks should not be included in this bill. However big industry groups like the Dairy Council of California are highly influential, and have the ability to sway a politician: with the grassroots effort well underway, the Dairy Council is also working at the organizational level to garner support for flavored milk. It has reached out to a number of statewide associations of health professional, teachers, school food service directors and other influential leaders to inform them about the debate and disseminate information. The California Dietetic Association is already encouraging its members to support the effort. When asked about a recent victory in school lunch Ashley Rosales, R.D., Dairy Council project manager said, "We are pleased with the extent to which we have impacted the flavored milk debate so far," Rosales said. "That's why Dairy Council will remain vigilant and act quickly whenever we identify a threat. If we do, there's a good chance we can maintain flavored milk as an essential, highly nutritious option for millions of California school children while giving them a lifelong value for our product" (Dairy Today Editors, 1/02/12). Experts in the medical field are concerned about the implications of this bill, such as the author of one recent study published in the *Archives of Internal Medicine* who "suggested that people would likely switch to untaxed beverages with the same quantity of calories such as whole milk or fruit juice if sugar-sweetened beverages were taxed" (The Center for Consumer Freedom, 2011). This hints at the important fact that making soda inaccessible would not have the intended consequence of forcing consumers to switch to water or a lower-calorie drink, especially with the omission sweetened milk products and sweetened coffee and tea.

The use of funds would have been generated by extra one-cent tax per fluid ounce of every beverage classified by AB 669 would aim to impose the cost of sweetened beverages on par with more nutritional drinks that tend to be more expensive, like water. Monning further stated that the bill would generate an

estimated $1.7 billion in new revenues (leg info, 2011). This new money would be consolidated in the Children's Health Fund and spent to combat childhood obesity through local school district physical education programs, community-based nutrition and state-wellness programs. The concern was that the allocation of funds as specified by the bill is too unfocused, addressing a vast swath of recipient groups, who each have large goals with large price tags. For instance, 35% of the total revenues collected would be designated to six different projects, one of which was "ensuring free, clean drinking water access throughout the schooldays" (leg info, 2011), the cost of which would have required more than the entire forecasted revenue. As proposed here, the funds were spread too thinly between too many interests and have only the capacity to make very little impact. With everyone fighting over a small budget already, such an uncoordinated effort would have made very little impact towards reducing obesity.

A concern raised in the Tax and Revenue Subcommittee was that if the tax successfully discourages soda purchases, then the Children's Health Fund would lose its only source of funding. However, this consequence would still be a success because fewer people would be purchasing soda and the consequential health benefits would be apparent. While we have seen this effect with the tobacco tax, it has not definitively ended smoking, but simply kept the anti-smoking advertising proportionate to the smoking population. Further, sugary drinks are not the sole cause of obesity, and rather than addressing an––although brutally prevalent––contributor, the obesity epidemic is a multi-causal problem and would not be eliminated by simply carving sugar out of everyone's diet.

Finally, this excise tax would have translated to the consumer as a flat tax, a tax which is seen to disproportionately affect certain groups of Californian consumers and their liberties. In order to grasp the relevance of the disparity, it is important to focus on water quality and the cost of bottled water. Many argue that low-income communities have extremely poor water quality and cannot consume tap water. For drinking water, consumers must travel to a store, which can present challenges with transportation, and then face the high price of bottled water. Sweetened beverages are generally cheaper than bottled water, and consumers often decide between the two options based on price rather than nutritional information. Increasing the price of soda will not discourage consumers from buying soda until that becomes more expensive than bottled water, at which point legislators would have to confront what is one of the cornerstone issues in this debate: a limited access to potable water. This demonstrates how the disconnected policy makers can unintentionally misunderstand the roots of the problem and thus have misguided solutions.

The language in AB 669 does not specifically allocate the money toward communities that have the highest levels of obesity, especially among children. While the tax is intended and expected to disproportionately impact low-income communities, there is no provision in the bill to redirect the funds to address disproportionate health education needs in those low-income and minority communities. Knowing that this excise tax would disproportionately affect lower-income individuals and the majority of the spending should go toward programs that take place in low-income areas. If the one-cent per fluid ounce is applied to sugar-sweetened drinks then low-income and minority populations will pay a larger amount of their income toward this new tax, making it regressive. Since minority and low-income individuals would likely pay the lion's share of the tax, it is they who deserve to receive in their schools a

majority of the dispersed tax money towards physical education programs and nutritional classes. The same communities also have the highest percentages of adults and children who are obese (California Department of Public Health, 2010). The solution should address the structural issue of obesity; in California requires a careful examination of each socioeconomic group and their individual issues concerning problems like: food access, education, food security, and food cost. The bill had a lengthy list of groups and organizations in support, including Medical Associations, Public Health Groups, Education Groups, Schools and School Districts. Opponents of this bill included anti-tax groups and business interests of distributors, such as the California Teamsters Public Affairs Council and the Grocery Manufacturers Association.

Rubio SB471

SB471 was designed to "addresses obesity epidemic in California by requiring the California Department of Social Services to seek necessary federal approval to prohibit the purchase of sweetened beverages with food stamps" (Rubio, 2011.) The items included below illustrate the original sentiment of the bill; these articles were eventually amended from the bill, but certainly set the tone for the debate. In summary, they intended to prohibit the Restaurant Meals Program, which serves aged, disabled, or homeless people who have no means of food preparation. The original bill also aimed to restructure the SNAP program to mirror the Women, Infants, and Children (WIC) program; offering only "staple food items." It listed a number of unhealthy foods including, but not limited to, "(A) Sweetened beverages, including sodas. (B) Sweets, such as jello, candy, ice cream, pudding, popsicles, muffins, sweet rolls, cakes, cupcakes, pies, cobblers, pastries, and doughnuts. (C) Salty snack foods, such as corn-based salty

snacks, pretzels, party mix, popcorn, and potato chips."

The Rubio bill was aggressive, however, as in the Monning bill, it made exceptions for sugary milk products. Organizations supporting the bill included Lucile Packard Children's Hospital (LPCH) The California Dental Association (CDA), the Center for Oral Health, Saban Free Clinic (DBA the Los Angeles Free Clinic). These groups believe that discouraging the consumption of sweetened beverages for participants in the Cal Fresh program will not only provide nutritional benefits, but will also promote good oral health, especially in children. Organizations opposing the bill included the California Grocers Association (CGA), the California Retailers Association (CRA), and the California Nevada Soft Drink Association (CNSDA), which states that it does not believe that singling out one beverage or food is the right approach, or that restricting the use of Cal Fresh benefits is an effective means to address the problem of obesity. Though the legislative intent language claims that SNAP recipients purchase at least 40 percent more sugar-sweetened beverages than do other consumers, CNSDA points to an alternative source, the National Health and Nutrition Examination Survey, which "concluded that food stamp recipients are no more likely to consume soft drinks than higher income individuals, and are actually less likely to consume sweets and salty snacks." CRA states that, while it does not favor excluding any food or beverage, it believes federal conformity in SNAP will benefit beneficiaries and its members.

The County Welfare Directors Association (CWDA) states that this measure would start the state on a path toward banning food items that are deemed unhealthy, based on piecemeal legislation that does not address the underlying, often systemic reasons why low-income families experience obesity at higher rates than those in higher income brackets (letter of

oppose, 4/06/2011). CWDA also notes cost and enforceability concerns. The Grocery Manufacturers Association believes that comprehensive solutions that address consumer education and balancing calories in with calories out will be more effective at reducing obesity. The Western Center on Law and Poverty (WCLP) is concerned that this bill would result in differential treatment of impoverished Cal Fresh consumers, unduly complicate Cal Fresh redemption at point of sale, and increase negative stigma long associated with the program. WCLP also states that proposals to restrict consumer food choice in Cal Fresh also detract from meaningful efforts to increase participation in the program, and would perpetuate a negative stereotype by targeting low-income people. WCLP believes that obesity and related health problems are not caused by poor people making poor choices from the many they have available to them, they are caused by a food system that limits access to healthy foods for all people and especially those with the fewest resources (letter of opposition, . The California Hunger Action Coalition submitted a letter of opposition stating, "Simply entertaining this proposal can be harmful, as it perpetuates the stereotype that low-income people make worse decisions than people with higher incomes. People do not make good food choices because they are virtuous; they make them because they are fortunate to have the opportunity to make them" (3/24/2011).

Conservatives

Conservative policy makers want to cut monies to the poor. Their highly individualistic ideology does not align with the foundation of social responsibility that both liberal and public health policy perspectives share. Their main argument is that costly programs --such as SNAP-- play a primary role in our low-income population's obesity epidemic. Moreover,

the low-income population participating in SNAP is also the likely recipients of government-funded healthcare; the cost becomes larger due to the high cost of maintaining an obese person's health. Douglas Besharov argues, "…overweight people are three times more likely to have coronary artery disease, two to six times more likely to develop high blood pressure, more than three times as likely to develop type 2 diabetes" (2003, p.3). There are tremendous side effects involved with obesity; however, Besharov is a classic welfare reformist, and postulating the common paternalistic conservative perspective. Conservative economist, politicians, and policy makers' goal is to bring down the discretionary spending within the welfare system. Mary Bellamy (Principal Consultant- California Legislature, Assembly Republican Caucus) explain the she would like to see SNAP modeled after the "…successful WIC (Women, Infant, and Children) program…that a more strict set of parameters are not necessarily bad" (interview, 7/20/2011). Joe Parra, the Principal Consultant at the Senate Republican Caucus's Health and Human Services Committee agrees. Due to their anti-tax foundation, conservatives will oppose a bill like AB669 because the cost of restructuring would increase the amount passed on to consumers, to compensate for the loss of time, labor an operational costs (California Department of Finance, 2011).

Liberals

This group of liberal policy advocates is comprised of many subcategories; Anti-Hunger Advocates, Poverty Advocates, Welfare Rights Groups, Food Banks…and some legislators. When trying to reach a more conservative legislative aid on the issue of limiting the range of purchasing power among Cal Fresh (food stamp) recipients, terms like "consumer freedom" and "individual choice" would be used often

to frame up the argument and appeal to that person's value set. The article clarifies that sophisticated persons are not unaffected by framing and that framing does not require the recipient to accept the message or assertion, unlike persuasion. They argue that the effect of framing does not come from new information, but rather the emphasis on a particular area of the issue (Nelson, Oxley & Clawson, p. 233). Liberal advocates attempt to humanize the Cal Fresh (SNAP) recipient, the goal being to debunk the common misconception that these individuals are lazy and unworthy strangers. Bring in recipients to testify at committee, from a conservative committee member's district, is a tactic used. The hope is that the conservative member will see something familiar in the person and feel the social pressure that one feels when publicly confronted. If that doesn't work, then they have been known to point out the hypocrisy involved in the legislative process Joel Berg, Executive Director, of the New York City Coalition against Hunger explains: "These people work for the government and I ask them if they think that the soda machines should be taken out of their buildings, and they say "oh no, that is different…" Well how is that different? We are subsidizing their soda intake and pay for their medical care, so how is that different? God forbid that poor people be able to experience pleasure" (7/14/2011, interview via Skype).

Another point of reference for liberal food policy groups is the issue of food access and the effects of deep poverty. The World Health Organization defines food access as "having sufficient resources to obtain appropriate foods for a nutritious diet" (1996). Keisha Nzewi, Advocacy Manager, at the Alameda County Food Bank explains that, "So much of our environment: you can only eat what you have access to, and you only eat what you know. What is the likelihood of leaving deep poverty? If there isn't a life changing event or experience,

good food choices are unlikely to be available and/or known. Many people live off of shelf-stable and highly salted foods-that's it. They make the best out of what they have" (7/12/2011, interview). Jessica Bartholow, Legislative Advocate, at the Western Center on Law and Poverty describes the many environmental factors that contribute to the higher rate of obesity among people of low socio-economic status, "Low-income people face: lack of sleep, unsafe communities that do not support outdoor activities, at work they have less agency and higher stress, there is often a lack of transportation in many low-income neighborhoods, and a lack food access which affects a geographically high rate of obesity" (7/13/2011, interview).

Public Health Perspective

Public Health groups take a different approach that I like to think of as "maternalistic," more tactful, and not nearly as hard lined as the conservatives as well as for an entirely different set of reasons --like your mother-- they want what is best for you. Often public health folks will support the idea of restrictions, and also support a hefty sales tax. During my interview with Harold Goldstein, Executive Director, California Center for Public Health Advocacy I asked him about the move to limit the purchasing scope of SNAP recipients, he responded with a reference to SB 471, "I don't think we want to say that: low-income kids shouldn't be having potato chips. I think that is not a skillful use of public policy. But I do think that for items that have no nutritional value what-so-ever, and that are not a part of a healthy diet (restricting) would be useful" (interview, 7/27/2011).

In her article "Halting the Obesity Epidemic: A Public Health Policy Approach," Marion Nestle explains that the simple idea of energy in/energy out is not so simple, and has been assigned nearly 40 different policy guidelines by governmental

agencies and health organizations to encourage prevention through diet and exercise (2003). In her April 16th 2011 blog post she retracts her opposition to the soda ban writing: "I started out deeply uncomfortable with the idea of the soda ban but I now support it. The discomfort came from my general discomfort with telling people what I think they should be eating. I never comment on what individuals eat (and I hope you won't comment on what I eat). My work deals with nutrition for populations, not necessarily individuals. So banning sodas at first seemed to me to be too personal an approach" (2011). Something that came up a lot when reading about and discussing the "limit of use" issue with public health advocates was an air of cautious indecision which George Manalo-LeClair, Senior Director of Legislation, of California Food Policy Advocates touches on in our interview: "So we struggle with that here organizationally, we continue to oppose the legislation, however we continue to have discussions upon discussions about what limitations would mean for the program, but also for us as an organization…It is tough, there are definitely issues of paternalism, lack of choice, at the same time we do have aspirations of the program and think that it should do more. There are people that don't want to touch the idea, then there are people that feel we should certainly explore it, but all of us feel really comfortable with the incentive idea and that fits better with how we view the program as income support and that is how the program has been successful and provided resources to help people stretch their family budget" (7/19/2011).

