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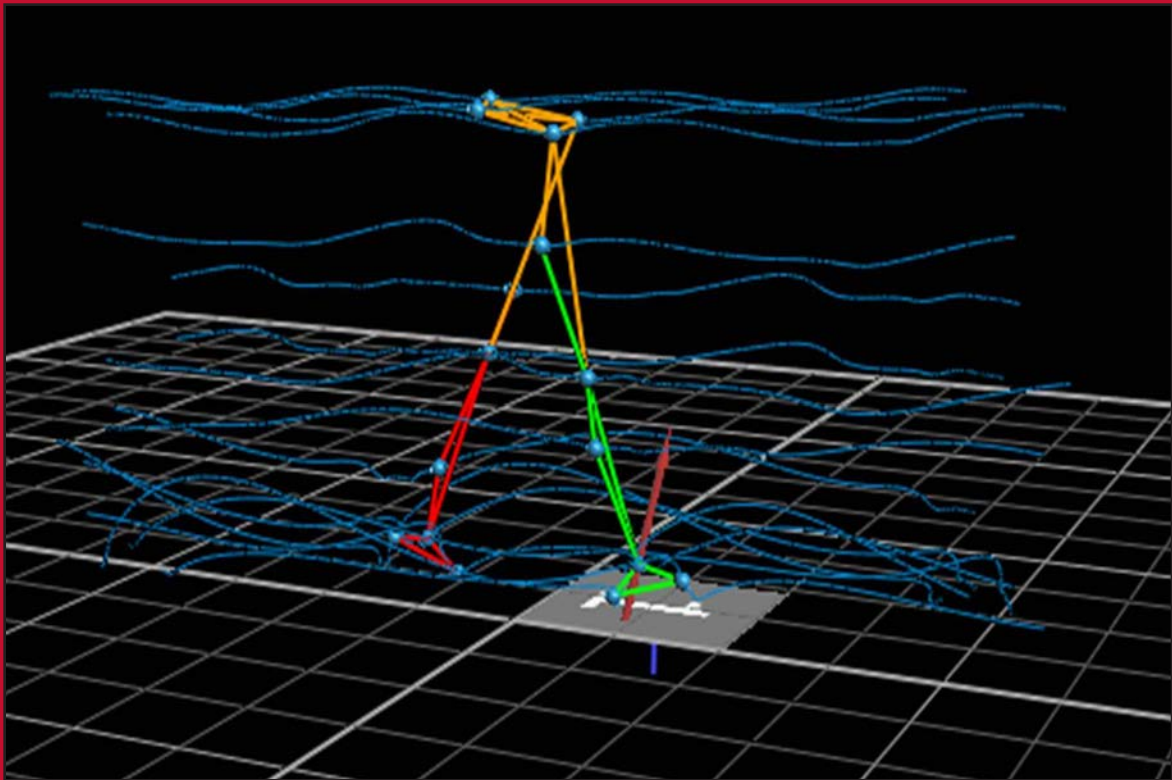
BSU's eight MX-T10S-camera Vicon motion-capture system, used in biomechanics research, depicts 3D motion from any angle.

Amoako, Arnold, Barrett, Booth, Capaniello, Champagne, Corcoran, Diehl, Gallinari, Grant, Hoyt, LaFavre, Lonergan, Maynard, O'Sullivan, Parker, Senst, Wilson

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On the Cover:
Faculty and students conducting biomechanics research, such as walking-gait analyses, utilize BSU's state-of-the-art, eight MX-T10S-camera Vicon motion-capture system, which depicts 3D motion from any angle. The image on the cover was generated by first placing reflective markers at the participant's hips (greater trochanter of the femur), thighs (mid shaft of the femur), knees (lateral epicondyle of the femur), shanks (mid shaft of the tibia), ankles (lateral malleolus of the fibula), heels (base of the calcaneus) and toes (base of the second metatarsal). The joint markers were then captured by the Vicon Nexus software to assess walking gait and locomotion three-dimensionally. The wavy blue lines in the image represent the tracking of movement at the joints. The gray square labeled "1" is a force plate, which measures the force of movement. The red arrow indicates the magnitude and direction of the ground reaction force. Motion-capture technology facilitates the biomechanics research conducted by Dr. Tong-Ching Tom Wu (Associate Professor of Movement Arts, Health Promotion and Leisure Studies) and his students Tyler Champagne (p. 65) and Ariana LaFavre (p. 131), whose investigations of walking gait help improve fundamental human motion.

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Environmental Behavior Factors Influencing the Outlook of Chinese College Students on the Domestic Adoption of Solar Photovoltaic Technology

EMMANUEL AMOAKO AND JOHN TAYLOR WILSON

Abstract

Over the last century, China has soared in economic growth and now stands as the world's second-largest economy. However, rapid economic growth has given rise to environmental degradation. New visions and innovative technological systems, such as domestic solar photovoltaic systems, have been introduced to mitigate pollution from power generation. Despite the positive individual and environmental benefits associated with adopting this innovative system, adoption rates of solar PV system remain comparatively low in China. Survey data targeting environmental behavior factors were distributed among Chinese college students in Shanghai and Beijing to facilitate understanding of the low adoption rate and to shed light on the environmental behavior dimensions influencing Chinese students regarding residential rooftop solar PV adoption. The findings of this study suggest that Chinese college students have high levels of concern for the environment and hold pro-environmental beliefs, suggesting a high potential for their engaging in environmental-oriented purchasing, such as purchasing solar PV technology. However, other studies have indicated a value-action gap, which means that individuals with pro-environmental attitudes will not always invest in green products. Consumer-behavior researchers and those interested in solar PV adoption in China might reference the results of this research.

1. Introduction

1.1 China Solar PV Industry

Over the last century, China has soared in economic growth and now stands as the world's second-largest economy (Haggard, Yao, & Cai, 2014). China's rapid economic growth has led to a rising demand for energy, so China has become the second-largest consumer of energy, after the United States (Crompton & Wu, 2005; Hu & Wang, 2006; Li & Zhang, 2007; Xiao, Dunlap & Hong, 2013). China is the leading producer and consumer of coal in the world, as it is responsible for about 25% worldwide (Haggard, Yao, & Cai, 2014; Liu & Diamond, 2005). Coal is the nation's primary energy source and the main contributor to its air pollution; however, China's use of coal has declined as the use of oil, natural gas, and hydroelectric power have increased in recent years (Liu & Diamond, 2005).

Given the common perception of the Chinese populace as not being attuned to their environmental problems, Chinese people are developing and expressing high concerns for the environment and are not as environmentally apathetic as most people have thought (Chan, 2001). The mass evidence of pollution generated by industrial production and energy usage has prompted environmental concerns among affluent and educated Chinese citizens (Mark & Law, 2015). New visions and innovative technological systems, such as solar photovoltaic (PV) systems, have been deployed to serve as one of the alternatives for efficient power generation to mitigate pollution and to promote sustainable development.

Unlike the conventional pathway of generating electricity, where electricity is generated from fossil fuels such as coal and natural gas, solar photovoltaic systems convert light energy into electrical current through semiconductors where light causes matter to emit electrons. PV power generation has a promising development potential of replacing fossil fuel with the abundant resources and energy made available from the sun without creating emissions as a byproduct during its operations (Zhang & He, 2013; Zou, Du, Ren, Sovacool, Zhang, & Mao, 2016).

Applications of this technological advancement are categorized as either centralized or distributed. Centralized solar applications are typically large-scale systems administered by utility companies, while decentralized applications entail solar PV installations on buildings, including residential buildings, business buildings, warehouses, airports, and others. It is important to note that this research places focus on distributed applica-

tion solar PV technology, especially rooftop residential systems. According to the plan of the National Energy Administration, China will extend the development of distributed energy applications in cities. By 2020, the total installed capacity of urban building photovoltaic systems will achieve 1 million kW (Dong, Feng, Sun, Cai, Li & Yang, 2016).

China's domestic solar PV market has experienced astonishingly rapid growth in recent years (Zhang & He, 2013), with the upsurge of demand from the world contributing primarily to this immense growth (Zhang & He, 2013; Zhi, Sun, Li, Xu & Su, 2014). The production of solar PV in China was primarily for export to foreign markets until the anti-dumping and anti-subsidy investigations initiated by the United States and the European Union (EU) in 2011 (Zhang & He, 2013; Don, et al., 2016). It was in this context that China had to focus on the development of its domestic market.

Solar PV technology has been acknowledged to produce less pollution and serves as a sustainable alternative in generating efficient renewable energy (Faiers & Neame, 2006). Despite the positive environmental impact carried by the design of solar PV, this micro-generation technology has not taken root as a popular power generating choice among the people of China. China stands as the largest producer of solar PV systems in the world as it contributed more than 50% of the world production from 2009 to 2013 (Zou, et al., 2016). In 2010, Suntech, JA Solar, Yingli Green Energy and Trina, with shares of 6.6%, 6.1%, 4.7% and 4.7% of global cell production respectively, represented China as they stood as the world's four largest Chinese enterprises among the world's five largest PV manufacturers (Zhi,

Sun, Li, Xu & Su, 2014). However, even with China's dominance in the manufacturing of PV modules, the marketdiffusion and adoption of solar photovoltaic systems in China is not ideal (Zou, et al., 2016).

According to the China Photovoltaic Industry Alliance (CPIA) report released in January 2016, the Chinese PV market reached 43 GW installed capacity by the end of 2015, surpassing Germany's capacity of 40 GW and becoming the number one in the world (Don, et al., 2016). However, even with this high status of growth in the PV market, the residential rooftop system only accounts for 16% of the aggregate installed PV solar capacity dictated above (Don, et al., 2016).