Alliances: Sipping Soda with Strange Bedfellows

What became clear was the great deal of strategy that was necessary for success and the importance of coalition building. I was initially confused by what appeared to be strange bedfellows. Throughout history, and particularly in the midst of this economic recession, the poor and any related programs are the first to be cut. The economic constraints pertaining to budgetary decision making and the very vulnerable discretionary funds are the only available monies law makers are able to cut; these cuts most always has the largest effect on both monetary assistance and in-kind programs for the poor. It is tremendously difficult to organize such a largely diverse, economically weak, and geographically vast population such as low-income citizens; the responsibility is then placed in the lap of a small group of poverty policy advocates. Framing is an important tool when coalition building. The various ways that one might frame a topic can expand the breadth of power immensely, and is absolutely crucial when advocating for a group such as the poor who have little ability to mobilize.

That said, testimony is not enough, and that is where the ability to create unconventional alliances really assists in the success of a campaign. As a bill is given careful consideration, the group brainstorms approaches to aid in reaching their goals. The list of supporters and opponents offers a clear preview as to what kind of groups will be players, this is an opportunity to frame out an argument to include common and complimentary language to match with each group as they may oppose or support a bill for very different reasons. It is common that a coalition is built with several lobbyist and advocacy groups that have drastically different ends, but they are able to benefit from one another on a specific project. For example, at the Western Center, while working on EBT limit of use issue/ SB 471, many of the grocer, retailer, and distributor groups were aligned with poverty advocates in opposition of the bill; as the poverty groups were advocating for SNAP and Cal Works recipient rights, they were

working to maintain their clients profit margins pertaining the Restaurant Meals Program in danger of being cut; while the conservative and public health groups, for different motivations, leaned toward an eventual restructuring of SNAP to look more like WIC. It is these strategic alliances that represent a viable and beneficial social capital that Koka and Prescott argue for in their article (2002, p.812). The Monning bill (AB 669) had less opposition from the seemingly united left, but faced heavy criticism from tax, retailers, and restaurant industry groups.

Conclusion

The two bills are very different, the primary difference between the two bills being that "AB 669 (Monning) was a policy tool to attack an industry and SB 471 (Rubio) was looking at; individual behavior, product, and nutrition through behavioral and economic policy" (Bartholow, interview, 07/12/2011). Both bills are now dead; Monning's AB 669 stalled in Assembly Revenue and Taxation, and Rubio's SB 471 "missed the date" for being made into a two-year bill. Rubio would have had to struggle to narrow the scope of his bill and rekindle relationships with welfare-rights and hunger advocates to be successful. Monning's bill had less of a chance, because of the economic and political climates- the Republican caucus would have never voted for a piece of legislation that promotes taxation. The issue of obesity and supplemental food programs is emotionally charged-- touching on the ideas of basic needs and human rights, personal choice, and classism. A sociological perspective offers a lens for viewing the contemporary dispute about obesity, nutrition, and the welfare state. California as a state is large and diverse both in geography and population; any problem that the state is experiencing is applicable to the national level of legislative attempts to tackle this difficult issues.

Works Cited

1. *Usda.gov.* (2011). Retrieved from http://www.fns.usda.gov/pd/34SNAPmonthly.htm
2. http://www.fns.usda.gov/snap/rules/Legislation/about.htm
3. University of Michigan Library Collection, Committee of Agriculture, Nutrition, and Forestry. United States Senate. April 1985. U.S Government Printing Office, Washington.
4. Oliver, J. Eric, Fat Politics: The Real Story Behind America's Obesity Epidemic…..
5. Nestle, Support for Soda Ban. http://www.foodpolitics.com/2011/04/some-thoughts-on-not-using-food-stamps-for-sodas/
6. California Department of Finance: http://www.dof.ca.gov/HTML/FS_DATA/LatestEconData/FS_Forecasts.htm
7. Center for Consumer Freedom. http://www.consumerfreedom.com/pressRelease_detail.cfm/r/346-consumer-group-taxing-soda-isnt-going-to-solve-californias-health-or-debt-woes
8. http://asmdc.org/members/a27/ab-669?layout=item
9. http://leginfo.ca.gov/pub/11-12/bill/asm/ab_0651-0700/ab_669_cfa_20110429_120609_asm_comm.html
10. California Department of Public Health: http://www.cdph.ca.gov/data/indicators/goals/Documents/Objective1903b.pdf
11. Sacramento Bee: http://www.modbee.com/2010/09/01/1320478/stanislaus-county-struggles-with.html
12. Rubio on SB471 http://sd16.senate.ca.gov/senate/legislation

13. Rookie lawmaker takes legislative odyssey with food bill. http://www.ongo.com/v/899488/-1/42FFED394E95682E/rookie-lawmaker-takes-legislative-odyssey-with-food-bill

14. Besharov. 2003. Growing Overweight and Obesity in America: The Potential Role of Federal Nutrition Programs. Universtiy of Maryland School of Public Affairs. Testimony before the Committee on Agriculture, Nutrition, and Forestry. p. 1-9.

15. Nestle M. 2003. Food politics: how the food industry influences nutrition and health. Berkeley (CA): University of California Press.

16. Engelhard CL, Garson AJ, Dorn S. 2009. Reducing obesity: policy strategies from the tobacco wars. Washington (DC): Urban Institute; 2009 Jul.

17. Nelson, T. E., Oxley, Z. M., & Clawson, R. A. (1997). Toward a Psychology of Framing Effects. *Political Behavior, 19*(3), 221-246.

18. World Health Organization. Definition of Food Policy: http://www.who.int/trade/glossary/story028/en/

19. Washington Post, poverty statistics: http://www.washingtonpost.com/wp-dyn/content/article/2010/09/16/AR2010091602698.html

20. Dairy Lobbying efforts: http://www.agweb.com/article/california_fights_back/

21. Caroline Danielson and Jacob Alex Klerman, California's Food Stamp Program: Participation and Cost Challenges for the State, September 2011, Public Policy Institute of California.

Individual Factors Predicting Engagement in Delinquent Activity

Maricela Plascencia

Human & Community Development Department
University of California, Davis

Abstract

Interest in the persistent problem of juvenile delinquency has motivated researchers to identify mechanisms promoting or deterring juveniles' delinquent behavior. However, there are few studies that have explained these mechanisms in rural adolescents. Emerging research suggests positive school engagement and extra-curricular activities lowers juveniles' illegal behavior. Past research finds mixed results regarding the number of hours worked at a job and risk for delinquent activities. Using secondary data, the current study examines a sample of 407 ninth-graders from the rural Midwest, and their patterns of self-reported delinquent activities. Findings indicate that sport participation deters adolescents from delinquent behavior but more hours worked at a job promote delinquent behavior. Thus, an environment where adolescents engage in pro-social behavior appears to be protective against the risk for deviant behavior.

Introduction

Delinquency research has led sociologists, psychologists, and criminologists, among others, to understand the underlying mechanisms that either promote or deter adolescents into illegal behavior (Gottfredson and Hirshi, 1990). It is important to discover why a juvenile offends because of the burden it carries on society. According to Moffitt (1993), adolescence is a time where aggressive behavior and delinquent acts are most prominent. Moffitt found that those who begin offending as an adolescent have a greater possibility to offend into adulthood, are more likely to not finish high school, and are more likely to consume greater quantities of illegal substances.

In order to explain the peak in delinquency during the adolescent years, research has identified different social influences for the miscreant behavior. Conger's (1994) research on parent-child interaction found that coercive family-child interaction promotes an increase in adolescent rates of aggression and antisocial behavior.

Research concerning sibling dyads (Conger and Conger, 1994) indicates older siblings to be more aggressive than younger ones, and if a delinquent tendency is seen in the older sibling, a parallel drift will be seen in the younger sibling. In addition, Farrington (2002) found that there is a high likelihood of arrest if another family member has been arrested as well. Although family mechanisms may contribute to juvenile delinquency, research has also found community and social factors as contributors to adolescent misbehavior (Conger, 1994).

Differential Association Theory (Sutherland, 1978), elucidates the impact of peer relations on delinquent behavior, and is constructed on the notion that delinquent behavior is learned through peer interactions. Differential Association asserts that deviant peers act as a model that can increase criminal activity in a less delinquent adolescent. Hudson (2004) posited that higher relational scores with delinquent peers increased delinquent behaviors, even after controlling for the

individuals family social economic status (SES) and family cohesion. Thus, negative associations with delinquent peers appear to exacerbate adolescent delinquency. However, peer association is only one plausible explanation for adolescent offending, in addition, some research suggests that sports and school activities may also be counterproductive for the adolescent.

Research posits that engagement in certain activities can be a factor in explaining delinquent behavior. Over the years the correlation between sports and delinquent engagement has been both inconsistent and the meaning has been open to interpretation. The 1970's were marked as a revolutionary time for sports research where sociologists began assessing the idea that sports participation may serve as a deterrent from crime and thus began implementing "sport and recreation-based social interventions and crime prevention programs" (Hartmann, 2007, pg. 486). However, in the 1980's the salutary effects of sports failed to be found in research investigations, but according to Hartmann the "shortcomings" (pg. 486) were a result of problematic cross-sectional data. Recent research on sports engagement and delinquency, although still with modest results, has counter-argued the salutary effects of sports with findings that suggest those adolescents who engage in sports trend towards more delinquency and are more prone to alcohol use and abuse (Gardner, 2009). Conversely, Fauth, Roth, & Brooks-Gunn (2007) reported participation in organized activities actually decreases delinquency, however this same association is not seen for urban adolescents. Accounting for factors such as sports, extra-curricular, or after school activities, and work is important because according to Gardner and colleagues (2009), criminal activity in juveniles is higher during the hours of 3 to 6 pm, the

lapse between the end of school and when parents return home.

Organized activities such as community service or religious involvement provide adolescents with positive influences (Faugh et al., 2007). Research on urban adolescents indicated that those who engaged in organized and more pro-social activities such as sports actually reported less truancy, physical aggression and vandalism (Burton and Marshall, 2005, Gardner, 2009). Gardner's research places prosocial engagement and sports in a continuum, in which adolescents who participate in the community or non-sports after school activities show lower delinquency levels than adolescents who engage in sports. Adolescents who neither engage in sports nor activities show the highest levels of delinquent activity overall. In regards to work and the amount of hours worked, mixed results have been found (Poole, 1986) with research either reporting work as productive or as unproductive. The Committee on National Health and Safety (1998) published a book on the implications of child labor, in which they reject the illusions of child labor. The authors state that one of benefits of working in adolescence is the opportunity to develop social skills or social competence. Since adolescence is a time of self-reconstruction, experience may aid the adolescent to "become personally, interpersonally, and socially mature" (Committee on Health and Safety, 1998). Yet, the authors make a vital point when addressing 'selection effects,' in which they distinguish personality incompatibilities for adolescents who choose to work compared to those who don't, and those who choose to work more hours compared to those who work shorter hours. The authors suggest that group discrepancy may be due to the past academic performance, family's income, and/or unique aspirations, along with other variables. Yet, further research in regards to all components of adolescent work is in

exigency, essentially because it is still unclear if working mitigates or exacerbates--or can be the perpetrator--of delinquency in adolescents.

Guided by past research, the current study investigated the association between individual factors such as working in paid jobs, engaging in sports and/or in extra-curricular and involvement in delinquent activities. The following research questions were used to guide the investigation: 1.) Participation in sports serves as a protective factor against delinquency. 2.) Working more hours is associated with higher engagement in delinquent activity. 3.) Engaging in extra-curricular (non-sport) activities will deter adolescents from delinquent behavior.

We predicted that both sports and extra-curricular activities will serve as a protective factor against delinquency while having a job and working longer hours would be associated with more deviant behavior. Furthermore, most of the above research was done with urban adolescents, in schools that are both funded and administered different than in rural settings. Hence, further investigation needs to be done to discern if sports, activities and work create a distinct influence in rural adolescents.

Method

A secondary data set (Iowa Youth and Families Project) consisting of 451 families from the rural Midwest was used for our current study (Conger and Conger, 2002). The IYFP recruited 451 nuclear families that included two biological parents, a seventh grader, and a biological sibling within a four year age range. Participants were recruited from all public and private schools in eight-counties from north central rural Iowa. The IYFP, which began in 1989 during Iowa's agricultural economic downturn, is still collecting data, which now includes three generations. However, for the purpose of this study, the data

analyzed is from 1991 when the target adolescents, and is comprised of 407 adolescents. The gender breakdown consisted of 218 girls and 189 boys, and adolescents were all monetarily compensated for their time.

Participants

Participants were both male and female around the age of 15 and 16 from European descent. We used this dataset in particular because the transition from middle school to high school is a time when teenagers experience most stress while identifying new schools, friends and self-identity. Hence, it is a time of self-analyzing and experimenting.

Procedures: Families were interviewed on an annual basis from 1989 to 1992, and visits were conducted twice a year about two weeks apart. The first visit consisted of the 4 family members each filling out questionnaires. And the second family visit involved videotaping different family interactions. The first task included asking questions regarding typical family interactions and activities, such as parenting and household chores. The second recorded task included family member resolving issues or a conflict. Only questionnaire data were used for these analyses. Family members were compensated about $10.00 per hour.

Measures

Our investigation was specifically targeted towards ninth grade student's participation in sports, activities and paid jobs, which became the independent variables and its association with delinquency, which became the dependent variable. The IYFP 1991 questionnaire was used for the results reported here, and contained the following measures:

Delinquency. Delinquency was measured using a 23 question self-reported questionnaire. Participants indicated on a scale from 0 (never) to 6 or more times if they have committed crimes such as,

cutting school or using a weapon to get money, all within the past 12 months.

Sports. Participants were asked to indicate any school they have played or will play during the school year. Respondents were able to indicate up to seven different sports.

Activities. Participants were asked to indicate school activities or offices held in which they have participated or would participate during the current school. Participants could select up to seven different school activities such as counseling, academic (honor society), elected officer (class officer), art (band, drama, yearbook), etc. In addition, participants on a separate measure indicated participation in community activities, in which participants were able to indicate up to seven activities from a list that included, church activities, local community service, nationwide community service, etc. Finally, participants were asked to indicate if they participated or will participate in activities outside of school during weekends or weekdays. From this original variable we composed a new variable that consisted of only prosocial activities, so we removed hanging out with friends, doing nothing.

Work. Work was measured using two questions. First participants indicated either yes or no, if they had held a job during the past year, such as babysitting, part-time job or any other ways in which they have earned money, such as raking leaves. If participants indicated yes, they were then asked to specify how many hours they worked on a given week. Any job worked during the summer was coded separately.

Results

We analyzed our data with least squares regression analysis to examine the association between delinquency and our proposed individual predictors such as sports, activities and working. In the first regression equation examining the effect of sports (M=.864, SD= .344) participation on delinquency (M=.015, SD=.121), the coefficient is significant. That is, there was a significant decrease in delinquency when participating in sports (b= -.130, t= -2.629). Results are shown in Table 1. Next we examined the effects of having a job (M= .344, SD= .476) on risk for delinquency (M= .017, SD= .130). There was no significant effect of having a paid job on delinquency (t= 1.277, p<.202); however there was a significant association between hours worked at a job (M= 9.43, SD=8.53) and delinquency (M=.029, SD= .169). This indicates that for every unit that job hours went up delinquency went up .251 units (t= 3.015). Hence, the best predictor of delinquency was not necessarily having a job, but the amount of hours worked at a job (see Table 2). Participation in community activities (M= .539, SD= .499), in-school activities (M= .769, SD= .422), and out-of school activities (M=.962, SD= .193) were entered as a block into a regression equation; none of these three indicators were a significant predictor of delinquency (M= .017, SD= .130). Table 3.

Table 1
Standardized Regression Coefficient: Predicting Adolescent Delinquency from Sports (n= 403)

Predictor	β	SE	t	b	R
Sports	-.046	.017	-2.629*	-.130	.130

*Note. *p < .05*

Table 2
Standardized Regression Coefficient: Predicting Adolescent Delinquency from Working (n= 137)

Predictor	β	SE	t	b	R
Job	.017	.014	1.277	.063	.063
Job Hours	.005	.002	3.015*	.251	.251

*Note. *p < .05*

Table 3
Standardized Regression Coefficient: Predicting Adolescent Delinquency from activities (n= 390)

Predictor	β	SE	t	b	R
Activity	.023	.016	1.44	.072	.072
Commact	-.008	.013	-.580	-.029	.029
Day-end act.	.018	.033	.539	.027	.027

Note. *p < .05

Activity = in school activities (e.g. high school football)
Commact = community activities (e.g. church volunteer)
Day-end act. = prosocial activities outside of high school during weekdays and weekends (e.g. art school)

Discussion

This paper examined activities common to adolescents and determined if they had an effect on engagement in delinquency behaviors. Overall we found a mixed pattern of association between activities, such as sports participation, extracurricular activities, and work, on delinquent behaviors. It is important to understand the mechanisms that draw adolescents towards deviant behavior engagement since these behaviors can be detrimental to the individual as well as society (Moffit, 1993). Recent research on sports suggests the idea that engaging in sports creates a conduit to more deviant peers, higher alcohol consumption and greater deviant behavior (Gardner, 2009). Thus, sports may serve as a negative environment models a context of misdeemed behavior. However, our finding does not support this idea. One possible explanation for this difference is that our rural sample creates a much different milieu compared to more commonly used urban/suburban samples. In rural settings most school activities are run by parents, hence at times the coaches for the baseball or football team are the student's own parent. And in settings with small populations, such as our sample, both school and family affairs are intertwined, reinforcing a more family-oriented environment. According to Burton (2005) social bonding with family and prosocial peers reduces the risk for problem behavior. Thus, a rural environment may promote more prosocial bonds with peers under the vigilant eye of the coach/parent. Furthermore, because of the long hours and rigorous regime required by some sports, students may have limited time and/or no energy to be involved in risky behavior. In addition to sports, our results also indicated that extracurricular activities

were not a significant predictor of delinquent behavior. This is consistent with previous research, which has suggested that extra-curricular activities tend to promote or enhance prosocial environments for the adolescent (Faugh et al., 2007). This finding supports our hypothesis that activity participation may serve as a protective factor against risky behavior. This result may be due, in part, to the fact that those students participating in prosocial activities such participating in science camp or volunteering in churches may already be less delinquent than the usual adolescent, so participating in these activities would not have increased the risk of delinquent activity.

Another non-significant predictor of deviant or delinquent behavior was having a job. However, working more hours, as previously hypothesized, did predict to greater amounts of delinquent activity. Mixed findings on the topic suggest that perhaps the analysis of job variables needs to be split into various components (e.g. job type and hours worked) to fully understand the consequences of the adolescent work experience (Mortimer, Finch, Ryu, & Shanahan, 1996). The Committee for Health and Safety (1998) discussed the possibility of selection effects, so the difference between having a job and hours worked at the job may be due to the interaction between the individual and the context. So, adolescents who work more hours at a job have more time to be affected or influenced by the work milieu. Specifically adolescents who work longer hours in a similar-age peer environment, such as fast food or retail work, may be exposed to older peers who construct a bridge between the adolescent and drugs and alcohol. As Sutherland's (1978) differential association theory indicates, more time spent with peers creates stronger social bonds, even if the peer engages in delinquent behaviors.

Implications and Future Research

Research on individual factors such as sport participation and working at paid jobs needs further attention to understand their individual contributions to the risk for delinquent engagement. Future studies on the type of work or labor done at a paid job may indicate if certain job types help explain differences between those who engage in delinquency and those who not. For example, adolescents holding white collar or managerial jobs may have less risk for negative behavior compared to adolescents who work entry level clerical jobs or service jobs such as at a gas station or mall store. In regards to sports, we ask the question, are adolescents who engage in sports that require physical contact and violent game play more prone to delinquency? For example, is football or rugby more strongly related to delinquency than badminton or tennis?

This study was limited by the use of self report cross-sectional data, thus data collected at multiple points in time would be more informative. For example, we could address the question if the results were due to a real correlation or if the work findings were spurious, e.g. if the adolescent was already delinquent and then began to work. Furthermore, the sample was comprised of white adolescents from a rural midwestern state, and these results need to be replicated with more diverse samples with regard to ethnicity, culture, community size, and region of the country. Despite these limitations, these results add to our knowledge about factors, which may contribute to adolescent risk for delinquency. In addition, we propose that researchers should examine factors, which may influence both delinquent and possible predictors. For example, are there personality traits or societal factors, which affect selection into particular work-types and engagement in delinquency? Another future study might examine leadership positions in either sports, outside activities

or at work, and see if becoming captain, manager, or president may give adolescents an extra buffer against delinquent participation. Given the potential long-term costs of delinquent activities to individuals and society, it is a worthwhile endeavor to understand factors, which encourage adolescents to engage in prosocial, as opposed to delinquent, behaviors.

References

1. Burton, J.M., & Marshall, L.A. (2005). Protective factors for youth considered at risk of criminal behaviour: Does participation in extracurricular activities help?. *Criminal Behaviour and Mental Health.* 15, 46-64.
2. Conger, K. J., & Conger, R. D. (1994). Differential parenting and change in sibling differences in delinquency [special issue on siblings]. *Journal of Family Psychology.* 8, 287-302.
3. Conger, R.D., & Conger, K.J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family.* 64(2), 361-373
4. Conger, R. D., Ge, X., Elder, G. H., & Lorenz, F. O. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development.* 65, 541 – 561.
5. Farrington, D. P., Jollifee, D., Loeber, R., Stouthamer-Loeber, M., & Kalb, L. M. (2002) The concentration of offenders in families, and family criminality in the prediction of boys' delinquency. *Journal of Adolescence,* 24, 579-596.
6. Fauth, C.F., Roth, J.L., & Brooks-Gunn, J. (2007). Does the neighborhood context alter the link between youth's afterschool time activities and developmental outcomes? A multilevel analysis. *Developmental Psychology,* 43(3), 760-777.
7. Gardner, M., Roth, J., & Brooks-Gunn, J. 2009. Sports participation and juvenile delinquency: The role of the peer context among adolescent boys and girls with varied histories of problem behavior. *American Psychological Association.* 45 (2), 341-353.
8. Gottfredson, M. R., & Hirschi, T. (1990). Families and adolecents: A review of the 1980s. *Journal of Marriage and the Family,* 52, 941-958.
9. Hartmann, D., & Massoglia, M. (2007). Reassessing the relationship between high school sports participation and deviance: Evidence of enduring, bifurcated effects. *The Sociological Quarterly.* 48 (3), 485-505.
10. Hudson, K.L. (2004). The influence of family cohesion, academic performance, and deviant peer involvement on adolescent delinquent behavior: A social psychological examination. Dissertation Abstracts International Section A: Humanities and Social Sciences. 65(2-A), pp. 419
11. Miller, W.B. (1958). Lower class culture as a generating milieu of gang delinquency. *Journal of Social Issues.* 14, 5-19.
12. Minnet, A. M., Vandell, D. L., & Santrock, J. W. (1983). The effects of sibling status on sibling interaction: Influence of birth order, age spacing, sex of child, and sex of sibling. *Child Development.* 54, 1064-1072.
13. Mortimer, J T., Finch, M. D., Ryu, S., & Shanahan, M. J. (1996). The effects of work intensity on adolescent mental health, achievement, and behavioral adjustment: New evidence from a prospective study. *Child Development,* 67(3), 1243-1261.
14. Poole, M.E., & Cooney, G.H. (1986). Work and leisure relationships: An exploration of life possibilities during adolescence. *Journal of Youth and Adolescence.* 15 (6), 475-486.
15. Sutherland, E. H., & Cressey, D. R. (1978). *Criminology.* 10th (Eds.) Philadelphia: Lippincott.

16. Williams, T.W., Conger, K.J., & Blozis, S.A. (2007). The development of interpersonal aggression during adolescence: The importance of parents, siblings, and family economics. *Child Development.* 78 (5), 1526 − 1542.

17. Work's Effects on Children and Adolescents (1998). In *Committee on the Health and Safety Implications of Child Labor, National Research Council and Institute of Medicine.* Retrieved June 20, 2010, from www.nap.edu/4 Work's Effects on Children and Adolescents (110-140)

Clashing Temporalities: How Institutional Practices Construct Sovereignty

Kali Rubaii

A systematized time regime, like that of the train station, has the power to include or exclude, to bypass or take up different actors in its metronomic structures of time. The large clock in the center of the station determines who is late, who begins to worry, and how departures and arrivals take place. The train station presumes movement for travelers, represents employment for others, and offers refuge to yet others. The commuter is taken up in the stream of this temporality, while the homeless woman will be permanently excluded from it. The train station plays multiple roles in its totality, as timekeeper, promise maker, transient pause, shelter, etc. The station itself may represent a fermata in one person's life, or a quagmire in another's. When I first arrived in Amman, Jordan in 2009, an Iraqi refugee named Najlaa met me at the airport and escorted me to my new home, a dingy, underground flat in AlHashmi Shmali, one of the poorest refugee neighborhoods in the city. She described Amman as "the bus station of her destiny," and it was not until I grew to know her and others in her situation better that I understood: to her this 'bus station' was not the commuters' station, but the stagnant, exclusionary source of shelter that a homeless woman in the train station knows as 'her station.' One place, it seems, hosts layers of temporalities and purposes, multiple rhythms and desires. These multiplicities make contact with each other, enforce one another, and generate differences. The bus station Najlaa spoke of is not simply the physical city of Amman, but the network of human rights institutions (and their employees) with whom she interacts. The relationship between refugee families and the clustered network of United Nations High Commissioner for Refugees (UNHCR) and non-governmental institutions (a network I refer to as the human rights institutional network) was both antagonistic and mutually dependent. While racism, sexism, classism, distrust, and competing interests were certainly sources of tension, the most perpetual source of miscommunication was what I call clashing temporalities. Through the lens of temporality, we can understand how human rights institutions build their own systems of control, and how Iraqi refugees perceive, navigate and contest these limits. What does it feel like to live 'outside of time'? What does it mean to exist and interact at the seams of two different temporalities? How and why are these temporalities produced?

The Unclear Role of the Human Rights Institutional Network

Legally, the human rights institutional network is responsible for *providing protection* to Iraqi refugees. The term *providing protection* is loose and resembles the underlying mandate of a nation-state. For the most part, human rights workers in Amman are dedicated to carrying out their mandate to 'protect' refugees and meet their basic needs. What precisely are the details of their mandate and how is this mandate put into practiced? As citizens of the Unites States know, protection, or 'security' as it is called in non-refugee settings, comes at a cost, usually paid in individual rights. Providing protection often leads to other activities that make such a provision possible, like surveillance, discipline, and the determination of who is included in or excluded from the realm of protection. This project of determining and protecting refugees quickly slides into a project of sovereignty: human rights institutions find themselves making state-like determinations in the absence of a state power, thus not only governing Iraqi refugees, but determining their very

livelihoods. By deciding who counts as a refugee and who does not, and what level of protection a refugee deserves, the human rights institutional network determines who falls under its 'jurisdiction' and who does not, who is a 'citizen' of humanity and who is not. I will borrow one of Mbembe's many definitions of sovereignty: "sovereignty means the capacity to define who matters and who does not, who is disposable and who is not" (27). In the case of refugeeness, however, this distinction is derived from a unique source predicated on certain "barrenesses" of life. Citizenship to the human rights institutional network requires an *absence* of protection by some other sovereign, usually the state. Therefore, in order to seek protection from the human rights institutions a refugee must demonstrate his bareness of life; his exclusion from the resources and opportunities afford all but the bare minimum (Petryna). This resonates ironically with the notion of how sovereignty works: if the UNHCR determines who is disposable and who is not (who deserves protection and who does not), it does so by using a previous state of bareness as its rubric. In order to be taken under the UNHCR's wing of protection *from* bare life, a refugee must prove, and continue to prove, a state of bareness in the first place.