An investigation conducted by Labay and Kinnear (1981) highlighted the influential role young educated members among families play in solar adoption. Their research suggested that young educated people have a high likelihood of adopting solar PV systems. Young educated individuals are most likely to adopt due to their knowledge regarding solar energy and the benefits accompanied by the technology. A contributing factor to the slow adoption rate of solar PV was connected to the lack of consumer knowledge about this innovative system (Islam, 2014). Thus, young educated consumers such as college students have the ability to influence others, especially their loved ones in their household, to adopt solar PV. Due to their power to influence others, targeting and making an effort to understand the attitude of college students toward solar PV is significant, as their outlook could serve as a means of getting a glimpse offuture solar adoption.

Gadenne et al. (2011) pointed out six environmen-tal-behavior factors, including general environmental beliefs, environmental norms, drivers of environmental behavior, barriers toenvironmental behavior, social or community influence, environmental attitudes, and government policies and subsidies. The particular interest of this paper is to study three out of the above six antecedents of the environmental behavior factors, namely general environmental beliefs, environmental norms, and environmental barriers.

1.2 Antecedents of Environmental Behaviors

One way to understand this gap between large PV installed capacity and lower adoption is to investigate those environmental behavior factors. This research followed Gadenne, Sharma, Kerr, and Smith's (2011) frame work.

1.2.1 General environmental beliefs.

Positive environmental behaviors have been observed among consumers who are familiar or aware of environmental issues; with that, individuals with strong pro-environmental beliefs typically engage in environmentally-oriented purchasing behaviors (Gadenne, et al., 2011). For instance, a general environmental belief of a consumer could be that everybody should be committed to developing and making efforts to minimize our overall ecological footprint to sustain the environment (Niemeyer, 2010). In this research, the general environmental beliefs factor has two sub-factors; one is environmental limits factor (ELF) and another is environmental adoption factor (EAF).

1.2.2 Environmental norms.

A feeling of responsibility is evoked in consumers when information on environmental issues and potential

future consequences of their actions are made known to them. Normative action is the side effect as consumers become aware of environmental issues and foresee it being a reality. In that respect, predominant adoption of an innovation transitions into a norm and thus creates an enticing appeal that leads to others adopting that practice. A prime example is recycling, which has become a normative behavior (Gadenne, et al., 2011). Relating to this factor is price norms factor (PNF) and action norms factor (ANF).

1.2.3 Environmental barriers.

Environmental barriers are the prominent factors that discourage consumers from making ecofriendly purchases. Barriers involving "economic reasons, primarily initial cost and expected or long paybacks, the need for more information, demand for greater additional/professional assistance, lack of time, lack of knowledge and trust in the provider, concern over product performance, poor brand image and lack of information on the environmental and social performance of both products and manufacturers" (Gadenne, et al., 2011) have been noted by previous researchers as forces hindering the adoption of green product or systems such solar PV. These barriers are believed to be: professional assistance factor (PAF), Cost Factor (CF), and Regulation factor (RF).

Following Gadenne et al.'s (2011) three environmental behavior factors, the research aims to understand the environmental behaviors of the Chinese younger generation with higher education and how these behaviors influence the current or the future solar PV adoption by using primary data collected in China in May 2016. The following section starts with a literature review for this research. Section 3 elaborates on the methodology and survey design; Section 4 discusses the statistical results in detail; and the last section concludes the paper with managerial implications and future research.

2. Literature Review

As discussed earlier, environmental concerns have accompanied salient environmental behavior and attitudes among Chinese citizens, especially those in the cities, in recent years (Edmonds, 1998). Xiao (2013) addressed education as being a powerful predictor of environmental concern between the Chinese. Xiao's (2013) work supported that the higher educated, males, government employees, residents of large cities, and those affiliated with the Chinese Communist Party are more environmentally concerned than their counterparts. According to Mark and Law (2015), environmental concern refers to consumers' emotional reactions, such as worries, dislikes, and compassion, toward the environmental problems.

Individuals tend to adopt positive environmental behavior as they become more knowledgeable about environmental issues (Tanner & Kast, 2003), and, in many cases, typically engage in environmentally oriented purchasing behaviors (Pickett-Baker & Ozaki, 2008; Mark & Law, 2015). Sharma and Gadenne (2014) noted,

> Environmental behaviors and green practices include recycling, waste reduction, energy saving, energy conservation, travel mode choice, travel behavior, car-use, bus-use, public transportation, cycling, walking, pro-environmental mobility behavior, water conservation, organic food, green consumerism, green purchases, ethical behavior,

environment-friendly buying behavior, environmental consumer behavior, ecological consumer behavior, green consumption, green consumer behavior, ecological behavior, pro-environmental behavior, conservationism, environment-friendly behavior, environment protection behavior, ecological behavior and personal norms, ecological behavior and morality, and pro-environmental attitudes. (p. 26)

In that context, Whitmarsh and O'Neil (2010) have proposed looking at environmental behavior in four broad categories: domestic energy and water use, waste management and recycling, energy-efficient vehicles, and eco-friendly buying practices. Gadenne et al. (2011) have made links between consumer attitudes and energy-saving behaviors by looking at antecedents of environmental behavior factors: general environmental beliefs, environmental norms, drivers of environmental behavior, barriers to environmental behavior, social or community influence, environmental attitudes, and government policies and subsides. They found that an individual's attitude toward green purchase is influenced by all of the factors.

Many researchers have broadly debated the adoption and diffusion of green technological advancements such as residential solar energy systems. Labay & Kinnear (1981) investigated the purchase-decision process of residential solar energy considering both adopters and non-adopters. Their work indicated that young, educated consumers were the parties most likely to adopt solar PV systems. Factors affecting the decision-making processes of adoption include: aesthetics, knowledge, cost, facility ownership, psychology, geograph-

ical locations, sociocultural traditions, demographic distributions, and economic status and policies (Li X., Li H. & Wang, 2013). Faiers & Neame's (2006) work suggested that unless electricity prices rise and more efficient panels are developed, solar energy or solar PV will not be competitive with conventionally produced electricity. "Generally speaking, the global electricity supply is dominated by coal, natural gas, hydroelectric, nuclear and oil power plants, which generate 40.9, 20.1, 16.4, 14.7, and 5.7% of electricity respectively" (Chen, 2014).

Various studies have made investigations to bring to light factors influencing the adoption of solar PV power diffusion in China (Dong, et al., 2016; Li, et al., 2013). Li, et al. (2013) investigated the willingness of Chinese farmers in rural China to transition to solar houses by examining nine factors. They found that the desire to improve quality of life, government commitments, and neighbor/friends' assessments contributed significantly to the willingness of Chinese farmers to adopt solar houses. Dong, et al. (2016) explored the development of photovoltaic by diving into the policy options in developing distributed generation in China; they discussed four aspects: polices, regulations, financing channels, and development patterns for promoting energy production and innovation of energy utilization.

Previous explorations, in an effort to gain insight into solar PV adoption, have revolved around policies, regulations, financial barriers, consumer behavior, and other factors. In order to establish a differentiating factor, this paper examines the highlighted environmental-behavior factors for educated Chinese citizens, specifically Chinese college students, to get a comprehensive

Table 1. Demographics Information

		(%)
Gender	Male	52.1
	Female	47.9
Employed	Yes	7.1
	No	92.9
Degree concentration	Science	4.2
	Engineering	56.8
	Humanities	10.0
	Business	16.9
	Other	12.2
Geographic Distribution	North	28.9
	Northeast	6.3
	East	31.1
	Southwest	6.3
	Northwest	6.5
	South central	21.0

glimpse of their perspectives on adopting domestic solar PV technology.

3.Methodology

3.1 Data Collection

Surveys were distributed among a random sample of 452 post-secondary students of Beijing Jiaotong University and Shanghai Normal University in China. The questionnaires were administered to undergraduate and graduate students in their classrooms; this was made possible due to the partnership between our university and these two institutions of higher education in China. Prior to the start of every survey-taking session, there was a brief introduction elaborating on the purpose of this research. The surveys that were distributed consisted of 51 questions and 4 sections. The first section asked whether they had already adopted solar PV and/or their future plans regarding solar PV. The second section included questions relating to cultural values and preferences, which was the focus of another working

Chart 1. Descriptive statistics

analysis, and SPSS to construct cross-tab tables.

3.2 Survey Design

Our survey adopted measures from Gadenne et al. (2011). We focused on three of the environmental behavior factors described in their framework: (a) environmental limits and environmental adoption factors for general environmental beliefs; (b) price norm and action norm factors for environmental norms; and (c) professional assistance, cost, and regulation factors for environmental barriers. In order to get a sense of the environmental behaviors of our respondents concerning energy savings and solar PV adoption, we designed our survey with predominant items or questions targeting the aforementioned sub-factors relating to each of the three major environmental behavior factors. All of the items were analyzed on a 5-point Likert scale, where 1 = strongly disagree and 5 = strongly agree. Because most of the Chinese college students had had years of English education and a good understanding of English in writing, the questionnaire was in English. However, during the distribution process, if they asked for help with understanding some wording, our researchers offered very basic help.

As Table 1 shows, male and female respondents were evenly distributed; 52.11% of the respondents were male and 47.9% female. A great majority (92.9%) of the respondents were unemployed, which was not much of a surprise to us as they were preoccupied with schooling and supported by their parents or guardians. Furthermore, a large percentage (56.8%) of our participants were in the process of earning an undergraduate or graduate degree in engineering, with Business (16.9%) and Humanities (10.0%) following behind.

paper. The third section was designed to highlight environmental-behavior variables such as general environmental beliefs, environmental norms, and environmental barriers; in the last section of the survey, questions were asked concerning demographics. Survey data collected from the college students was analyzed utilizing Excel to initiate data inputs and conduct basic statistical

Table 2. Cross-tab Analysis on ELF1

Environmental Limits Factor (ELF1)		The earth is like a spaceship with only limited room and resources.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	9.6%	18.1%	7.4%	34.2%	30.7%	100.0%
	Yes	8.3%	16.7%	13.1%	33.3%	28.6%	100.0%
Total		9.4%	17.8%	8.5%	34.1%	30.3%	100.0%

Table 3. Cross-tab Analysis on ELF2

Environmental Limits Factor (ELF2)		There are limits to which our industrialized society can expand.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	3.9%	13.2%	13.0%	52.4%	17.5%	100.0%
	Yes	3.6%	14.3%	20.2%	38.1%	23.8%	100.0%
Total		3.9%	13.4%	14.4%	49.7%	18.7%	100.0%

Table 4. Cross-tab Analysis on ELF3

Environmental Limits Factor (ELF3)		When humans interfere with nature it often has disastrous consequences.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	5.0%	13.1%	26.8%	36.0%	19.0%	100.0%
	Yes	4.7%	10.6%	28.2%	37.6%	18.8%	100.0%
Total		5.0%	12.6%	27.1%	36.3%	19.0%	100.0%

The greatest number of respondents (31.1%) resided in the Eastern region of the country (Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong).