In this way, the human rights institutional network operates as Foucault describes institutions in *Madness and Civilization*: salvation from exclusion is by exclusion. However, this exclusion is not based on spatial barriers, but instead by mechanisms of temporal control. The refugees I worked with filled all categories of class, faith, age, and gender. While certain neighborhoods were more highly populated by certain social and ethnic groups, many of the refugee families I worked with were actually next-door neighbors with the human rights workers I interviewed. Because Iraqi refugees in Amman are not contained in a camp setting, but live throughout the city, it struck me as strange that the expected social connectivities were not taking place: Iraqi doctors were not interacting with European and Jordanian doctors, and Iraqi teachers were not interacting with UN or Jordanian teachers, etc. For all the talk of 'participation' as a major theme in the human rights institutional network, refugees were being systematically excluded from the organizations, professions, and communities meant to save them through a kind of temporal apartheid. The creation and implementation of a time regime that governs refugeeness, but also reproduces it, serves as this mechanism of control and separation. While the human rights institutional network was highly effective in performing its mandated tasks and keeping chosen refugees physically alive, it was also compelled to serve an unwritten mandate of sovereignty, functioning to govern through temporality. The affect is that these families remain barely alive.

When refugees articulated their state of existence to me, they described extreme boredom, gestured to the bareness of their walls, the lack of cultural artifacts in their homes, emotional trauma and fear to go outside, and the inability to know their own futures or make plans. Often a frustrated interlocutor would punctuate this litany of descriptors by waving her arms and saying, "We are refugees!" The state of refugeeness is always juxtaposed to a time or place where refugeeness was not: "back in Iraq when we had a reason to wake up every morning", or "not like the Jordanian children who can go to school and prepare for the future." Refugees' salvation from refugeeness is predicated on the fact that they have been excluded from other realities, other possible trajectories of life and must remain excluded in order to qualify for salvation. What does protection from the human rights network actually look like? Is it possible for an institution to

offer protection without also implementing governance practices? Is it possible to interface in an economy of aid and need without insisting on and perpetrating difference? In spite of the best intentions by human rights workers, my ethnographic work with Iraqi refugees in Amman, Jordan reveals how the project of governmentality and sovereignty compounds the suffering of refugees, forcing them into a state of "temporal poverty" and constructing time zones that did not exist before. I will note here that it is difficult to determine how violence and exodus (the experience that brought Iraqi refugees to Jordan in the first place) have impacted temporality for the families I worked with. This paper is meant to highlight the *constructed* systems of temporality implemented through institutions of time and the explicit time regime produced by the human right institutional network.

States of Temporality at the Seam of 'Separate' Worlds

Refugees and human rights workers move at different rhythms: the worlds these rhythms create are in many way incommensurable. How this difference has come to be, however, is by no means a 'natural' phenomenon, but instead a highly conscious attempt at governmentality. The most obvious grooves in temporal dissonance between human rights institutions and Iraqis are those of clock and calendar time. In AlHasmi Shmali, the neighborhood I lived in, time is marked by the call to prayer, which rises from the minarets five times a day: Muslim or not, one's day is structured by this public life rhythm. The daily rhythm of housework, gatherings, and meetings revolves around prayer breaks, and the weekdays operate with Friday and Sunday as holidays. The Islamic calendar, the first year of which is marked by *hijrah*, the exodus of Muslims from Mecca to Medina, is painted along the walls on sidewalks all over Amman. Hijrah-

time is stamped with moving footprints, displacement, and diaspora, a somewhat comforting and legitimizing notion to refugees in some cases. According to Najlaa, who picked me up at the airport, she is repeating history; an "heiress of seven civilizations" she is making her exodus from the heartland of the Middle East to the "periphery of the world." It is 1431, but it is also 2009. Najlaa's sense of being and destiny is sandwiched between two calendars, the second of which is Gregorian, visible on the desks of every human rights worker in Amman. It is by this calendar, which carefully notes Muslim holidays in its margins, that human rights workers schedule appointments with refugees like Najlaa, and plan their six-month funding cycles. It is by clock time that they set their alarms for work (9am), and by clock time that they know when to break for lunch (noon) or leave for the evening (5 pm). Every refugee I lived with is adept at navigating both structures of time, since they must live in the social world of their neighborhood, while also making appointments within the human right institutional network. However, human rights workers are perpetually perplexed by what they called refugee-time, or Arab-time. (I will note here that Arab-time, which is a life rhythm familiar to anyone who has lived in the Middle East, is indeed a cultural phenomenon that overlaps with refugee-time, but ought not be conflated with it.) The irony, as I will show later, is that these institutions partially *produce* refugee time. Refugee-time is the source of complaint and confusion for human rights workers: refugees are perceived as both "always late" but also "too impatient". Iraqis complain equally, not about institution-time, but about workers' obliviousness and insensitivity to the world in which they live. Ahmed, a 41 year old living with his two brothers and his mother, expressed that UNHCR employees "know nothing about what it is to wait. They know nothing

about our futures, because they *have* futures!" To Iraqis, their lateness and impatience are both justified: lateness can be explained by the elderly, by traumas and fears about going into public, and the by failure of institutions to inform families about meeting times early enough. Impatience can be explained by a burning desire to move out of 'refugeeness' and to know what to expect in one's future. Appointments with human rights institutions, or any actual interface with 9-5 institutions, pose a disturbance to the constructed life rhythm of the refugee community, which in general revolves around a late-night meal that ends around 2 am each day. Zina, a new mother and pious community member, was the first to articulate something I myself had experienced trying to navigate the two incommensurable temporalities: "We are in the same place, but everything is different. We stay up a long time talking and eating. They wake up so early! They call in the middle of the morning. It's ridiculous to ask an old woman to be at UNHCR by 8:00 in the morning, you know?" It is "as if we are in a new time zone." These two temporal worlds are coeval, and often deny or reject the existence of one other (Fabian).

What makes these two time zones so real and so separate? There are a number of reasons for the construction of a "refugee time." Iraqi refugees are not legally allowed to work in Jordan, and until recently, children were not allowed to attend school. Lack of daily employment or purpose does nothing to regulate routine-time, but Iraqi families also describe a kind of "temporal bareness of life" when explaining why they feel 'lost in time'. For Deana, putting her clothes together before each morning was something she did back in Iraq, but not anymore: "I just don't feel like getting prepared for the next day. I am more like a machine, just sleep and then get up again and put on whatever I find. I used to put on makeup and do my hair all nice…" This

lack of purpose is compounded by a strong sense of disorientation. The middle daughter of the Hazzaz Family, a young 20 year old, talked about how she had "aged twenty years since coming [to Jordan]. I forget everything. Maybe I will hold something in my hand and forget and start looking for it somewhere else. Maybe I will go to the store and cannot remember why I came." Psychologists and some scholars blame trauma and displacement for this affect (Kirmayer). Whether this timelessness has to do with the traumas of refugees' experiences is worth exploring. However, I noted in my interviews that people only spoke of disorientation and the "threat of idleness" (Feldman, 147) after they began interfacing intimately with the human rights institutional network.

Dr. Nahidh, a physician and father of two young boys, refers to time suspension in another form, which might bring us closer to understanding the systematic nature of this phenomenon. In his nearly perfect English, he lamented: "I am hanged, I am hanged…" Suspended in time, Nahidh is hanging, "just dangling here waiting for nothing." The malapropism is fitting. Nahidh likened his refugee status to his stay in a death-row prison under Sadam Hussein's order, remarking that "waiting for death is harder than death itself." The word "waiting" was mentioned on every single occasion I met with a refugee family. Waiting appears to be the most agonizing feeling shared in the collective present experienced by Iraqi refugees. This general lack of temporal structure, in all its various forms, culminates in a new life rhythm: "refugee time." Waiting alters life rhythm, removing its pulse and flat-lining the "beat of life" that once was (back in Iraq). This state of "being hanged" or waiting perpetually is a powerful force in paralyzing refugees' decision making about everything from whether to rent month-to-month or on a long-term lease to whether or not to return to Iraq. Because Iraqi refugees are

perpetually 'waiting,' but never sure exactly what for (Crapanzano), they live in a mentality of nostalgic longing (Boym) and in perpetual anticipation of the "what if" subjunctive mode.

The human rights institutional network is not unfamiliar with the "what if" either. This network of organizations is also operating in perpetual anticipation, but they are certain of what they are waiting for: funding. The human rights institutional network operates in a zone of cyclical time, marked every six months by funding losses and gains, but also by two year 'missions': most workers are rotated in and out of Amman in two-year stints to avoid the burn-out so common among human rights workers. My interviews with human rights workers indicates that they do not understand refugee time, partly because their respective life rhythms keep refugees as distant as possible from the processes meant to save them. Aside from spatial and social barriers, segregated waiting areas, a limit of five UNHCR phone lines for one million refugees, and conflicting cultural norms of communication, human rights workers operate on a cyclical sense of the future, in which employees *know the end date* of their six-month or two-year stint in Jordan and institutional funding cycles determine the length of an organization's operations. Workers have a definitive time limit on their presence in Amman. The institutions they work for may lose funding and workers might leave earlier rather than later. Conversely, Iraqi refugees operate on a linear time, or no time at all, and have a projected future of futurelessness. Some families have been in Amman since Sadam Hussein took power, and have seen generations of human rights workers arrive and then move on. In some strange way, Iraqi refugees have more temporal stability than human rights workers, one of *perpetual* uncertainty rather than *uncertain* uncertainty. Perhaps attempts at temporal separation and temporal control over

refugees by the human rights institutional network are a way of exporting anxieties about the future, or a way of ensuring futures that, without the construction of refugee time, might be impossible (or unfundable). The production of refugee-time is part of a sovereign project that "creates and guarantees the situation" by which the human rights institutional network survives (Agamben, 16). Given the network's own institutional potentialities, the production of refugee-time as a kind of social construction project is both fitting and ironic.

This zoning of time is partially a reality of these divergent and ambiguous trajectories, but there is more to it. Is the production of refugee time a necessary 'reality' of the situation? What are its affects these time-zoning practices have on refugees? In describing his relationship with Western service workers living in Amman, Dr. Nahidh describes his liminal exile, "Like ghosts we move through your same streets, as if walking through a different time. We have been exiled to another dimension." The 'busy' life and the 'bare' life impose a mutually constructive image of one another, and form not only identities, but also modes of interaction that produce distances. In this coproduction of distance and difference, hierarchies are born (see "Writing Against Culture"). I argue that there are functions, and corresponding institutional policies, to time zoning: first, temporal separation between Iraqis and institutional workers takes place where spatial barriers do not exist, thus reproducing difference and hierarchy necessary for institutions to maintain power. Second, control of large populations requires that individuals feel deprived of some degree of agency.

Institutionalizing Time through Policies and Practices

In the practice of distributing aid, assistance, and resettlement to millions of people, is it possible to avoid also governing

those people as a nation-state would? What is the difference between assistance and governance? These questions have been raised before (Redfield, 344), and they themselves have been troubled, but I find them essential to ask in the context of my fieldwork. While 'refugee-time' never became a standardized and institutionally ratified system of operations in Amman, but instead a category or 'other time' or 'failed time,' the more dominant life rhythm of human rights workers became integrated into an official Time Regime formed by the production of policies that structured the present, future, potential, and imagined worlds of refugee families.

In every interview I had with human rights workers, the term "urban environment" arose. The given official would bury his head in his hands and say, "We are just not equipped to cope with this new urban environment" (director of Center for Victims of Torture, director of CARE, official of UNHCR public information office, director of the AlHasmi Shmali branch of Caritas). Why these workers are overwhelmed by the 'urban environment' has everything to do with the unwritten project of sovereignty and governmentality. It makes sense that in distributing resources and providing services, an urban setting would make work easier, not harder: access to hospitals and schools, transportation and distribution of food rations, etc. Liisa Malkki's history of refugeeness is enlightening in articulating how the 'camp' became a system for handling refugee populations in part as a project of control and inquiry in the first place (Malkki, 354). What is challenging about the urban setting is a shift in spatial control: "We used to visit camps once a week or something, and refugees were easy to find, document, and treat. Now they're spread all over the place and they're moving around and we can't keep track of them" (official from UNHCR public information office). The human rights institutional

network finds itself needing to re-structure its interaction-time with the refugee community in adaptation to a new social and physical environment. "Instead of coming to them when it made sense, we have to open ourselves up for them to come to us. And they aren't stupid-- they're shopping around for services" (director of CARE). The shift to an urban environment alarms many human rights workers, who are now faced with the trouble of a certain non-profit free market in which refugees move freely and with a sense of personal agency and choice. Not only can refugees essentially put 'bad institutions' out of business, they are also harder to control and govern. The restructuring of space in this new locale unwinds the usual containment of refugees, and like Foucault's madmen gone loose from their display, the refugee is free to roam the streets again, reminding every one they cross in the public realm of the "…uncertainty and dizzying unreason of the world" (Foucault, 1965, 11). The nearly comic vision of a roaming leper, the dangerous victim, comes to mind.