As shown in Chart 1, among the 452 respondents, 18.81% indicated the utilization of solar PV in their homes. Domestic solar PV adoption is relatively low among our participants as our data showed 81.19% had not adopted it. Nevertheless, a large percentage of respondents showed interest in the adoption of solar PV in later years. Overall, the current installation is low. The future installation in terms of 10-year plans is increasing, but still not very promising; with that, the 20-year plan doesn't increase much (45.99%).

5.2 Cross-Tab Analysis

A cross-tabulation analysis tool on SPSS was implemented to analyze the relationship between student adopters and non-adopters, and their environmental behaviors and attitudes about the adoption of domestic solar PV technology.

5.2.1 Environmental limits factor (ELF).

Environmental limits factor (ELF) is among the subgroups of environmental beliefs; it shows people's attitudes concerning the environment. The questionnaire had three ELF questions. "The earth is like a spaceship with only limited room and resources" (ELF1); "There are limits to which our industrialized society can expand'(ELF2); "When humans interfere with nature it often has disastrous consequences" (ELF3).

As shown in Table 2, 61.9% of student adopters agreed or strongly agreed with ELF1, while 64.9% of student non-adopters also were in agreement. This revealed that our respondents (both adopters and non-adopters) have a good sense of the importance of being sustainable as they acknowledge the limited resources of our planet.

Non-adopters showed a high level of agreement (70.2%)

Table 5. Cross-tab Analysis on EAF1

Environmental adoption factor (EAF1)		Plants and animals exist primarily to be used by humans.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	32.4%	35.7%	10.7%	15.4%	5.8%	100.0%
	Yes	31.8%	37.6%	15.3%	11.8%	3.5%	100.0%
Total		32.3%	36.1%	11.6%	14.7%	5.3%	100.0%

Table 6. Cross-tab Analysis on EAF2

Environmental adoption factor (EAF2)		Humankind was destined to rule over the rest of nature.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	32.1%	33.5%	14.8%	15.1%	4.5%	100.0%
	Yes	25.3%	30.1%	20.5%	16.9%	7.2%	100.0%
Total		30.8%	32.9%	15.9%	15.4%	5.0%	100.0%

Table 7. Cross-tab Analysis on EAF3

Environmental adoption factor (EAF3)		Humans have the right to modify the natural environment to suit their needs.					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	23.1%	33.5%	19.2%	18.7%	5.5%	100.0%
	Yes	24.7%	38.8%	12.9%	20.0%	3.5%	100.0%
Total		23.4%	34.5%	18.0%	18.9%	5.1%	100.0%

with ELF2. Current installers indicated strong support for this factor, as 61.9% agreed or strongly agreed. By agreeing with this statement, they showed concern for the environment, as industrialization typically leads to expansion to lands that typically serve as a habitat for other organisms or species.

A large percentage of student adopters and non-adopters agree or strongly agree with ELF3, 56.4% and 55%, respectively. Respondents indicated strong association with the ELF3 variable, which means that they assume a high responsibility of protecting nature and are knowledgeable of the possible consequences that will accompany careless actions if nature is not protected.

5.2.2 Environmental adoption factor (EAF).
Environmental adoption factor (EAF) is the second sub-factor of general environmental belief. To high-

light respondents' connection to EAF, question items concerning "Plants and animals exist primarily to be used by humans"(EAF1); "Humankind was destined to rule over the rest of nature" (EAF2); and "Humans have the right to modify the natural environment to suit their needs" (EAF3) were considered.

A large percentage of our respondents (69.1% of adopters and 68.1% of non-adopters) disagreed or strongly disagreed with EAF1, which indicates their high awareness of proper management of earth's resources.

Respondents reflected a low connection with EAF2, as 55.4% of adopters and 65.6% of non-adopters disagreed or strongly disagreed with the supremacy of humans over the rest of nature, suggesting evidence of ecological behavior.

Adopters (63.2%) and non-adopters (56.6%) showed high disagreement with EAF3, indicating participants' awareness about the importance of the natural environment. 5.2.3 Price norms factor (PNF). The price norms factor (PNF) represents one of the twosub-factors of Environmental Norms. This variable exposes participants' sensitivity to added expenses and investing more financial resources in protecting the environment. To measure this sub-factor we imposed question variables regarding "I would be prepared to pay higher prices overall in order to protect the environment" (PNF1); "I would be prepared to spend $5 more per week for everyday items in order to protect the environment" (PNF2); "I would be prepared to reduce my standard of living in order to protect the environment" (PNF3). Among the respondents, 69% of adopters and 56.9% of non-adopters agreed or strongly agreed with PNF1. The high level of agreement with PNF1 suggests that participants are willing to invest money into products that will be favorable for the environment.

In relation to PNF2, a relatively high percentage of the respondents (61.2% of adopters and 48.8% of non-adopters) revealed their willingness to pay more for ecological products in an effort to protect the environment.

Survey data showed similarly strong agreement of adopters and non-adopters (48.8% and 52.8%, respectively) with PNF3, suggesting they would be willing to sacrifice some aspects of their lifestyle to protect the environment.

5.2.4 Action norms factor (ANF).
Action norms factor (ANF) is one of the subgroups of Environmental norms. ANF highlights participants' willingness to make decisions or take action that's favorable to the environment. The following survey items were employed to highlight participants' actions and willingness to purchase products that leave a smaller ecological footprint and less atmospheric pollution: "As an individual I must do what I can to prevent climate change" (ANF1); "Business and industry could be responsible and help prevent climate change by reducing their emissions" (ANF2); "I would purchase a green product with a payback period of less than 10 years" (ANF3).

Respondents showed a high level of agreement with the ANF1 environmental-behavior variable; 80% of adopters and 73.4% of non-adopters agreed or strongly agreed that they have a personal obligation to make decisions that could lessen the effects of climate change.

The student participants indicated strong agreement with ANF2; 83.4% of adopters and 80.4% of non-adopters agreed or strongly agreed that businesses have a role to place in reducing their emissions to reduce atmospheric pollution.

In regard to ANF3, student adopters (67%) and non-adopters (67%) showed an even distribution in responses, as the majority of both groups said they would be willing to purchase a green product with a payback period of less than 10 years.

5.2.5 Professional assistance factor (PAF).
Professional assistance factor (PAF) falls among the subgroups of Environmental Barriers. PAF reveals respondents' need for external opinions or professional

Table 8. Cross-tab Analysis on PNF1

Price norms factor (PNF1)		I would be prepared to pay higher prices overall in order to protect the environment.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	2.2%	10.1%	30.7%	46.8%	10.1%	100.0%
	Yes	1.2%	7.1%	22.6%	57.1%	11.9%	100.0%
Total		2.0%	9.6%	29.2%	48.8%	10.5%	100.0%

Table 9. Cross-tab Analysis on PNF2

Price norms factor (PNF2)		I will be prepared to spend $5 more per week for everyday items in order to protect the environment.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	3.3%	13.2%	34.8%	38.4%	10.4%	100.0%
	Yes	1.2%	8.2%	29.4%	54.1%	7.1%	100.0%
Total		2.9%	12.2%	33.8%	41.3%	9.8%	100.0%

Table 10. Cross-tab Analysis on PNF3

Price norms factor (PNF3)		I would be prepared to reduce my standard of living in order to protect the environment.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	2.2%	17.0%	27.9%	46.0%	6.8%	100.0%
	Yes	1.2%	14.3%	35.7%	40.5%	8.3%	100.0%
Total		2.0%	16.5%	29.4%	45.0%	7.1%	100.0%

Table 11. Cross-tab Analysis on ANF1

Actions norms factor (ANF1)		As an individual I must do what I can to prevent climate change.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	3.6%	9.6%	13.5%	52.2%	21.2%	100.0%
	Yes	4.7%	4.7%	10.6%	52.9%	27.1%	100.0%
Total		3.8%	8.7%	12.9%	52.3%	22.3%	100.0%

Table 12. Cross-tab Analysis on ANF2

Actions norms factor (ANF2)		Business and industry could be responsible and help prevent climate change by reducing their emissions.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	7.4%	7.2%	5.0%	39.9%	40.5%	100.0%
	Yes	2.4%	7.1%	7.1%	42.9%	40.5%	100.0%
Total		6.5%	7.2%	5.4%	40.5%	40.5%	100.0%

aid in investing in or installing green products. Question items including "I need professional or additional assistance before using/installing green products" (PAF1) and "I need other people to assist in my decision to purchase green products" (PAF2) were considered to highlight this view of our respondents.

A large percentage of our respondents (60% of adopters and 62.7% of non-adopters) indicated a need for professional or additional assistance before considering to using or installing green-labeled products (PAF1).

In relation to PAF2, respondents indicated a high need of assistance (44.7% of current installers and 41.1% of non-adopters) in decision-making in regards to purchasing green products.

5.2.6 Cost Factor (CF).
The cost factor (CF) is a proven major barrier to rooftop solar PV adoption (Gadenne et al., 2011). CF is a

sub-factor of Environmental Barriers. This variable gives insight into the cost sensitivity level of individuals in regard to purchasing green products such solar PV. To measure this variable we considered question items including "The fuel savings from green products is not worthwhile" (CF1); "I will not live in this house long enough to recoup the cost" (CF2); and "Green products are unlikely to last long enough to recoup the cost" (CF3).

Respondents indicated high awareness of the saving benefitsof investing in green products or systems. Among the participants, 86.5% of adopters and 72.2% of non-adopters disagreed or strongly disagreed with CF1, suggesting that they are aware of the potential savings perks of eco-friendly products or systems.

In regards to CF2, survey data indicated an even distribution in positioning between respondents. Twenty percent (20%) of our responders indicated that they

believe they will not live in their house long enough to gain a return in their investment. Nonetheless, 23.9% of respondents suggested a strong agreement contrary to the statement proposed in CF2.

Respondents indicated a high level of awareness of the benefits of investing in green products; 37.7% of adopters and 44.6% of non-adopters said that green products will typically last long enough for investors to realize a return on their investment. 5.2.7 Regulation factor (RF). Regulation factor (RF) is one of the sub-factors of Environmental Barriers. To measure respondents' sensitivity and attitude about this factor, question items "It is difficult for me to find a suitable location or space for green products"(RF1) and "It may be difficult to get the necessary planning/building permission from the relevant government agency" (RF2) were considered.

Nearly half of respondents (47.6% of adopters and 46.7% of non-adopters) indicated that finding a suitable location or space for a green product would be arduous.

The need for government-agency approval in China stands as a prominent barrier to solar PV adoption. as 38% of respondents agreed or strongly agreed that getting necessary planning or building permissions from government agencies would be difficult. However, roughly the same percentage of respondents disagreed or strongly disagreed that it would be difficult.

6. Conclusion

This research investigated the environmental behavior and beliefs of educated Chinese citizens, specifically focusing on college students, to get their perspectives or attitudes toward the adoption of domestic solar PV systems in their country. Respondents showed evidence of high levels of concern for the environment and pro-environmental behavior beliefs. Among the three environmental behavior factors, a large percentage of respondents agreed with the favorable aspects of the question items, suggesting that respondents have positive environmental behavior beliefs and would be interested in purchasing green products or systems such as solar PV rooftop systems. The results also indicated that professional assistance factor, cost factor, and regulation factor might have a negative influence on educated Chinese citizens or Chinese college students'attitudes about adopting solar PV.

6.1 Limitations

Nevertheless, it should be acknowledged that there are several limitations of the research, as its analysis is based on a sample that is quite specific, which gives one snapshot in time of one group – Chinese college students from two universities. Furthermore, this analysis focuses on only three environmental behavior factors. There are other pertinent environmental behavior factors, namely, Drivers of environmental behavior, Social/community influence, and Government policies/subsidies (Gadenne et al., 2011) that were not explored as the research only focused on the most important factors due to the size limit of the survey. Conclusions about respondents' environmental behavior and possible interest in purchasing green products or ecological systems such as solar PV are based on the rationale that subjects will follow through in purchasing green products if they indicated positive environmental behavior and attitudes. However, other studies have highlighted the "value-action gap" (Ajzen and Fishbein, 1980; Gadenne et al., 2011), which suggests that in-

dividuals with positive environmental attitudes will not always purchase ecological products.

6.2 Future Research

Respondents indicated positive environmental behavior and attitudes toward purchasing solar PV systems. Further educational means and platforms should be established to sustain those attitudes and knowledge concerning the benefits of the technology. Future research could consider all known environmental behavior factors to gain a wider scope of understanding the environmental behavior and attitudes of respondents. In any case, this research provided supporting data and supplementary insight into the prominent buildup of positive environmental attitudes of Chinese students and their attitudes about the adoption of domestic solar PV.

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From left to right, Dr. Xiangrong Liu, Emmanuel Amoako, Dr. Quoc Tran, and John Taylor Wilson.

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Table 13. Cross-tab Analysis on ANF3

Actions norms factor (ANF3)		I would purchase a green product with a payback period of less than 10 years.					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	3.6%	8.2%	21.2%	50.5%	16.5%	100.0%
	Yes	2.4%	10.6%	20.0%	54.1%	12.9%	100.0%
Total		3.3%	8.7%	20.9%	51.2%	15.8%	100.0%

Table 14. Cross-tab Analysis on PAF1

Professional assistance factor (PAF1)		I need professional or additional assistance before using/installing green products					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	3.6%	14.5%	19.2%	49.0%	13.7%	100.0%
	Yes		11.8%	28.2%	49.4%	10.6%	100.0%
Total		2.9%	14.0%	20.9%	49.1%	13.1%	100.0%

Table 15. Cross-tab Analysis on PAF2

Professional assistance factor (PAF2)		I need other people to assist in my decision to purchase green products					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	5.0%	28.1%	25.9%	35.0%	6.1%	100.0%
	Yes		22.4%	32.9%	37.6%	7.1%	100.0%
Total		4.0%	27.0%	27.2%	35.5%	6.3%	100.0%

Table 16. Cross-tab Analysis on CF1

Cost factor (CF1)		The fuel savings from green products is not worthwhile.					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	24.8%	47.4%	9.6%	13.8%	4.4%	100.0%
	Yes	22.9%	50.6%	13.3%	12.0%	1.2%	100.0%
Total		24.4%	48.0%	10.3%	13.5%	3.8%	100.0%

Table 17. Cross-tab Analysis on CF2

Cost factor (CF2)		I will not live in this house long enough to recoup the cost.					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	4.7%	18.8%	56.8%	17.7%	1.9%	100.0%
	Yes	3.6%	21.7%	53.0%	20.5%	1.2%	100.0%
Total		4.5%	19.4%	56.1%	18.2%	1.8%	100.0%

Table 18. Cross-tab Analysis on CF3

Cost factor (CF3)		Green products are unlikely to last long enough to recoup the cost.					
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Do you have solar PV panels on your house?	No	6.3%	38.3%	33.9%	18.7%	2.8%	100.0%
	Yes	2.4%	34.9%	36.1%	22.9%	3.6%	100.0%
Total		5.6%	37.7%	34.3%	19.5%	2.9%	100.0%

Table 19. Cross-tab Analysis on RF1

Regulation Factor (RF1)		It is difficult for me to find a suitable location or space for green products.					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	2.7%	18.0%	32.5%	41.8%	4.9%	100.0%
	Yes	1.2%	12.9%	38.8%	41.2%	5.9%	100.0%
Total		2.4%	17.1%	33.7%	41.7%	5.1%	100.0%

Table 20. Cross-tab Analysis on RF2

Regulation Factor (RF2)		It may be difficult to get the necessary planning/building permission from the relevant government agency.					Total
		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Do you have solar PV panels on your house?	No	2.3%	34.6%	24.8%	32.7%	5.6%	100.0%
	Yes	3.7%	41.5%	18.3%	34.1%	2.4%	100.0%
Total		2.5%	35.9%	23.6%	33.0%	5.0%	100.0%

Antecedents of Environmental Behavior Factors		Question Items	Adopters	Non-adopters
			Positive Association (%)	Positive Association (%)
General Environmental Behavior	Environmental Limits Factor (ELF)	"The earth is like a spaceship with only limited room and resources" (ELF1)	61.9	64.9
		"There are limits to which our industrialized society can expand" (ELF2)	61.9	70.2
		"When humans interfere with nature it often has disastrous consequences"(ELF3)	56.4	55
	Environmental Adoption Factor (EAF)	"Plants and animals exist primarily to be used by humans" (EAF1)	69.1	68.1
		"Humankind was destined to rule over the rest of nature" (EAF2)	55.4	65.6
		"Humans have the right to modify the natural environment to suit their needs" (EAF3)	63.2	56.6
		"I would be prepared to pay higher prices overall in order to protect the environment" (PNF1)	69	56.9

Literacy Teaching & Learning in a Nicaraguan Primary School

KRISTIN ARNOLD

Introduction

Nicaragua, the second poorest country in Latin America, has a population of approximately 5.8 million people that includes nearly 1.7 million school-age children and youth. According to UNESCO, Nicaragua has the highest dropout rate in Latin America with 52% of children leaving school without completing their primary education. As a result, 22% of Nicaragua's population is illiterate. To gain a better understanding of the primary educational system in Nicaragua, I traveled to the fifth-largest city in Nicaragua with two other researchers and two mentors to observe primary school education in the country, concentrating on the nature of literacy instruction in a Nicaraguan primary school. This qualitative and naturalistic study examined the teaching and learning of literacy in a public Nicaraguan primary school setting. Multiple data collection methods were employed, including three weeks of participant observations, field notes, semi-structured teacher interviews, and the collection of school and teacher artifacts. These research methods were used to examine the scope and sequence of literacy instruction in Nicaragua, the nature of liter-

acy instruction and learning in a Nicaraguan primary school, and the strategies and methods teachers in Nicaragua used for literacy instruction.

Methodology

Research Setting and Participants

This qualitative, naturalistic study was conducted in a public Nicaraguan primary school in the fifth-largest city in Nicaragua. At this school, there were fourteen classrooms ranging from kindergarten through sixth grade with thirty to forty students per teacher (Figure 1). The fourteen classrooms, the school's office, library, and small computer lab comprised the perimeter of the school and surrounded a cement courtyard which was located in the center of the school. The classrooms had tiled floors and were minimally decorated (Figure 2). The school had two sessions per day, the first session beginning at seven o'clock in the morning and ending at noon, and the second session beginning at twelve thirty and ending at five thirty at night. Fewer students attended the afternoon session than the morning session. Both sessions had different teachers and a different vice principal, but the principal remained for the entirety of the day. Most of the teachers at this school received training at a Normal School for at least two years but had not received a university degree.

Data Collection

For three weeks, I observed Monday through Friday in classrooms ranging from kindergarten to sixth grade. While observing each day, I collected data for this study, including classroom observations, field notes, semi-structured teacher and administrator interviews, and a collection of artifacts. The semi-structured interviews, conducted in Spanish, were completed mid-way

Fig. 1. The Nicaraguan primary school at which we observed.