Given a lack of spatial exclusion, confinement of Iraqi refugees via the mechanism of time functions to keep them out of the world's way, spending their hours waiting in line, by phones, or disoriented in their own houses. Of the many policies outlined by human rights institutions, the theme I found in common was a lack of definitiveness, and the power of uneven potentiality. Access to human rights institutions *by refugees* is never appointment based: refugees can wait in line during certain hours of the week to get an appointment with a caseworker (always anonymous, and never the same person twice). Refugees are not guaranteed to be seen even if they wait in line. During my three months in Amman the open hours a refugee was permitted to wait in line changed twice. No public documents released a change in time, and no explanation was given. It seems (although I

have no proof of this) that institutions are intentionally avoiding the large influx of refugees seeking appointments by shifting their operating hours. Access to refugees *by human rights institutions*, however, is always appointment based. If a UNHCR lawyer wants to discuss a document with a refugee, they assign an appointment time (appointments are assigned, not offered, since refugees are presumed to have nothing that might interfere with meeting times). Appointments are often scheduled just a day or two in advance. A refugee is expected to arrive at the UNCHR office, and be on time. If they are not on time, they lose their appointment slot and must wait sometimes months for a new appointment. We can see just from this one example of appointment policies that the unevenness in who operates on "known time" and who operates on the basis of perpetual potentiality begins to structure two separate temporal zones, excluding Iraqi families from the institutions meant to protect them, and producing a kind of "refugee time." This systematized temporality also constructs a time regime that imbues temporality with disciplinary overtones.

Other policies include phone-calling practices that form one-way systems of knowing[1] (Goffman, 66) and anticipating: if a refugee calls 'too often' or is 'too impatient' they are heavily penalized. Dr. Nahidh called a human rights institution to check his file status, having heard nothing from them for 2 years. He left a message and did not hear back, so he called again two weeks later, an then again two weeks after that. He was told that if he called again, (or 4 times in 3 months) his file would be shut down for six months. While the threat of a file getting "shut down" is vague at best, it certainly prevented Nahidh from calling again. Another phone calling

---

[1] see Goffman's discussion on managing social identity

policy implemented by almost all short-staffed human rights organizations was that of the 1-time call: If an institution calls a refugee for any reason, they will call only once. They will not leave a message, and if no one picks up the phone, they will not call again for 6 months. Given the rules about refugees calling into institutions, refugees are not really allowed to call back if they miss the original call. Again, an unevenness in who can operate on "known time" and who is forced into a state of perpetual potentiality speaks to the ways in which refugee time is functional to the human rights institutional network: it serves as a mechanism of control and regulation for institutions governing large populations. Zina explained how the calling system works: "Every refugee has it like this, a phone waiting. Even if you are in the shower for five minutes, you worry the UN will call for you. If you miss their calls, you know, they won't speak to you for six months. Six months is a long time for a refugee, a *day* is long time for a refugee. We have the waiting, and the slow, slow time." By controlling a refugee's sense of time, either intentionally or not, the human rights institutional network exercises power that not only affects a refugee's sense of agency but also how and when a refugee will shower, or what a refugee might worry or think about while she is in the shower. Many refugees including Zina expressed some resentment about this inequality in power. Dr. Ghada, who has been raising her three teenagers in Amman since 2003 found humor in the tragic power dynamic, "Haha. They tell us when to call them, but they call us whenever they want!"

Perhaps the most long-lasting and desperate temporal control effort by human rights institutions was to generate misinformation or non-information about the future in order to monitor the concerns and demands of refugee families. I was shocked by an interview with an anonymous official from the UNHCR

Public Information Office in Jordan: "You know, between you and me, we aren't really telling the refugees about their futures. We have to tell them something, like their file is inactive, or something, because we just can't handle a lot of appeals from refugees who've been turned down. But the truth is, we just can't go telling them they aren't going to get resettled—there would be a riot!" To control the flow of refugee appeals and to prevent questions of accountability that could not be fully answered, institutions found themselves actually offering misinformation to refugees to "keep them calm". Increasing pressure from Iraqi refugees to push past the information barriers culminated in a small power struggle in spring 2009. Several women in AlHashmi Shmali staged a sit-in at the UNHCR building, demanding to know the status of their files. They were warned that their files would be closed permanently if they continued. Indeed, controlling the future, and discourse of the future, is critical for the UNHCR as an institution if it is to confine refugees through temporal barriers. Because Iraqi refugees in Amman are not confined to a refugee camp, the institutions have a legitimate fear that refugees will exercise collective agency in demanding information about their own files. However, once this information is released, human rights institutions are likely to lose much of their legitimacy among refugees, many of whom only have open files at the institution in hopes of being resettled. Furthermore, funding for the Amman offices is linked to caseload, and a tight control over the future is critical in maintaining large, hopeful numbers and a docile population of refugees. (Many institutional officials were upset by this policy, even while they enforced it.) Intentional misinformation may not be the full cause of refugee anxiety, but it certainly exacerbated existing anxieties for refugee families. According to Nahidh, Ahmed, Najlaa, Zina, Ghada, and other refugees, just knowing the future,

whatever it is/would/could/will/might be, would be the ultimate relief to a sense of timelessness. Suspending information about the future manufactures a harmful hierarchical difference in time between refugees and the rest of the community in Amman.

The Production of the Subjunctive-Anticipatory Future

The impact of numerous practices and policies, a few of which I have outlined above, generate a 'time zone' that is incredibly uncomfortable to those living within it. There is something special about the potentiality that Iraq refugees live with as a result of the temporal governance regime implemented by the human rights institutional network. Potentiality encompasses the future tense, but also the present tense, since people make decisions in the present based on their calculations of the future. In this way, potentialities are both anticipatory (operating in the present) and future (operating in the imaginary). However, potentiality also makes space in one's mind for multiple futures, and carries a "what if" (the subjunctive mode) that rings through it. This dimension in time, which I call the subjunctive-anticipatory future, is usually regulated to some degree by context. This paper is a good example: I can anticipate it (act now or feel now in anxiety of its future due date), I can consider it in the future (it is not yet written, but I imagine it will be-- I am able to visualize its completion), and it is in a few ways subjunctive (what if I wrote about X instead of Y, or what if turns out to be a terrible paper?) However, the what-ifs are regulated in many ways by factors that I control myself: most what-if questions relate to me as the agent of change because the other elements of the anticipatory future are relatively certain. The due date is generally set, the terms of the paper are established, the general system of grading, writing, and reading are set, etc. However,

if this publication were cruel, or had a desire to control my anticipatory actions in the present for some reason or another, its board might withhold information. They might not tell me the due date or their expectations, or they might change them at the last minute. The less I am told, the more paralyzed I would feel in my choices of what to write, when to write, how to write, etc. The board's choices structure my time, my psyche, my *world*, in some way. A time regime that institutionalizes the subjunctive-anticipatory future as its major product might be said to produce and reproduce bare life in a new way-- the production of a futureless people who are both identified and governed by their 'temporal bareness,' or a "excess of narrative potentiality" (Boym, 31).

This bareness is reflected in the language Iraqi families use to approach the topic of the future. I had great difficulty encouraging Iraqis to use the future tense or even consider discussing the future. I learned that the only way to discuss the future was to discuss the world in hypothetical terms; after all, the future of my neighbors was only ever hypothetical to them. Uncertain potentialities defined their realities as much as it did their fantasies, and produced a high level of anxiety. "If the UNHCR called and said, 'Okay, you're here for life, so settle down and get used to it, I could. If they said, okay, you're resettled and you're leaving tomorrow, I could. But I hear nothing. I know nothing about my own future," said Ahmed. Ahmed was faced with indecision throughout my time in Jordan. First he heard that he would be resettled in two weeks. We discussed his options. He was tempted to reject the offer, not really wanting to resettle to the United States, because "any other country has a better health care system for my mother." Ahmed's face always carried a series of forehead wrinkles, but after the news, there were a lot more wrinkles. "How do I know I am making the right choice?" "Kali, how

much is rent in Oakland?" "Can I find a wife, do you think?" After sorting out the details and worries he anticipated, Ahmed finally decided to accept the resettlement. He told his landlord, convinced his aging mother and brothers to resettle, quit his illegal employment, and said goodbye to his friends in the mosque. He was to be resettled to Oakland, California, a few hours from my school in Davis. We made jokes about how he would arrive at my home before I would. Just two days before his flight, he got a call from the UNHCR: "They said 'Never mind. Your sponsor in the U. S. is on vacation for the summer. We may contact you in the next three months to resettle you.'" Later, he heard that the UNHCR was certainly resettling his family; they just needed to wait. A week before I left for America, Ahmed said, "Kali, I have news. Now my brother says he does not want to go. We are a family unit on the file, so I can't go unless he says he wants to go, too. What can I do?" Until recently, it was unclear whether he would be allowed to resettle without his brother, and if so, whether he and his family would choose to leave Jordan. Ahmed has since relocated to Oakland with all of his family members. This story is one of hundreds I heard and found myself involved in. It illustrates the lived meaning of the anticipatory-subjunctive future, and while it seems minor the in scheme of the UNHCR's 'protection' mandate, the process seems unnecessarily cruel.

Returning to the Unclear Role of Human Rights Institutions

Partly because the human rights institutional network sees itself as a pillar of order amidst a perceived chaos in the past violent lives of refugees and potential chaos in their present and future, it needs to take measures to contain the presumed chaos brought about by the presence of refugees and their need. Protection, as the primary mandate of the human rights institutional

network, means multiple things: in some ways, the network seeks to protect refugees from danger, but also to protect the 'rest of the world' from the danger and disorder refugees are seen to bring with them (Hunt, 186). They are in effect 'quarantined' in another time zone crafted for exclusion as a function of (and under the banner of) salvation. The scope of what the human rights institutional network performs is unclear. Are these institutions expected to institutionalize the *needs* of refugees, or do they institutionalize refugees themselves? What does it mean to be a 'protection agency' and who, or what, is being protected?

The limits of the human rights institutional network have fuzzy, uneven borders: "We are debating what to tell refugees… about their resettlement status. Not all refugees will get resettled—it is not our job, we are a protection agency…" (UNHCR Head of Public Information in Amman). This statement implies that institutional control of the future is a defense against refugees' misperception that human rights institutions are meant to serve resettlement needs. Interestingly enough, none of the refugees I spoke with see resettlement as the job of human rights institutions. Their primary concern is being told what kind of potential futures to anticipate: determining futures is a task refugees *do* see as the (failed) role of human rights institution. Dr. Nahidh, struggling to answer my question about what he plans for his future, made a poignant commentary on the ways in which temporal control functions as a source of hierarchical power via prison-like structures of governmentality. To him there is no reason for human rights institutions to govern him except as a pathology of power[2]: "I know how those people think, I know, really. They [human rights workers] want to surround themselves with top secret information, and

---

2 see Paul Farmer's *Pathology of Power*

they never want to reach people. We are under their custody and they behave like this. It's like when I was in the prison, we didn't have names. I remember my number was 163. 163 go to the WC! 163 go to the barber! And I almost forgot my name. This is one of those things I want to forget, but it sticks in my mind. Why would you want to dictate time in this way? For controlling everything, I think."

I have noted several institutional functions of temporal exclusion and control, and highlighted the experiences such a time regime induces. Authors on refugeeness, including Bauman, Turner, and Douglass, have referred to refugeeness as life in the realm of ghosts, life as a hypothetical, normative version of potential realities (Malkki, 357). Refugees, like Foucault's madmen, are made to be literary fools, mirrors to irreconcilable truths, to realities so complex, unwieldy, and uncertain that they must be transposed into the subjunctive mode, suspended in time to a moment that is neither the inevitable future nor the inevitable past, but somewhere on stage and in jest alone manageable. If this liminality is the case, it is a constructed case, produced by institutions seeking to manage their *own* potentialities. The management of futures, nearly a million futures in this case, is what one human rights worker called "a superhuman effort" full of incongruencies and risks. The act of taking on this "superhuman effort" is exactly that-- superhuman. It seems to transcend the basic mandates of human rights institutions and accomplish a system of separation, control, and hierarchical structures of governance. Whether or not this project of sovereignty through temporal governance is an essential requisite for offering goods and services to refugees is unclear and leaves me concerned about how institutions behave in times of crisis. What systems of accountability are non-state sovereigns (made up of transient human rights institutions and even more

transient employees) held to? What strategies can Iraqi refugees employ to refute 'refugee-time' and escape from the subjunctive-anticipatory future? There is room for refugee voices to answer these questions: after all they are experts on the production and impact of this human rights time regime.

<div align="center">Works Cited</div>

1. Agamben, Giorgio.1998 *Homo Sacer: Sovereign Power and Bare Life.* Trans. Daniel Heller-Roazen. Stanford University Press. Stanford, California.
2. Boym, Svetlana. 2001 *The Future of Nostalgia.* Basic Books. New York.
3. Crapanzano, Vincent. Waiting: The Whites of South Africa.
4. Didier Fassin and Richard Reichtman. 2009 *The Empire of Trauma: An Inquiry into the Condition of Victimhood.* Princeton University Press. Princeton, NJ.
5. Douglass, Mary. 1986 *How Institutions Think.* Syracuse University Press.
6. Fabian, Johannes. 2002 "Our Time, Their Time, No Time: Coevalness Denied," *Time and the Other.* Columbia University Press.
7. Feldman, Ilana. 2007 "Difficult Distinctions: Refugee Law, Humanitarian Practice, and Political Identification in Gaza." *Law and Humanitarianism in Gaza.* New York University.
8. Foucault, Michel. 1965 *Madness and Civilization.* Trans. Richard Howard. Random House, Toronto.
9. Foucault, Michel. 1977 *Discipline and Punish: the Birth of the Prison.* Trans. Alan Sheridan. Vintage Books, New York.
10. Hunt, Lynn. 2007 "The Soft Power of Humanity," *Inventing Human Rights.* WW Norton and Company, New York.
11. Goffman, Erving. 1963 Information Control and Personal Identity," *Stigma.* Simon and Schuster. New York.
12. Malkki, Liisa. "National Geographic: The Rooting of Peoples and the Territorialization of National Identity among Scholars and Refugees." *Cultural Anthropology*, Vol. 7, No. 1, (1992), pp. 24-44.
13. Malkki, Liisa. 2002 "News from Nowhere: Mass Displacement and Globalized 'Problems of Organization'." Ethnography. 3; 351.
14. Malkki, Liisa. "Refugees and Exile: From 'Refugee Studies' to the National Order of Things.'" *Annual Review of Anthropology*, Vol. 24. (1995), pp. 495-523.
15. Mbembe, Achille. 2003. *Necropolitics.* Trans. Libby Meintjes. Public Culture 15 (I): 11-40.
16. Graham, Mark. *Emotional Bureaucracies.* Ethos 30 (3). 199-226.
17. Falk Moore, Sally. *Explaining the Present: Theoretical Dilemmas in Processual Ethnography.* American Ethnologist; 14 (4), 1987.
18. Redfield, Peter. "Doctors, Border, and Life in Crisis." Cultural Anthropology. Vol. 20, Issue 3, pp. 328-361.
19. Kirmayer, Laurence J. 2003 "Failures of imagination: the refugee's narrative in psychiatry." Anthropology *and Medicine.* Vol. 10, No. 2, pp. 167-185.