Fig. 2. A typical classroom.

through the observations. Sample translated interview questions include the following:

- How did you prepare to become a teacher?
- Do you believe that you have sufficient resources to teach literacy effectively? Why or why not?
- (For 1ˢᵗ grade only) Do you like using the *componedor* (a classroom tool used for the instruction of phonics)? Do you believe that it is an effective teaching tool?
- What teaching methods and strategies do you use for teaching language and literature?
- What comprehensive strategies do you use for teaching language and literature?

Additional interviews followed-up on or resolved any unanswered questions. These research methods were used to examine the nature of literacy instruction and learning in a Nicaraguan primary school, what strategies and methods teachers in Nicaragua used for literacy instruction, and the scope and sequence of literacy instruction in Nicaragua.

As a participant observer during these three weeks, I observed the teachers and students as they engaged with each other in the classroom. While observing the teachers and students, I took detailed field notes about the lessons, information written on the whiteboard, student and teacher movements, the overall environment of the classroom, and the aesthetics of the classroom. After each of my observations, I reread my notes, added any additional information, revised my notes for accuracy, and began evaluating them. Each evening, my fellow researchers, mentors, and I would meet to discuss our observations as a group and begin identifying themes that we were observing. In addition, I analyzed the semi-structured interviews and field notes regarding my questions concerning the facets of literacy instruction in Nicaraguan primary schools. I used content analysis and the constant comparative method (Strauss and Corbin, 1998) to analyze the data and look for themes or patterns to emerge from the data.

Results & Discussion
Curriculum
After being a participant observer for three weeks in a public, Nicaraguan primary school, I have a better understanding of the nature of literacy instruction and learning in Nicaraguan primary schools, including the scope and sequence of literacy instruction in Nicaragua and the strategies and methods used by teachers in Nicaragua for literacy instruction. In Nicaragua, the schools follow a curriculum and the teachers have a day-to-day plan of teaching literacy, but the curriculum is not readily available. It cannot be viewed by parents, and teachers and administrators only have access to curriculum plans once a month. Each month, the schools hold government-ordered workshops called TEPCEs, *Talleres de Evaluación, Programación, y Capitación Educativa* (Evaluation, Programming, and Educational Training Workshops). During these workshops, the teachers and administrators reflect upon the successes of the previous month and discuss the scope and sequence of lessons to be followed in the upcoming month.

Although the literacy curriculum could not be accessed, a protocol for literacy teaching for first and second-grade classrooms in Nicaragua could be found. This is called "*El Método FAS*," which is the Synthetic Analytical Phonic Method for reading and writing

instruction. The Synthetic Analytical Phonic method is a teaching resource that is said to guarantee the acquisition of reading and writing, while promoting a habit of reading for the students, the comprehension of diverse types of text, and oral and written expression, therefore integrating the four principals of communication. Advantages of this program for students in Nicaraguan primary schools include the contribution by students in a more active way in literacy lessons, facilitation of learning by all students, an increased emphasis on the discovery of visual and auditory skills, an increased ability to reproduce sounds, and the use of mental processes of synthesis and analysis by students. This method also includes the simultaneous learning of script and cursive writing, which was observed in the first-grade classroom (Nicaragua Educa, 2014). The Synthetic Analytical Phonic Method requires intensive training for first and second-grade teachers, and based on the interviews, the teachers see it as an effective method for teaching literacy to first and second-grade students.

Along with the Evaluation, Programming, and Educational Training workshops and the Synthetic Analytical Phonic method, schools and teachers are also provided with suggested teaching methods from Nicaragua's Ministry of Education. The literacy methods provided include those surrounding the learning of the alphabet, phonics, syllables, and "normal" words, which are what the Ministry of Education in Nicaragua calls simple words that require little thought to define and can be accompanied by an image. They provide processes for teaching each of these aspects of literacy, and they also list advantages and disadvantages to each method. For example, for teaching the alphabet, suggested methods include teaching the alphabet in order, referring to each

letter as its name and not its sound, then combining letters, and lastly adding accents. These methods emphasize the mechanical aspects of reading before adding expression in the form of accents. The Ministry of Education's website includes suggested methodologies for the teaching of fluency as well. It gives a sequence of steps required in the teaching of fluency, which begins with teaching vowel emphasis while reading aloud and ends with the teaching of adding expression into reading. The methodology for fluency, however, is combined with that of phonics, and fluency instruction alone is not emphasized nearly as much as phonics instruction in the primary grades (*Métodos para el aprendizaje de la lectoescritura*, 2015).

Literacy Instruction

In this particular school, the nature of literacy teaching is very direct. There are scheduled, routine times for literacy instruction and for all other subjects. Weekly schedules of each class are posted in the administration office and in each class (Figure 3). Subjects generally occur at the same time each day. For example, the first-grade classes are taught *Lengua y Literatura* (Language and Literature) immediately when they arrive in the morning. Each class has two forty-five minute sections of language and literature lessons per day, which equals seven and a half hours of instruction per week. This is the same for all levels in this primary school. Having scheduled times for subjects is an effective practice in any school because it helps students to know what is expected of them at what time. Moreover, having scheduled times for subjects grows into a routine for the students. Routines have many benefits for children, including improved cooperation, elimination of unnecessary anxiety, and the development of self-discipline,

Fig. 3. The weekly schedule of a first-grade class.

responsibility, and independence (Shalaway, 1999). In all classrooms of this primary school, literacy lessons were teacher-centered. In a teacher-centered classroom, the teacher talks while all students are expected to listen. The focus of all students remains on the teacher as she stands at the front of the class or circulates throughout the classroom. Lessons are often lecture-based and students work independently at their desks. Students typically only spoke when called upon to answer a question or to read from the text. The only time students work with one another is to share resources such as the *Lengua y Literatura* textbook.

During the literature lessons, the classes read stories from their language and literature books, often multiple times and in several different ways, relying on rote learning strategies. For instance, a fifth-grade class in this school read a story from their language and literature book, "*Noches de diciembre*" ("December Nights"). First, the students read the story individually. Then, the teacher read the story to the class. After that, the teacher called upon one student to stand and read the story for a third time aloud to the class. The teacher emphasized the importance of reading and rereading by saying, "to read well is to understand the text well, to understand the words well." The language lessons also included rote memorization in the sense that the students in the intermediate levels would oftentimes have to define key terms from the text (or other literacy vocabulary terms), using a dictionary, and copy the definitions into their notebooks. Their work with and use of the terms tended to end there.

Writing Instruction

Another recurring theme was the inclusion of hand-writing instruction in literacy lessons and the exclusion of writing instruction. Writing instruction typically includes the planning and writing of ideas and topics at grade-appropriate levels; however, writing instruction in these Nicaraguan classrooms did not include the creation of writing that conveyed ideas, content, and meaning to the audience but rather focused on the mechanics of handwriting. In the primary levels, students practiced handwriting and were even beginning to write in cursive. First-grade classrooms utilized writing workbooks for the students to practice cursive. Although there was formal handwriting instruction, there was no formal writing instruction. Students were constantly writing in their notebooks. Students copied what the teacher wrote on the board. They copied stories and questions into their notebooks and they performed writing exercises, but they were not formally taught how to write or construct sentences or paragraphs containing their own ideas. An example of this was seen in a fourth-grade classroom. The teacher began teaching a lesson about anecdotes and provided a definition. The class then read an anecdote about a magician and answered questions about the text. After the lesson, the students were assigned homework, which included writing their own anecdote about something that happened to them in the past. The teacher did not discuss the required format for the anecdote, nor did she mention any guidelines of the length and structure of the anecdote. Although the teacher taught the students what an anecdote was and provided the students with an example, she did not teach the students how to write an anecdote on their own.

Phonics Instruction

Although writing instruction was not a high priority, other areas of literacy were heavily emphasized. In the primary grades, phonics instruction was a primary focus. Phonics instruction includes the teaching of the relationship between letters and sounds and how to use them in reading and spelling (Tompkins, 2014). In Nicaragua, reading is taught with a heavy emphasis on phonics and decoding, which is the use of word identification strategies using known knowledge of letters and sounds to pronounce and determine the meaning of known and unknown words (Tompkins, 2014). Phonics lessons are taken very seriously and include a variety of literacy components. The lessons include songs, visuals, and even manipulatives. A manipulative that was seen in first-grade classrooms is called the *componedor*, which is part of the Synthetic Analytical Phonic Method used for first-grade students in the instruction of literacy. The *componedor* is a large manipulative which is used by the entire class as a resource for decoding Figure 5). All students have their own miniature *componedor* to follow along with, which is made by their parents. In a lesson in the first-grade classroom, the *componedor* was used to observe words with the letters "s" and "c" (which can have the same sound in this dialect of Spanish) to show when and where each letter is used. When asked, the teachers shared that they felt that the *componedor* is an effective tool to aid in literacy instruction; however, one of the first-grade teachers only thought that the large version was effective, saying, "I would like to only use the large *componedor*. The cards for the student *componedor* are easily lost." The *componedor* was a frequently used tool in the first and second-grade classrooms for phonics instruction.

Fig. 4. The *componedor:* a device used for the teaching of word decoding in the first-grade classroom. The blue strips are slots for placing letter cards for forming words.

Fig. 5. A page from the *Lengua y Literatura* (Language and Literature) book, used when teaching word decoding.

Lessons in decoding occurred daily in the first-grade classes. One day in one class, the students were practicing the letter groups "pla," "ple," "pli," "plo," and "plu." The teacher began the lesson by first reviewing the sounds without the "l" (pa, pe, pi, po, pu) and the class gave examples of words which contained those sounds, like "papa" and "puma." They then continued the lesson with letter groupings that included the "l," and the students used their books to see examples of words with those letter patterns and matched them to pictures of those words that were also on the page of their book (Figure 4). They even formed these words as a class using the *componedor* as a tool. Word decoding is seen as an important facet of literacy teaching and learning for primary level students in Nicaragua.

Comprehension

While the primary grades heavily emphasized phonics, the intermediate grades emphasized a guided and literal style of comprehension. The intermediate levels read several stories in their language and literature books. After the students read a story, they typically had to answer questions about the text. These questions were often literal questions. Literal questions are questions whose answers can be found directly from the text. Inferential questions, or questions that require the student to make conclusions about the text based on the information that is given, were limited. For example, in the third-grade class, the students read a story called "*El arroyo que dormía*" (The Stream that Slept). This story was about a stream that had dried out. The questions

from the book that followed were all literal questions and did not require much critical or inferential thinking. The questions included: "Who are the characters of the story?" "What happened to the river?" and "What advice did the cloud give to the stream?" These questions were answered with information taken directly from the text. Another example of this was seen in the fifth-grade classroom. After reading "December Nights," the questions that were asked were of the same nature: "What is the description of the main character?" "What is the street like that he walks on?" "What characteristics of the man can you identify?" These questions, similar to the questions given to the third-grade students, were straightforward and yielded quick and simple answers. Although comprehension and reading lessons were often taught via direct instruction, many times they included opportunities for students to make connections to themselves and the world. After reading the story about the dried-up stream in the third-grade classroom, the teacher took the lesson a step further by asking the students if they could compare the dried up river in the story to a place in their city. In fact, the students were eager to answer this question because there was a location within a ten-minute drive of their school where there was a river that had dried up. The teacher also asked the students about the importance of conserving the environment, based on the information given in the story and its importance in real life. The students had several ideas, and the teacher listened to the opinions of about half the class. When connections were made to the world around them, students were eager to participate. Their feelings were toward a subject that affected their own lives, making the subject more tangible which then made the story more important to the students.

In the fifth-grade class, after reading "December Nights," the teacher asked the students to compare the climate of the place described in the text to the climate in their city. Not only did the teachers include world connections in their lessons, but they also taught by modeling connections to the self. After reading "December Nights," students were assigned homework, which included writing the prosopography, or the description of characteristics, of his/her mother, father, or other family members. Also, in the fourth-grade class, students were assigned to write an anecdote about something that had happened to them in the past. Homework often involved asking parents for ideas as well. Connections made to the self and to the world help create a better understanding of what is being taught.

Resources

The strategies and methods of literacy teaching in a Nicaraguan primary school were very direct, and the strategies used were often limited by the resources available to the school. The strategies employed in this school were often very straightforward. Literacy lessons at all levels included teachers explicitly telling students to read a story, copy the text, copy the questions, and answer the questions. These were habitual tasks in the classrooms. The tasks asked of the students were not varied, possibly due to the lack of a range of resources for literacy instruction. This school only had access to seven computers, all of which were located in a computer lab that was only used for the upper grades. Computers were not seen in any classroom or even in the administration office. Teachers copied text, images, and other materials by hand onto the whiteboard because they did not have the technology to project images onto the whiteboard. Whiteboards were a frequently used

tool in all classrooms. Language and literature books were used throughout all literacy lessons, but there were not enough for each student to use his/her own. A fifth-grade teacher at the school said, "We do not have sufficient resources for teaching literacy…The new language and literature books have not even arrived yet and it is the middle of the school year." These books were used for every facet of the literacy lesson, and as important as they were, the newest version was not available to the students. The language and literature books contained stories, questions, and exercises. The only stories read by the classes were from this textbook. No outside reading materials, like trade books such as picture books, chapter books, or articles, were utilized in literacy instruction due to the lack of resources. The only other tool used during literacy lessons was the individual notebooks of the students. Stories, questions, exercises, and homework were all copied into the students' notebooks.

Although a lack of resources for literacy instruction can be a hindrance, the school made the most of the resources they had and used different strategies instead. Because the teachers were not able to use worksheets as aids in instruction, they often drew visual exercises on the board. When the first-grade class was learning the "pla," "ple," "pli," "plo," and "plu" sounds, the teacher drew pictures of objects that included those letter combinations and had the students write their own sentences about the pictures. Also, when the first graders were learning the difference between "s" and "c," the teacher drew pictures of objects containing one of those letters in one column and wrote corresponding words in a column beside the pictures for the students to match together. The downside of this strategy, how-

ever, was that it took more time to draw the exercises on the board than it actually took for the students to complete the exercise.

Another strategy employed by teachers, especially those of the primary levels, was the use of song. The teachers of the primary levels used song as a way to introduce a subject. When the first-grade class was learning about the letter "s," the teacher began the lesson by singing a song about a *sapo* (toad). Not only do the use of visuals and songs aid in the teaching of literacy, but they also create well-rounded lessons that adhere to the learning styles of a variety of students. Overall, the strategies and methods utilized in literacy instruction were often limited to the resources available to this Nicaraguan primary school.

Conclusion

By traveling to Nicaragua and observing in a public primary school, I have gained a better understanding of the Nicaraguan education system, specifically the nature of literacy instruction and learning. In Nicaragua, the scope and sequence of primary education is not easily accessible and curriculum is typically only discussed by teachers and administrators in monthly workshops. The nature of literacy teaching and learning included very direct teaching strategies, such as rote learning in reading lessons and limited writing instruction with insufficient resources for every student. The strategies and methods of literacy teaching were very direct as well, and the strategies used were often limited by the resources available to the school. Most reading and writing lessons were taught directly from a language and literature book, and all exercises and notes were copied into each student's notebook. Although there

was a lack of resources available to teachers and students, the schools made the most of what they did have.

By traveling to Nicaragua and investigating the nature of literacy teaching and learning in Nicaraguan primary schools, we can assess the current strengths and [P SEP]areas of growth for these public primary schools. When strengths and areas of growth are identified, best practices in teaching and learning can be further supported. Nicaragua's government can provide support, as can international partnerships. Resources can be donated to these schools, and countries such as the United States can assist in the teaching of best practices of education.

Traveling to another country to explore its educational system does more than just educate a person. It leads to a better understanding of its people and children. It provides for an opportunity for relationships and partnerships to be made in order to support best practices in education. It leads to a new perspective. This experience has led to a greater understanding of literacy teaching and learning in Nicaragua.

Not only were we able to explore the educational system in Nicaragua, but we also learned about the life and culture of the country as we engaged with the children at this primary school. Conversing with teachers and students of a developing country led to a sense of connectedness. As a future educator myself, I want to see my students succeed just as much as the teachers and administrators of the primary schools of Nicaragua. Commonalities such as these create the foundation for future partnerships between educators who want the best for their students. Our cultures, languages, and educational systems may differ, but once a connection is made, much can be learned from one another.

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Pappyland Forever

KELLEY BARRETT

According to my mother, I had an internal clock that woke me every morning at 5:00 to watch *Pappyland*, an ecstasy-induced, live action children's show featuring Pappy Drewitt, a suspicious yet enthusiastic hillbilly with a real knack for drawing and interacting with small children. Pappy and his peculiar friends inhabited Pappyland, which he created using a magical pencil and the free time his failed art career allowed for.

When they weren't learning life lessons from a talking paintbrush, a turtle fresh off the boat from Italy, or a beaver in a propeller hat, children were encouraged to draw along with Pappy. He would often start out with merely a squiggle on a piece of paper, which could turn into anything from a snake, to a rope, to a full-blown but slightly wobbly circle. Anything was possible in Pappyland, which is something Pappy said roughly twelve times per episode. In this land, you could color outside the lines. You could create and recreate with reckless abandon. You could even tell someone it was "blue after two" and it would be received as a legitimate measurement of time. I became immersed in this intoxicating Eden of imagination, inspired by the limitless possibilities and thrilled by the genuine disregard for the objective bounds of reality.

Our refrigerator soon became cluttered with the pencil-drawn tour de forces I myself deemed worthy of public acclaim. "Wow, look at that detail!" my mother would exaggerate, shooting a smile in my direction before taking the milk out. I began distributing my artwork on the street, meaning I would put drawings in my elderly neighbor's mailbox without her asking. I would watch from my window as her car pulled into the driveway, anticipating her excited reaction. She would bring the illustration over to the house later in the evenings for me to autograph.

"And who should I make this one out to?" I teased, pretending that the scribbles somehow translated to my name in cursive. For all intents and purposes, I was Van Gogh on the verge of an ear slicing. I drew everything I could possibly imagine, often accompanying the drawings with stories. "The Mystery at the Museum" was my debut short story, which chronicled the curious case of missing bones at a dinosaur exhibit. My readers, who consisted of four family members and two neighbors, praised the work, unanimously noting that they *never* expected the culprit to be the unassuming, purple-polka-dotted Dalmatian with three prior arrests.

Whether I was doodling along with Pappy or making clay figurines to go along with a short story on talking mice oppressed in a world geared towards humans, I was creating and imagining, chronicling it all in a handmade journal. Thanks to Pappy, I walked through my very small world with my head somewhere between the clouds and the aliens that most definitely inhabited Mars. I saw a world with dragons and imaginary friends and flying pigs. Reality was merely a suggestion and the possibilities were endless. However, around the fourth grade, a wicked being stormed my whimsical world, waging war against my mind's eye. This being came in the form of Mrs. Dell.

Mrs. Dell was essentially a crayon-wielding warden, dedicated to using art as a vehicle to curb children's creativity. An interesting approach—cleverly attacking the practice from within the system. She drew everything in meticulous detail on the board, with each line measured precisely to scale, using a yardstick that I always feared would end up on the wrong side of someone's face.

"It's not that hard!" she would exclaim to a class of eight-year-olds, pointing hopelessly at the three-dimensional hexagonal prism on the board that none of us could seem to recreate.

She would scream with the intensity of a murder victim over trivial transgressions, such as someone using the wrong color or sketching outside the lines. "What. Are. You. Doing?" she would howl, speaking to us like we were hearing-impaired toddlers from a foreign country.

If you wanted to borrow a pencil during class because, hypothetically, you snapped yours accidentally out of fear beforehand, you would have to give Mrs. Dell your shoe for the duration of the period in exchange.

"You'll get this back when I get my pencil back," she scoffed, creating the warden-prisoner dynamic that the Massachusetts Curriculum Frameworks was clearly lacking.