Maintaining Dignity and Self-Worth:
Challenging Race and Gender Oppression in Higher Education

Gloria Toriche

Mentor: Professor Natalia Deeb-Sossa

Introduction

Understanding how underrepresented faculty, in particular Chicanas and Latinas, maintain value in their work, despite institutionalized racism, salary differential, disproportionate workload distribution and community service expectation is the focus of this study. I queried selected faculty members as to the strategies they used to balance academic demands with their cultural identity and family responsibilities and expectations. Class, race, ethnicity, gender hierarchies, and oppressive working conditions affect Chicana faculty members' experience within academia thus making it hard to retain faculty of color that is viable to teach, research, and mentor the current demographic composition of the student body at the universities. Yet, all these female faculty of color created and maintained value in their work—that is found their work meaningful—which helped them construct a positive self-image that helped them persevere under challenging working and personal circumstance.

Literature Review

In this section I will discuss some of the many challenges faculty of color, in particular Chicana and Latina faculty face when working in academia. Chicana and Latina faculty are few in numbers. At the University of California Davis, for example, of the tenured or tenured track faculty only 4% were Hispanic (UC Davis facts sheet, 2010). The faculty in the UC system does not reflect the diversity in the state. The most current numbers from 2010 at UC Davis indicate that out of 2,091 faculty members, only 36 are Mexican, Mexican-American, or Chicana/o. These numbers indicate disproportionately low numbers of minorities being hired into new faculty positions. While the University's population has become increasingly more diverse, it has not kept pace with the demographic changes in California. In 2008-2009, the University community (staff, faculty, and students) was 14% Chicana/Latina compared to 34% for California as a whole and 14% for the nation. (UC facts page 2010 WEB). According to Weinberg (2008), given that the minority population at the Ph.D. level is not on par with total population figures, this slow growth in faculty diversity is not surprising. Problems in recruiting minority professors and high rates of turnover among minority faculty members, also explains in part the scarcity of female faculty of color at four-year colleges (Gose 2007).

Professor Denise A. Segura's article, "Navigating Between Two Worlds: The Labyrinth of Chicana Intellectual Production in the Academy," reveals that Chicana faculty are academic "others" whose social expressions of race, ethnicity, class, gender, and/ or sexuality challenge the "Eurocentric masculinist" text that has been in place in the intellectual production of up-and-coming scholars in all disciplines. In this struggle, Chicanas reclaim their voice amongst political discourse to firmly establish themselves in community praxis. Segura describes workplace discrimination against Chicana faculty and discloses the hidden injuries of class; race-ethnicity, gender, and the strategic oppositional consciousness Chicanas develop to claim

empowerment and praxis from an institutionally alienating subtext (pg.30). By "hidden injuries" Segura means the subtle ways institutional racism, tokenism, and sexism shape the work experience of Chicana/Latina faculty members. Through the interviews conducted of Chicana faculty, Professor Segura brings to the forefront the struggles with institutional racism, marginalization, conflicting views on familial obligations, and identity formation, and the ways these faculty members cope within their respective institutions of higher learning.

In the anthology *Telling to Live* (Latina Feminist Testimonios, 2001), through stories, poetry, memoirs, and reflections an intergenerational group of Latina women share the complexities of understanding Latina identity, negotiating their place in U.S. society, and their struggles when reaching the echelons of higher education, often against great odds. These female faculty of color disproportionately mentored Latina/o and Chicana/o students, served on committees, while juggling family responsibilities (Segura, 2003; The Latina Feminist Group, 2001, Zavella, 1997).

These Latina feminists thrived in academia, in large part, by building relationships of sustenance and relationships of creativity as they carved out their own spaces in the ivory tower. As one wrote, "I find some comfort knowing I am not alone. There's a whole cadre of women— educated *Lloronas* of the 20th century, who had the historical audacity (and ovaries) to become thinkers" (pg. 217). To understand how underrepresented faculty, in particular Chicanas and Latinas, maintain value in their work, despite challenging working conditions described above, I will use Kleinman's concept of moral identity, which she defines as "an identity that people invest with moral significance…By this definition, any identity that testifies to a person's good character can be a moral identity, such as

mother, Christian, breadwinner, or feminist" (Kleinman 1996, 5). I argue that Chicana faculty created and maintained value in their work—that is found their work meaningful—which helped them construct a moral identity or positive self-image that helped them persevere under challenging working conditions and personal circumstances.

Methodology

To date I have interviewed 13 Chicana/Latina faculty members from across the University of California system and from various disciplines using snowball sampling. The questions inquired about their first academic job, their current job, what they like best, the least, and how they dealt with problems that arose. While all the participants were conscious of their ethnic/racial heritage, they provided different reasons for their consciousness. The interviews were semi-structured and primarily deal with their experiences within the university system. The transcribed responses identified patterns of struggles and strategies to overcome these obstacles. A questionnaire consisting of 41 questions was used.

Results

To understand how under represented faculty, in particular Chicanas and Latinas, maintain value in their work despite challenging work condition, I will first describe how, according to the Chicana and Latina faculty themselves, different oppressive working conditions affected and continues affecting their experience within academia. I will then analyze the different strategies these female faculty members of color created to find their work meaningful—which helped them construct a positive self-image. The strategies by which Chicana and Latina faculty chose close family ties and proximity to social networks to help them create and maintain

a positive self-image, what Kleinman (1996,5) defines as "moral identity."

Challenging Working Conditions
My findings to date reveal that Chicana/Latina faculty interviewed have been tokenized, overburdened with mentoring, and had to deal with sexism.

Tokenization
A token is one of relatively few women or minorities given prominent positions in a particular occupational setting. They are often treated as symbols or representatives of the marginal social group to which they belong. As a result, their thoughts, beliefs, and actions are likely to be taken as typical of all in their social group. Some women, according to Kanter (1977), have been told that their job performance could affect the prospects of other women in the company. The token, according to Kanter, has to work hard to have his or her achievements noticed. All of the Chicana faculty I interviewed were some of the first Chicana academics to graduate and to work at their respective departments at their universities. As a result, all, except one, described being treated as representing "women" and as representing Chicanos/as, as a whole. As one interviewee described, "there is no denying why I am there, every staff meeting I am reminded of my role" (interview, Chicana faculty). One faculty member noted in an interview how as a graduate student her performance would affect the prospects of other Latinas/os applying, as she was the first one in the department, and "all eyes were watching." (Interview, Chicana faculty). As a result, the entire faculty interviewed believed that they had to work three times as hard, because they were women and because they were Chicano/a. For example, in comparison to their peers the Chicana/Latina faculty interviewed served on twice as many committees. They are placed in the difficult position of not accepting to be on so many committees but then they run the risk of being labeled not willing to participate.

Overburden with Mentoring and other work
Another challenge these Chicana/Latina faculty described is being overburdened with mentoring, in particular minority students. The job description for faculty of Research 1 institutions is: "research, teach, and service (concurrent interview response) in that order, "publish or perish." The difficulty that Chicana/Latina faculty face in adhering to these tasks comes from their order of importance: The narratives from faculty were that as a woman of color it is not an option to conduct day to day business in this "order;" all three are equally weighted, important, and necessary. One reason for this is the growth in Chicana/Latina population previously discussed. There is a growing undergraduate population and they need mentors. One of the problems that young Chicana/Latina girls face is not having enough role models in academia. If there are not enough people that are culturally competent to understand the current population, then how is the Chicana/Latina community supposed to increase the number of graduates from higher education institutions? Too much time is spent explaining to other faculty members why the experience of one undergraduate cannot be compared to another—without taking into account the cultural capital each of those students is bringing with them to their campus.

As one described, "our students need us, it is not their fault that there are not enough professors of color to represent them within the system." Another faculty member described how rewarding, yet difficult, mentoring students was. She explained, "I have mentored many students that have gone on to do great things for the community, it is worth the sleepless nights to see the difference it makes."

Sexism
Broadly defined, sexism is an ideology, a set of ideas that promote male privilege, in part, by portraying women as inferior to men (Johnson 1997, *The Gender Knot*). Some of the faculty I interviewed felt that their greatest challenge was sexism and not racism. Institutional racism is the embeddedness of racially discriminatory practices in the institutions, laws, and agreed upon values and practices of a society. Institutional racism (also called structural or systemic racism) is any form of racism occurring specifically within institutions such as public government bodies, private corporations, and universities (public and private) (Tatum 1997)

The faculty described feeling pressured to "choose" between academia and having a family. As one said in an interview, "…Constant scrutiny to be an academic means to not be a woman—definitely no to family."

Other Chicana faculty described the sexist remarks that often brought this message home. As one recalled, "Someone told me early on in my career to strive to be a 'good enough parent,' but in our culture familia comes first, so tenure would take longer for me."(Interview, Chicana faculty). This faculty member was encouraged to make sacrifices or shortcuts forsake of getting tenure, that is striving to be a 'good enough parent', yet she decided that getting tenure would take a little longer as her familia (family) would come first.

Positive Self Image
All faculty, when asked the importance of the work they did, unequivocally said it was "very important," "it was a calling," or "I love doing what I do. I love teaching, I love mentoring the students I have, and I love the research I get to do, in spite of the difficulties and challenges I have to face on a daily basis." I identified three main strategies used by the Chicana faculty I

interviewed to deal with their difficult working conditions and to create a positive self-image. They concurred that it was essential to strongly identify as a Chicana/Latina, maintain close family ties, and have a strong support network of colleagues.

Strongly Identifying as Latina or Chicana
Not all interviewees identified as "Chicana" or "feminists." However, the majority did, and those that did not, identified themselves as Latina or Mexican (due to country origin): "I am more comfortable saying I am Mexican, because I was born there and it is important to the memory of my father and the family struggles to come to the U.S, but through my experiences in college, graduate school, and now working at a research 1 university I identify strongly with the struggles of other women of color in academia: my peers, *mis amigas*" (Faculty interview). The majority also identified themselves as women, women of color, activists, and researchers. This is a typical quote, "We are not 'just' professors, we are women of color, mothers, wives, partners, researchers, activists, educators, mentors…." For these Chicana faculty their work was important because they believed that they were part of a collective—as women of color they shared a collective experience of struggle in academia—and that experience mattered. That experience, in addition, shaped their research, their teaching, their mentoring and service in academia, as they saw as their duty to help educate the next generation of Latina/o and Chicana/o graduate students.

Maintaining Close Family Ties
Another strategy to create a positive self-image was to have close family ties. All interviewees mentioned how crucial it was to maintain a close proximity to family. In defining family however, there were different definitions. They varied from: husbands and children, brothers and sisters,

parents, domestic partnerships, to circles of friends that make up their extended family. Whichever way it was defined having a close geographical distance to these "family" networks was essential to trying to achieve balance: "BALANCE? Does not happen but, having my family and friends (outside the academy) are key to making me feel like I have some semblance of it" (faculty interview). Having close family ties reminded them of "my community," "my home," and those to whom "I need to give back." This allowed the Chicana faculty to construct an identity of giving back to the community were they came from.

Finding Supportive Colleagues
The third strategy I identified from the interviews that allowed them to construct a positive self image was maintaining strong personal relationships with other academics. As mentioned by all interviewees, "Graduate school was a lonely isolated experience" and "family and friends provide comfort and familiarity, but they do not understand the nature of the beast. Fellow graduate students understood, and became really good friends. Friends I have even now."
Establishing and maintaining friendships with people who are going through the same experience, who understand the isolation and alienation, becomes a strategy for survival. Searching out other underrepresented minorities in academia to set up alliances is essential. Chicana/Latina faculty couldn't stress enough the importance of these networks in navigating through the system. As one faculty mentioned, "As soon as I was hired, I looked for other faculty members who looked like me, who understood me. I joined a Chicana/Latina listserv and research center. Many of them are my mentors, and my friends today." For some faculty members interviewed the key was to find other women scholars of color. It seems that for the Chicana faculty it was

important to find others who understood the challenges, in particular the racism and sexism, they experience in academia. This strategy allowed them to seek solidarity with other faculty members.
It is important to note that one faculty member did not look for this in her peers. When describing her network of peers she noted, "I always tried to surround myself with those in positions to help me achieve my goals. My peers are separate from my friends. In academia my social networks are work related—only. I am very close to other women faculty of color but that has been personal not professional. The struggle in academia is to have allies to help reach your goals" (Chicana faculty interview).

Conclusion
This study expands our understanding about Chicana and Latina faculty, as this is one of the few studies that focus on the strategies used by faculty of color to deal with their difficult working conditions. This analysis suggests that moral-identity construction is an active process (Deeb-Sossa 2007). The difficult conditions of their work only made their work more important, as they believed that they were doing important work because they were educating the future generation of Latina/o and Chicana/o graduate students. They also acknowledged their commitment to the Latina/o and Chicana/o community, which became a symbol of their dedication to fight against racism and sexism. They worked tirelessly doing research in these communities, as they felt it was their obligation.
These Chicana and Latina faculty have achieved a place within the University of California systems despite their family obligations, and the difficult working conditions described above. Even today, Chicana and Latina faculty's work is disregarded or devalued, and they suffer of tokenism, and sexism. However, my study

documents the strategies they have created to find meaning in their work and to create a positive self-image.