As much as I feared Mrs. Dell and genuinely believed she was in cahoots with some malevolent force, I could not bring myself to follow her instructions. During one class, we were commanded to recreate a mountainous Monet painting. A simple task, if we were world-renowned impressionists instead of nose-picking eight-year-olds. I attempted the feat, but with some minor adjustments. I added snow, skiers,

reindeer, and an Abominable Snowman, for good measure. Just before I began to sketch the peppermint mine for Yukon Cornelius to uncover with Rudolph, I felt a warm breath puncture the back of my neck. "Stop!" she roared, snatching my paper with her spiny hands.

With steam threatening to spew from her ears, she slammed the drawing back onto my desk, her bony fingers pointing out the obvious errors.

"Explain how you get *this*," she asked, pointing to my paper, "From *that*," she exhaled, motioning towards the board.

"Um, I just—the mountains reminded me of skiing, which reminded me of snow, which reminded me of Christmas, which reminded me of Rudolph the Red-Nosed Reindeer," I offered anxiously as if I were on trial.

"Follow the directions!" she demanded, marching to the front of the room. On her way back, she scanned the other students' creations, determining that they lacked the innovation and signs of early-onset schizophrenia that characterized my work. She grabbed another girl's drawing and held it up to me. "This is what your paper should look like! It's not difficult!" A sudden rage sizzled in my chest. Instead of erasing the extraneous details on my paper, I added more, filling every available white space with whatever popped into my piping hot head.

"The reason I want these to come out perfect," she said, in a slightly calmer tone, "Is that they will be put on display at the art fair next week." Our classroom erupted in an excited chatter, with students whispering, "Let me see your paper!" and "Will the best one win a prize?" and "Do you think Mrs. Dell will actually give me back my shoe? Because it's snowing out and I have to walk home and frost bite is a real concern but I don't

want to ask her."

"Quiet," she bellowed, prompting everyone to sit upright in unison. "I will determine which papers go on the wall and which ones do not. Start finishing up." As an anxious student who strove to achieve perfection, it was uncharacteristic of me to rebel against a teacher. But Mrs. Dell brought something out of me. So, with a firm grip on my Number 2 pencil, I pulled a full-blown Pappy. I decided that one of the mountains would become a volcano in mid-eruption, spewing molten lava atop an anonymous female who definitely did not bear any resemblance to Mrs Dell.

The other students in my group were amused by this lack of regard for Mrs. Dell's authority, and in what felt like a peasant revolt, they began to veer from the instructions as well. One boy drew himself standing on the mountain with his friends. The girl across from me included the entire cast of *Spongebob* on hers. The girl next to me drew her own face onto each of the mountains, which was honestly a pretty self-involved thing to do, but her attempt was duly noted.

Two minutes remained in the class and Mrs. Dell announced that she would be going around the room to collect our papers, assuming they were good enough for the asbestos-ridden cafeteria wall they would be so elegantly hung on. She picked up at least ten acceptable papers, forcing face-cracking smiles at the students who had followed her directions. This unnaturally pleasant demeanor shifted as she approached my area of the room, picking up the first boy's drawing as if it were covered in feces. She quickly dropped it from her grasp in disgust, sniffing out the other recalcitrant artwork nearby.

"Do you think you're funny?" she asked my group in disbelief. We looked at one another and then at the floor while she berated us for daring to have a spark of creativity in the children's art class.

"It's you," she said, pointing directly at me. "You think you can just draw whatever you want. It's toxic behavior." Needless to say, our masterpieces were not selected for the prestigious gallery. And, to make matters worse, I was now a pestilential creature, infecting the innocent minds of those around me. Choking back the tears I refused to let stream down my face, I got up to sharpen my pencil, all the while avoiding eye contact with Mrs. Dell.

"We are drawing *mountains,*" she insisted. "Not what you *think* a mountain should look like, but what a mountain *actually* looks like. We are drawing reality, not your daydreams. Get it?"

I turned around with my freshly sharpened pencil, blowing the shavings off and staring back at her. I wanted to call Pappy and see if he might take a break from frolicking around to summon his band of creatures together. They could all sharpen their pencils, crayons, and maybe a pitchfork or two. We would all rush valiantly onwards, shouting, "Pappyland forever!" while holding flags that featured images drawn outside the lines. The gang from Pappyland would, of course, never resort to actual violence—this would merely be an intimidation tactic. Nevertheless, we would fight for the right to doodle.

"Hello? Get it?" she snarled again. The battlefield in my mind faded just before we could celebrate our victory via an outrageous parade through Pappyland. The classroom came back into focus.

"Answer me right now!" she added, for good measure. I felt the weight of twenty frightened eyes on me and, in one of the more badass moments of my elementary school career, said, "No."

This moment came in a close second to the time I stole a flat, year-old Coca Cola can from the refrigerator in the teachers' lounge and then drank it in the safety of the girls' bathroom.

A simultaneous gasp seemed to suck in all the oxygen from the room. "Sit in your seat right now," she stammered. I obeyed, doubting my decision to be insolent with every step back to my seat. "Do you want me to tell your homeroom teacher about this?" she asked, very close to my face, which now matched the hue of the "torch red" Crayola crayon she held.

My audacity began to evaporate as I thought about Mrs. Dell reporting my behavior. "Yes," she would sigh, her hand on her forehead as if she might faint. "To a Monet piece nonetheless! She's dangerous!"

My homeroom teacher never approached me, so I was not sure if Mrs. Dell refrained from ratting me out or if the teacher discounted it, chalking her outrage up to a poor night's sleep. Nevertheless, it struck me that acting on my imagination could be considered dangerous. A self-awareness soon surged, prompting me to contemplate the degree of peril in which I existed. I was no child psychologist, but I reflected that perhaps meandering into walk-in closets half hoping to reach Narnia—something I did alarmingly often—might be a red flag.

We did not have a walk-in closet, but I had several friends and family members who did. "I'm just going to the bathroom," I would lie, and within minutes find myself knee deep in some forgotten Christmas decorations, headed for what I hoped would be the snowy, magical land. As a logical being, I knew that disappointment inevitably lay at the end of the closet, but an irrational shred of belief that there *might* be something

thrilled me to no end. What granted me some sense of solace, however, was that someone even more "dangerous" than me created the wondrous world, inspiring my wandering mind to tumble down a rabbit hole.

I therefore accepted the fact that a piece of me would always live in Pappyland, where the sun smiled on those who imagined.

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Kelley Barrett is a senior majoring in English and minoring in Communication Studies. Her honors thesis was completed in the fall of 2016 under the mentorship of Dr. Kathryn Evans (English).

Reverence for Rejection: Religiosity and Refugees in the United States

NICK BOOTH

Research Question and Significance

Religiosity is a variable used to test how religious an individual is, measuring their actual practice of the religion, not just their identification (Cornwall, Marie, Albrecht, Cunningham, & Pitcher, 1986). One study, *The Faith Community's Role in Refugee Resettlement in the United States*, connects a large portion of the United States' refugee resettlement efforts to faith-based organizations (Eby, Iverson, Smyers, & Kekic, 2011). Is the U.S. obligated to take in refugees? This is an important question to ask, since large scale migrations of people, like the Syrian refugee crisis, has caused a need for an increased role in resettlement of refugees by the U.S. Moreover, faith-based organizations are a necessary factor not only in the acceptance, but also the resettlement of foreign refugees (Ives, Sinha, & Cnaan, 2010). Therefore, data on acceptance of refugees, compared with religiosity, will examine whether the practice of religion informs a person's view about the role the U.S. plays in refugee resettlement.

Refugee policy has also become a political issue this election cycle. According to a recent NBC News/ Penn poll, a majority of Americans disapprove of increasing the number of Syrian refugees the U.S. takes in, with 8 in 10 Republicans disapproving (Kopicki, Allison, Lapinski, & Hartig, 2016). The overwhelming Republican disapproval is interesting, since there is a "correlation between religious attendance and Republican Party identification" (Putnam & Campbell, 2010, p. 374). This seems to be at odds with the role that faith-based organizations play in the acceptance and resettlement of refugees in American. Thus, it would be beneficial to see if religiosity is a variable that changes feelings towards accepting refugees, or if there is another factor influencing the attitude towards refugees.

This study will seek to contribute to the discussion about how people form opinions on refugee policy, as well as adding more data to the subject. As was mentioned above, public opinion is against accepting refugees, but it is not clear where the signals for this position are coming from. While Republicans are overwhelmingly against accepting more refugees, this direction goes against the evidence that suggests they score higher on religiosity than Democrats. I want to look closely at the variable of religiosity, and if it is not the first indicator of refugee opining then party identification could be more influential. What this study could do is shed light on is which variable is more influential on how respondents are forming this opinion. More clarity here would help to better understand the true nature of public opinion on this issue and how the government should act

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towards it. Moreover, the public opinion data collected will add to research available for this topic. While the sample size will not be representative, there is still value in comparing the relationships in this test to the ones seen on the national level.

Literature Review and Theory
Public Opinion

To understand how respondents act in public opinion surveys, the Michigan school of thought should be considered. Philip Converse's theory of unsophisticates was developed here, in which political opinions will have "little aggregative patterning of belief combinations in populations of unsophisticated people" (Niemi & Weisberg, 1993, p. 54). This is because they are "innocent of 'ideology'" that informs these opinions (Niemi & Weisberg, 1993, p. 56). If this is true, then there are people who participate in public opinion polling who do not hold informed views on the issues they are commenting on, which leads to unreliable patterns of responses from those groups. While this is a problem for research, since polls will be made up of these individuals, there are other ways to find links within the outcomes of polling data. As Converse notes, since ideology directly informs opinion, finding out where these frames of mind come from should be a crucial part of public opinion research.