<u>Sources</u>

1. Acevedo, Luz Del Alba. Telling to Live: Latina Feminist Testimonios. Durham: Duke UP, 2001. Print.
2. Anzaldúa, Gloria. Borderlands = La Frontera. San Francisco: Aunt Lute, 1999. Print.
3. Deeb-Sossa, Natalia. 2007. "Helping the "neediest of the needy": An Intersectional Analysis of Moral-Identity Construction at a Community Health Clinic." <u>Gender & Society</u> 21(5): 749-772
4. Gose, Ben. "The Professoriate Is Increasingly Diverse, but That Didn't Happen by Accident." The Chronicle of Higher Education (2007). Print.
5. Johnson, Allan G. The Gender Knot: Unraveling Our Patriarchal Legacy. Philadelphia: Temple UP, 1997. Print.
6. Kleinman, Sherryl. 1996. *Opposing ambitions: Gender and identity in an alternative organization.* Chicago: University of Chicago Press.
7. Kanter, Rosabeth Moss. Men and Women of the Corporation. New York: Basic, 1977. Print.
8. Lamphere, Louise, Helena Ragoné, and Patricia Zavella. Situated Lives: Gender and Culture in Everyday Life. New York: Routledge, 1997. Print.
9. Segura, Denise. "Navigating Between Two Worlds The Labyrinth of Chicana Intellectual Production in the Academy." University of Santa Barbara (2003). Print.
10. Sharon L. Weinberg. "Monitoring Faculty Diversity: The Need for a More Granular Approach." The Journal of Higher Education 79.4 (2008): 365-87. Print.
11. "UC Davis News & Information: UC Davis Facts: Demographics/Statistics." UC Davis News & Information: UC Davis Facts. 12 Jan. 2010. Web. 01 Dec. 2011. <http://facts.ucdavis.edu/stats.lasso>.

A Disappeared People: The Afro-Argentine Enigma

Rosana Womack

Department of History
University of California, Davis

Abstract

During the colonial period tens of thousands of African slaves arrived at the port of Buenos Aires in Argentina and were forced to disperse throughout the Viceroyalty of the Rio de la Plata. Over time, many of these African slaves gained their freedom and became an actively vocal presence within Argentine society as "Afro-Argentines." Through newspapers, mutual aid societies, and their influence on Argentine music and dance, the Afro-Argentines left an indelible mark on Argentine culture. However, during the later half of the 19th century, they "disappeared" as a distinct racial minority within Argentina. Through a working bibliography of primary and secondary sources, archival research, and statistical data, the current research will address the historical problem of the "disappeared" Afro-Argentine population during the second half of the 19th century. Particular focus will be placed on the demographic, cultural, and racial conditions leading up to their "disappearance," while also examining how the Afro-Argentines experienced and contributed to their population's decline during this era.

Colonial Argentina: 17th and 18th Century

Argentina was a remote and relatively isolated region during Spanish American colonization. Since a census did not exist before Argentina became the seat of the Viceroyalty de la Plata in 1776, it is difficult to establish Argentina's population size before this time. What can be said of Argentina during the colonial period is that it began as a "backwater" within the Spanish colonial empire. The Indigenous American groups who inhabited this vast land were nomadic and small in numbers and could not support the large-scale labor needed to cultivate Argentina's expansive and fertile land. During this time, Argentina was part of the Viceroyalty of Peru, and as such, its economic growth was linked to the production of cotton, rice, wheat, and leathers goods located in the northwest regions where trade was conducted.[1] Though the Spanish crown approved *asientos* (sale of licenses for the exportation of slaves to Spanish America) to traders for the shipment of slaves to the southeast coastal region of Buenos Aires, often the number of legal slaves entering Argentina did not satisfy the *porteño's* growing need for European goods and domestic and agricultural labor, which ultimately facilitated a smuggling trade to develop outside of Spain's control.[2] The illegal slave trade was problematic for it prevented an accurate assessment of African slaves entering the River Plate during Argentina's colonization. George Reid Andrews estimates that of 12,778 slaves recorded as having entered Buenos Aires between 1606 and 1625, only 288 were legal entries.[3] What the numbers indicate is Argentina's exponential dependency on the slave trade during Spanish colonization. David Rock in *Argentina, 1516-1987: from Spanish colonization to Alfonsin* notes that the contraband and *asiento* trades of the early eighteenth century slowly transformed Buenos Aires. By 1740, he states that Buenos Aires had numerous brick houses, some of two stories, and that hide exporters were now the wealthy elite.[4] In essence, Buenos Aires' prosperity allowed for the purchase of more slaves to

help construct its buildings and participate in its labor needs in both the domestic and rural areas. By 1776, Buenos Aires was made the seat of a new Viceroyalty at which time it opened its port for European trade and became the gateway to the mines of Potosi.[5] The illegal slave trade that began during colonization continued well into Argentina's early independence. The African slaves who entered the port of Buenos Aires would come to face changing economic, political, and social conditions that were either advantageous or detrimental to their position within a "white" Argentine society—changes that help explain their alleged "disappearance" by the late 19th century.

In the Americas, the African Diaspora is difficult to view apart from the European quest for power, land acquisition, and profit. To understand the impact of the Transatlantic Slave Trade between 1450 and 1867, it is necessary to look at statistical data, which estimates that the volume of slaves transported through the Trans-Atlantic slave trade reached 11,698,000. Slaves who survived the passage from Africa into the Americas and parts of the Atlantic basin totaled 9,778,500 not including 56,000 *libertos* (freed slaves). In 1776, the Viceroyalty of Rio de la Plata was required to conduct a census. Information compiled for 1778 noted that 7, 236 slaves populated Argentina as Afro-Argentines.[6] This number is significant considering that in 1778 the total population of Argentina was 24, 363. In terms of percentages, the Afro-Argentines constructed 30% of Argentina's total population and was considered a majority minority during this time (the percentages differ within individual demographic locations).[7] It should be noted that the Bourbon Reforms, from the 1750s, whereby the state encouraged trade and invested in development, had opened greater opportunities for free black artisans and businesspeople in an effort to reduce the political power of the native-born Creole elite.[8] With the Crown's promotion of blacks and mulattoes in the militia (1778), its new slave codes (1784, 1789) and racial dispensation to nonwhites (1795) it becomes evident that the political reforms were a way for the Crown to form an alliance with its large subjugated class by giving the Afro-Argentines economic and social opportunities.[9] In *Race versus Class Association: The Afro-Argentines of Buenos Aires, 1850-1900* George Reid Andrews documents that the Buenos Aires' 1827 municipal census reflected 94 percent of the Afro-Argentines who listed a profession listed as manual laborers (52 percent of the "White" population listed the same), while as early as 1820 a small portion of Afro-Argentines worked in trades higher than that of artisans. A small majority found success as military officers, pharmacists, and as schoolteachers, while others found wealth and status as small business owners.[10] The legal changes that benefited Afro-Argentines did not preclude the racial tensions that would follow. White elites outraged by the reforms declared, "If *gracias al sacar* (purchased "Whiteness") were implemented, one can only expect movements that will scandalize and subvert the order established by the wise Laws that have governed us up until now."[11] The *pardos* represented what the white elite feared—inclusion and eventual dominance. What is equally important to note, is that *pardos* also reveal how the Afro-Argentines opted to "disappear" their race by choosing to purchase a "white" status, thus demonstrating that the Afro-Argentine actively initiated their decline in an effort to gain economic advancement and social inclusion. Racial issue continued throughout the 18th century, and become a core issue of the independence wars that broke out at the end of the colonial period, where nationalism would help contribute to the Afro-Argentine decline.

The Afro-Argentines and Independence

The first fifty years of Argentine independence (1810-1870) saw war, economic dislocation, and abolition.[12] The several wars that Argentina faced during it independence--The War of the Triple Alliance being the most costly in lives—presented yet another opportunity for Afro-Argentines to gain upward mobility and to label themselves as "white" individuals. At the start of Argentina's War of Independence, the Afro-Argentine population represented 9,615 within a total population of 62, 957. Their large population size proved useful to the governing caudillos, who needed bodies to fight against the various enemies looking to invade their new nation. To encourage their participation, free blacks were offered promotions to guarantee their allegiance to the war effort, and slaves were encouraged by "the mere promise of freedom, which the *libertos* were to win after fixed terms of service in the revolutionary armies."[13] According to George Reid Andrews in *The Afro-Argentine Officers of Buenos Aires Province, 1800-1860* Buenos Aires consisted of at least twelve all-black battalions and regiment between 1800 and 1860, and that 867 soldiers out of 5,000 listed in the military were conscripts in the Corps of Indios, Pardos and Morenos.[14] Though military service did not guarantee wealth, it did allow for social and political opportunity. Andrews states, "How else but through military service that men like Nicolás Carbrera, Manuel Barbarín, José Narbona, and Pablo Irrazábal were able to become friends and associates of governors, with their political activities and eventually their deaths reported and commented on in the Buenos Aires press."[15] The military was an avenue for the Afro-Argentines to become politically and socially active, but more importantly, it offered the Afro-Argentines an opportunity to act as citizens of a newly independent country. Karsten notes that in December of 1810 the revolutionary Junta granted black soldiers and black officers official equality with white troops.[16] In accordance to military roll call, the black officers could now add *Don* to their names, a distinction that was granted solely to "White" soldiers in the military, and which meant that black officers could now give orders to white soldiers. This encouraged the altering of military documents to reflect a "D" status next to a black officer's name. The officer's true racial ancestry was sought by comparing military documents to census and parish registers, which often stated *white, pardo, español,* or no mention of race in various documents associated with the officer in question (marriage certificates, offspring birth certificates, etc.) [17] The overall inconsistencies examined in legal documents hindered the possibility of assessing an accurate population size for the Afro-Argentine community; nonetheless, it was useful in divulging methods in which the Afro-Argentines were able to optimize political and social opportunities to further erase their African ancestry. Though a select few were able to achieve political and social prominence through their military service, either by legitimate or illegitimate means, the Afro-Argentine soldier still encountered racial indifference.

Regardless of legal racial distinction, the Afro-Argentine could not escape the color of his skin. In *Recruiting, drafting, and enlisting: two sides of the raising of military forces* Peter Karsten notes how Colonel Barcala was subjected to "snubs and insults so cutting that he left in disgust from a ball he attended…Lieutenant Colonel Cabrera, during political upheaval in 1820, was vilified in the Buenos Aires papers as 'the *pardo* Cabrera' and 'unworthy [by reason of] the low principles of his depraved background."[18] The Afro-Argentine men risked their lives and abandoned their trade (1810 census lists dual profession—the majority listed military and musician) in order to mobilize

and protect Argentina's sovereignty, and yet they were still ostracized.[19] An argument the Afro-Argentines would employ when confronted by Argentina's changing racial ideology, and the mass influx of European immigrants, who seized the opportunity to occupy positions previously held by the Afro-Argentine community in later half of the 19th century.

<u>Afro-Argentines in the Late 19th Century</u>

Argentina's modernization during the late 19th and early 20th century represented an export boom driven by the Second Industrial Revolution in Europe, which emphasized a need for raw materials to be utilized for the production of goods. Argentina possessed raw materials in abundance, which made it a hotbed for exportation and facilitated the economic wealth that Argentina would experience as a result of this exchange. It is important to note, that during modernization, the slave trade was no longer a factor. The importation of slaves had ceased. This time also represented the end of a two-decade political war between the Federalists, who wanted a federation of independent provinces, which the Afro-Argentines supported, against the Unitarios, who were proponents of a Unitary State in which Buenos Aires would be of central importance. After reclaiming control from the Federalists after the Battle of Cepeda, the Unitarians presented a different vision for the future of Argentina. They began constructing cultural and racial boundaries in line with European positivist ideology prevalent during that time. David Rock notes in *State Building and Political Movements in Argentina, 1860-1916* that Argentina had a fixation on "progress," which was akin to Social Darwinism. The "struggle for existence" and the notion of "inferior peoples" became the bases for division between Buenos Aires and its surrounding provinces, and between the civilized elite and the provincial

"barbarians" of which the Afro-Argentines were included.[20] This polemic is illustrated in Domingo Faustino Sarmiento's *Facundo: Civilizacion y Barbarie*, where Sarmiento depicts the "barbaric" Argentine countryside in comparison to the "civilized" city of Buenos Aires when speaking of Argentina's national identity.[21] Juan Bautista Alberdi, who was a member of the Generation of '37 with Sarmiento, noted that Argentina was populated by "inferior stock." Alberdi commented, "Put the 'roto,' the 'gaucho' the 'cholo' (all people of mixed blood) the basic unit of our masses through all the transformation of the best system of education; in a hundred years you will not make an English workman out of him, a man who will work hard, consume and live with dignity."[22] The alienation experienced by the Afro-Argentines is expressed in Percy Hintzen's *Diaspora, Globalization and the Politics of Identity* Hintzen states that "There is a common understanding of diasporic identity as the subjectivity produced out of a collective phenomenon of displacement and dispersal from a real or imagined homeland."[23] The Afro-Argentine suffered from what is termed as the "cultural politics of exclusion" in both identity and citizenship. Unlike Argentina's period of colonization and independence, where the Afro-Argentines were able to negotiate ways in which to "Whiten" themselves within Argentine society, the late 19th century presented circumstances in which their "disappearance" would result from sources beyond their control, a huge factor being the government's support of mass European immigration onto Argentine soil. The new government's support for the influx of European immigrants can be seen as two-fold: First, they wanted to undercut the bargaining position of native born "national" laborers by inundating the labor market with immigrant workers (before Argentina's modernization, the Afro-Argentine worker had the upper-hand in negotiations) Second,

they wanted to improve Argentina's "barbaric" demographic by virtue of European "whitening" (blanqueamiento).[24] Their support of the Federalists during the Wars of Independence added fuel to existing scientific racist dictates and provided an avenue for progressives, like President Roca, to prevent the Afro-Argentines from succeeding within Argentina's developing "white" identity. European immigration would ultimately replace Afro-Argentine labor—diminishing their presence as vital citizens of the Argentine nation, and presumably "disappear" their racial class within its demographic landscape. Census figures for 1887 show that the Afro-Argentine population was 8, 005 while the total population was 433, 375.[25] What this signifies is that the Afro-Argentine represented 2 per cent of the total population. Alejandro Frigerio notes George Reid Andrew's distrust in these figures, as he proposes that the Afro-Argentine's were "underrepresented, distrustful of census takers, and young Afro-Argentine males were undernumerated."[26] Professor Andrew's revelation alludes to the difficulty the Afro-Argentine condition represents when trying to gain a better understanding of their population's demise. As mentioned previously in my paper, the Afro-Argentines were able to "disappear" their racial category through legal and illegals means. The categorization of "triguenos" in census data further complicates the issue of garnering an accurate Afro-Argentine population size. Other factors are also to blame for the loss of the Afro-Argentine presences within Argentina.

It is believed that the major cause for the Afro-Argentine "disappearance" was due to the loss of Afro-Argentine males during Argentina's several wars, and that miscegenation which occurred between the Afro-Argentines with non-colored individuals contributed greatly to their population decline, the latter being worthy of further review. Lowell Gundmundson in *Black into White in Nineteenth Century Spanish America: Afro-American Assimilation in Argentina and Costa Rica* references George Reid Andrews when he notes that in 1810, 2.2 per cent of men and 2.5 per cent of women were married to non-colored men, while in 1827 the percentages rose to 3.0 per cent for men and 6.0 per cent for women.[27] An article published by BMC Medical Genetics on May 6, 2008 confirmed George Reid Andrews statistical data regarding miscegenation of Afro-Argentines with European immigrants. Carlos M. Cotorruelo, et al, studied "103 white trios (father, mother, and child, 309 samples) from the city of Rosario for the purpose of analyzing FY and RH blood group alleles attributed to Africans that could have clinical implications in the immune destruction of erythrocytes (a red blood cell)." [28] The results of this study found that "4.68 per cent of the present gene pool is composed by alleles primarily associated with African ancestry and about 10 per cent carried at least one RH or FY allele that is predominantly observed among African populations."[29] It was concluded by Cotorruelo, et al, that the miscegenation between African slaves and European immigrants facilitated the "disappearing" of black physical characteristics within the Argentine population and contests the notion that Argentina is solely comprised of Caucasian European genetics. Gundmundson adds to the discussion by suggesting that the sexual imbalance between Afro-Argentine females and males in rural and urban areas (women were more prevalent in urban areas and men in rural areas) combined with their low infant mortality and low marital fertility rates contributed greatly to the Afro-Argentine decline as they were not able to replenish their population size (the slave trade had ceased by this time).[30] Geographical distance was not the only

challenge facing the Afro-Argentine community. Class division became a problem for the Afro-Argentine community as they were divided by unionization in the lower class and by negritude and assimilation/acculturation in the middle class.

G. R. Coulthard documents that negritude aimed to "loosen the stranglehold of European or 'Western' culture, weakening the prestige of European civilization with its claims to exclusive cultural tutelage…based on native, and often racial foundations." [31] No other Afro-Argentine wrote more eloquently of their feeling of opposition than Casildo G. Thompson. In 1877, he wrote, "Song of Africa," which turned the table on colonial dependence and ideology. His poem placed the white man as the savage and challenged the creation of the black other within an Afrocentristic (negritude) prose, whose aim was to achieve a collective liberty.[32] Jorje F. Ford also wrote of the importance of returning to Africa when he stated, "It is necessary for the Afro-Argentine to return to Africa, there is his crib, his field to sow, his brothers who await him, his compatriots who call for him (translation is mine)."[33] Ford argues that as long as the Afro-Argentines live within the "others" continent, they will not have a voice and they will live isolated…because the men of the "other" continent will not like to see themselves overshadowed by them, the Afro-Argentine (translation is mine)[34] Negritude would not succeed in bringing the Afro community together, instead, negritude became synonymous with the black middle class whose aim was to validate their presence, which did not include the poor Afro-Argentines, who were illiterate and who were fighting to survive the changing economic, social, and racial conditions they faced. The poor Afro-Argentine wanted to unionize and to remain true to their African origins. They were not willing to join the middle class in their quest for inclusion.

The newspapers *La Juventud* and *La Broma* symbolize the opposing views found within the Afro-Argentine community. La Juventud representing the laborer who leaned toward socialist views and the need to remain connected to their African roots, as opposed to La Broma, which leaned toward the black middle class who welcomed the idea of individual wealth and white assimilation. Marvin Lewis explains in *Afro-Argentine Discourse: Another Dimension of the Black Diaspora* that blacks were aware of their circumstance and generated "spirited" debates that separated the community." [35] The lack of cohesion mentioned by both Lewis and Andrews comes squarely into view. Though Afro-Argentines in favor of assimilation gained favorable mention by the white elite, they would always be thought of as black before they would be thought of as Argentines. Alejandro Frigerio's *Blacks in Argentina: Contested Representations of Culture and Ethnicity* notes that Reid Andrews, when speaking of Afro-Argentine newspapers, states, "they showed no concern for a diminishing population—although they were worried about the socio-economic conditions in which most of the black community lived."[36] This is significant when compared to Cottrol's assessment that "class was probably more important to the lives of Afro-Latinos."[37] Without question, changing political, social, and economic factors played a significant role in constructing the bleak conditions facing the Afro-Argentine community as they entered the 20th century. However, the Afro-Argentine's desire to purchase a "white" status when favorable political and economical conditions arose, and their willingness to allow the altering of legal documents to improve their social standing and that of their family, also played a crucial part in their "disappearance."

Conclusion

Today, the Afro-Argentines still live below the poverty line, they continue to work in low-wage jobs, and their presence is still not recognized by the nation of their birth. However, Africa Vive, Afroamerica XXI, and the Organization of Africans in the Americas (OAA) are just a few organizations working against the notion of Afro-Argentines as static artifacts of a colonial past. Having been built from exclusion and invisibility, the aim of the Afro-Argentines today, is to "reappear" so to speak, the African heritage that greatly contributed to all aspects of society uniquely considered Argentine. My hope is that these organizations are able to lessen the divisions that continue to exist within the Afro-Argentine community. I would like nothing more than to see Argentina embrace the rich African heritage that it possesses, but more importantly, I would like to see the Afro-Argentines recognized and respected as valued Argentine citizens.

References

[1] Green, James N. "Argentina Progress and Stalemate." *Modern Latin America.* By Thomas E. Skidmore and Peter H. Smith. 7th ed. New York: Oxford UP, 2010. 244-45. Print.

[2] Edwards, Erika D. "Argentina: Afro-Argentines." *Encyclopedia of the African Diaspora: Origins, Experiences, and Culture.* Ed. Davies Carole. Boyce. Vol. 1. Santa Barbara, CA: ABC-CLIO, 2008. 92-95. Print.

[3] Andrews, George Reid. *The Afro-Argentines of Buenos Aires, 1800-1900.* Madison, Wisc.: University of Wisconsin, 1980. 24.Print.

[4] Rock, David, and David Rock. *Argentina, 1516-1987: From Spanish Colonization to Alfonsín.* Berkeley: University of California, 1987.15.Print.

[5] Rock, David, and David Rock. "The Rise of Buenos Aires, 1680-1810." *Argentina, 1516-1987: From Spanish Colonization to Alfonsi%u0301n.* Berkeley: University of California, 1987. 62-63. Print.

[6] Lovejoy, Paul E. "The Volume of the Atlantic Slave Trade: A Synthesis." *The Journal of African History* 23.04 (1982): 473-501. Print.

[7] Andrews, George Reid. "Race Versus Class Association: The Afro-Argentines of Buenos Aires, 1850–1900." *Journal of Latin American Studies* 11.01 (1979): 21. Print.

[8] Andrews, George Reid. "1800." *Afro-Latin America, 1800-2000.* Oxford: Oxford UP, 2004. 47. Print.

[9] Andrews, George Reid. "1800." *Afro-Latin America, 1800-2000.* Oxford: Oxford UP, 2004. 49. Print.

[10] Andrews, George Reid. "Race Versus Class Association: The Afro-Argentines of Buenos Aires, 1850–1900." *Journal of Latin American Studies* 11.01 (1979): 21. Print.

[11] Andrews, George Reid. "1800." *Afro-Latin America, 1800-2000.* Oxford: Oxford UP, 2004. 49. Print.

[12] Andrews, George Reid. "Black Workers in the Export Years: Latin America, 1880–1930." *International Labor and Working-Class History* 51 (1997): 9. Print.

[13] Andrews, George Reid. "The Afro-Argentine Officers of Buenos Aires Province, 1800-1860." *JSTOR* 64.2: 91. Print.

[14] Andrews, George Reid. "The Afro-Argentine Officers of Buenos Aires Province, 1800-1860." *JSTOR* 64.2: 115. Print.

[15] Ibid

[16] Karsten, Peter. "Afro-Argentine Officers." *Recruiting, Drafting, and Enlisting: Two Sides of the Raising of Military Forces.* New York: Garland Pub., 1998. 88-89. Print.

[17] Andrews, George Reid. "The Afro-Argentine Officers of Buenos Aires Province, 1800-1860." *JSTOR* 64.2: 88-90. Print.

[18] Karsten, Peter. "Afro-Argentine Officers." *Recruiting, Drafting, and Enlisting: Two Sides of the Raising of Military Forces.* New York: Garland Pub., 1998. 96. Print.

[19] ibid 95

[20] Rock, David. "Order, Progress, and Revolt." *State Building and Political Movements in Argentina, 1860-1916.* Stanford, CA: Stanford UP, 2002. 109-10. Print.

[21] Sarmiento, Domingo Faustino. *Facundo: Civilizacion Y Barbarie.* New York: Doubleday &, 1961. Print.

[22] Coulthard, G. R. "Parallelisms and Divergencies between "Negritude" and "Indigenismo"" *JSTOR* 8.1 (1968): 35. Institute of Caribbean Studies, UPR, Rio Piedras Campus. Web. 10 June 2011. <http://www.jstor.org/stable/275612044>.

[23] Hintzen, Percy C. "Diaspora, Globalization and the Politics of Identity." *Les Diasporas Dans Le Monde Contemporain: Un Etat Des Lieux.* 1992. 107. Print.

[24] Andrews, George Reid. "Black Workers in the Export Years: Latin America, 1880–1930." *International Labor and Working-Class History* 51 (1997): 13. Print.

[25] Andrews, George Reid. *The Afro-Argentines of Buenos Aires, 1800-1900.* Madison, Wisc.: University of Wisconsin, 1980.66.Print.

[26] Frigerio, Alejandro. "Blacks in Argentina: Contested Representation of Culture and Ethnicity." 2000 Meeting of the Latin American Studies Association: Lo "afro" En America Latina: Debates Sobre Cultura, Politica Y Poder. Hyatt Regency, Miami. 06 June 2011. Reading.

[27] Gudmundson, Lowell. "Black into White in Nineteenth Century Spanish America: Afro-American Assimilation in Argentina and Costa Rica." *Journal of Comparative Studies* 5.1 (1984): 34-49. *Slavery and Abolition.* Web. 12 Dec. 2011. <http://www.mtholyoke.edu/acad/latam/SLAVERY-ABOLITION.html>.

[28] Cotorruelo, Carlos M., Silvana EG. Borras, Liliana L. Racca, Claudia S. Biondi, and Amelia L. Racca. Distributio of the FYB[es] and RHCE*ce(733G) alleles in an Argentinean population: Implications for transfusion medicine. 6 May 2008. Raw data. BMC Medical Genetics, Rosario, Argentina.

[29] Ibid

[30] Gudmundson, Lowell. "Black into White in Nineteenth Century Spanish America: Afro-American Assimilation in Argentina and Costa Rica." *Journal of Comparative Studies* 5.1 (1984): 34-49. *Slavery and Abolition.* Web. 12 Dec. 2011. <http://www.mtholyoke.edu/acad/latam/SLAVERY-ABOLITION.html>.

[31] Coulthard, G. R. "Parallelisms and Divergencies between "Negritude" and "Indigenismo"" *JSTOR* 8.1 (1968): 31. Institute of Caribbean Studies, UPR, Rio Piedras Campus. Web. 10 June 2011. <http://www.jstor.org/stable/275612044>.

[32] Lewis, Marvin A. *Afro-Argentine Discourse: Another Dimension of the Black Diaspora.* Columbia: University of Missouri, 1996. 52-54. Print.

[33] Ford, Jorje Miguel. "Letras De La Memoria." *Benemeritos De Mi Estirpe: Esbozos Sociales.* Buenos Aires: Catalogos Ed., 2002. 19. Print.

[34] Ibid

[35] Lewis, Marvin A. *Afro-Argentine Discourse: Another Dimension of the Black Diaspora.* Columbia: University of Missouri, 1996. 5-7.Print.

[36] Frigerio, Alejandro. "Blacks in Argentina: Contested Representation of Culture and Ethnicity." 2000 Meeting of the Latin American Studies Association: Lo "afro" En America Latina: Debates Sobre Cultura, Politica Y Poder. Hyatt Regency, Miami. 06 June 2011. Reading.

[37] Cottrol, Robert J. "From Emancipation to Equality: The Afro-Latin's Unfinished Struggle." *American Quarterly* 57.2 (2005): 573-81. Print.