Top-Down Versus Bottom-Up

How an attitude is formed is the foundation of public opinion research, since it is the cause to any recorded outcome. There are two theories that drive this debate, elite opinion theory and activated mass opinion. The former is defined by John Zaller (1992). As Zaller explains, "when elites uphold a clear picture of what

should be done, the public tends to see events from that point of view…when elites divide, members of the public tend to follow" (p. 8). This means that the most influential variable on the formation of an opinion is influence from elites. Therefore, if people's already held beliefs are unstable, then they can be swayed by the messages sent down from the top by elites. Zaller further explains this using the RAS model, which lays out the process for how people respond to questions on public opinion surveys. The process is that people take opinions from elites, use the parts that keep their internal ideas consistent, and then take the newest information they have learned, and follow the approach explained above to answer the question. Through this recall, polls can quantify public opinion; however, it is always started from elite influence. This idea has not gone unchallenged: Taeku Lee has argued for a bottom-up approach, through active mass opinion. Lee sees this as a more "maximalist" approach, which is able to account for more variables of influence than Zaller's model (Lee, 2002). Moreover, Lee says that "beliefs…that are at once salient in the mind…impel one to political action." He argues that this can best be seen in the Civil Rights Movement, since, "grassroots social movements pose a fundamental challenge to top-down theories" (Lee, 2002, p. 31). As is the case in many grassroots movements, the public was able to generate an opinion without the help of traditional elites. Therefore, a substantial tension remains between the two theories on attitude formation, and the debate over who starts the creation of opinions. When analyzing the following research, I will try to discern which of the two theories is influencing the opinions of the participants.

The United States' Attitude towards Refugees

The United States resists accepting refugees. Rebecca Hamlin conducted an analysis of 444 news articles, as well as 52 in-depth interviews, to develop a theory about why the U.S. has moved its policy towards the deterrence of asylum seekers (Hamlin, 2012). With this research, Hamlin found that in the mid-1990s there was a bipartisan shift toward keeping refugees out of the U.S. (Hamlin, 2012). There has been a "rise of anti-refugee sentiment in the lead-up to the 2016 presidential elections" that has been polarized along party lines (Nagel, 2016, p. 2). This can been seen in American public opinion, since, as the above mentioned NBC News/Penn poll found, a majority of Americans are against accepting more refugees, and the partisan split that Nagel identified is also present in the results (Kopicki et al., 2016). Therefore, recent studies have shown that in the U.S. there is both an overall aversion to accepting refugees and the development of refugee policy into a party issue. Since Bridgewater State University students will probably skew towards identifying as Democrats, I would expect the majority will be accepting of refugees, unlike the national polls.

Faith-based Organizations and Refugees

While the research shows the overall trend in the U.S. is to reject new refugees, for the refugees who do make it to the U.S., faith-based organizations play a primary role in their acceptance and resettlement. These groups are responsible for resettling about 70 percent of the refugees that come to the U.S. (Eby et al., 2011). They play a prevalent role in connecting displaced people to their new communities, which means there is an interaction between members of faith-based organization and refugees (Ives et al., 2010). Moreover, they are not just

helping people associated with their own religions, as, "some of the largest national refugee assistance organizations, such as Catholic Charities and the Hebrew Immigrant Aid Society, provide services to a broad array of refugee groups" (Nawyn, 2006, p. 6). This could be because religion is more of a "motivation and rationale" for wanting to do this work, while the actual processes of the service act like any secular non-governmental organization would provide (Nawyn, 2006). Either way, scholars agree that faith-based organizations play one of the most influential roles during the refugee process, making religiosity an interesting independent variable to test for when trying to gauge an individual's view on refugees. Based on what is found here, I would expect to see increased acceptance of refugees from the Bridgewater State University students who score higher in religiosity.

Party Identification and Religiosity

Party identification is always an important factor to consider when studying U.S. politics. As Converse argued, ideology is needed for an individual to give a consistent response to opinion polls, and parties are highly influential in supplying the basis for that ideology. In the U.S., Republicans score higher in religiosity than Democrats (Putnam and Campbell, 2010) (Malka et al., 2012). Moreover, the more politically engaged an individual is, the stronger the relationship between the two variables, religiosity and conservatism (Malka et al., 2012). These findings make party identification and ideology two more interesting independent variables to test in this study. If religiosity creates better feelings towards refugees, and Republicans score higher in religiosity, then Republicans should be more accepting of refugees, especially when compared to the results of the

NBC News/ Penn poll. I would expect the Bridgewater State University students who score high in religiosity to be more accepting of refugees

Hypotheses

Based on the existing literature, I have developed hypotheses that will be informed by my public opinion survey. My first hypothesis is: people who score higher in religiosity are more likely to be accepting of refugees. The reason for this is that faith-based organizations play an important role in the acceptance and resettlement of refugees in the United States. Since people with high religiosity scores are more likely to come into contact with refugees and their stories, they would be more sympathetic to the idea of helping them seek refuge. Therefore, the feelings of compassion created by being aware of and working with refugees would make religiosity a significant variable in deciding if someone is going to be favorable to the acceptance of refugees.

My second hypothesis is: people who identify as Republicans and conservatives will be less accepting of refugees. This is because of the partisan divide that exists on the issue of accepting refugees. According to Converse, ideology is needed to answer polling question consistently, and if Zaller is right, then ideology is informed by party elites. Thus, I would expect to see Republicans and conservatives following elite opinion and to be against accepting refuges in the United States.

Methods and Data

The method used for this study was a public opinion survey of 194 Bridgewater State University students. The survey was conducted from October 15, 2016 to November 27, 2016. The data for this research came from the answers to four questions pulled from the above- mentioned survey. To get data on people's willingness to accept refugees into the United States, I asked the question, "Does the U.S. have an obligation to accept refugees?" The reason I asked this question was because I wanted to get directly to the individual's feelings on refugees. By asking this question using narrow terms, like "obligation," I was able to get responses that would clearly show which way the dependent variable, acceptance of refugees, was changing. To get a participant's score on religiosity, I asked the question, "Not counting weddings or other events, how often do you attend religious services?" This question is pulled from the Cooperative Congressional Election Study (CCES), and is used to identify a participant's religiosity score. People who attend services at the highest rate will be considered "highly religious," with each answer after it being a lower degree of religiosity, as well as an answer for no religious participation. The question must be asked in this way to avoid social desirability bias. If a respondent was asked, "Are you religious?" they might answer "yes" if they think that is the way they are supposed to respond. By asking the question in this manner, a more accurate score of religiosity was taken from the participants. This gave me the independent variables I needed to test my first hypothesis. To establish a participant's party identification, I asked two questions, "Thinking about yourself, would you say you are a …?" as well as, "Thinking about your political views, would you say you are a …?" Party identification and ideology were both important independent variables for me to extract from the survey, which I used to test my second hypothesis. Overall, the answers to these questions allowed me to create three cross-tab analyses for the question I proposed. The statistical

significance found in these cross-tabs were used to inform my hypotheses.

Analysis

Overall, 58 percent of Bridgewater State University students were accepting of refugees. This result was not surprising, since 38 percent of BSU students considered identified as Democrats, while only 9 percent identified as Republicans. The difference in party identification here, compared to the party breakdown of the national poll, means that a different result was likely.

This cross-tab analysis shows how the independent variable, religiosity, affected the dependent variable, acceptance of refugees, and was used to test my first hypothesis, people who score higher in religiosity are more likely to be accepting of refugees. Among Bridgewater State University students, a higher score in religiosity caused a more favorable position toward the acceptance of refugees. For people who were either very religious or religious, 72 percent thought the United States should be obligated to take in refugees. The p-value was P < .05, making it a statistically significant relationship. I would reject the null hypothesis in this test, since this p-value presents an acceptable risk. This is because assuming that the null hypothesis were true, I would expect to see the observed relationship or more in 5% of studies due to random sampling error (Frost, 2014).

However, even with these results more analysis is needed. There was also an acceptance of refugees among non-religious students, as 62 percent felt that the U.S. should be obligated to accept them. This fits the overall difference from BSU students compared to the overall

population, since the former was in favor of accepting refugees at 58 percent, while the latter disapproved of accepting refugees at 56 percent (Kopicki et al., 2016). The results of the data confirmed my first hypothesis, as the participants' score of religiosity went up, their willingness to accept refugees into the U.S. also went up. Based on these results, it seems as though there is a quality of religious participation that would make an individual more accepting of refugees. Therefore, by studying certain aspects of religious organization and how individuals participate in them, a better understanding of how people form opinions about refugees could be discovered, since religiosity is a variable that changes those opinions.

This crosstab analysis shows how the independent variable, party identification, affected the dependent variable, acceptance of refugees, and will be used to test my second hypothesis, people who identify as Republicans and conservatives will be less accepting of refugees. Among Bridgewater State University students, 79 percent of Republicans were against accepting refugees into the United States. The p-value was P < .01, which means that there was a statistically significant connection between these two variables. These results confirmed my second hypothesis, since people who identified as Republican were less accepting of refugees. Moreover, I would reject the null hypothesis in this test, since this p-value presents an acceptable risk. This is because assuming that the null hypothesis were true, I would expect to see the observed relationship or more in 1% of studies due to random sampling error (Frost, 2014).

Here, Zaller's elite opinion theory seems to be taking

Table 1. Cross-Tab Analysis of Religiosity

	Very Religious	Religious	Somewhat Religious	Not Religious	Total
Yes	14 82%	9 60%	19 44%	55 62.5%	97 60%
No	3 18%	6 40%	24 56%	33 37.5%	66 40%
Total	17 100%	15 100%	43 100%	87 100%	163 100%

Chi Square	8.20
Degrees of Freedom	3.00
p-value	0.04

Table 2. Cross-Tab Analysis of Party Identification

	Democrat	Independent	Republican	Other	Not Sure	Total
Yes	51 82%	33 53%	3 21%	4 36%	7 47%	98 60%
No	11 18%	29 47%	11 79%	7 64%	8 53%	66 40%
Total	62 100%	62 100%	14 100%	11 100%	15 100%	164 100%

Chi Square	26.28
Degrees of Freedom	4

Table 3. Cross-Tab Analysis of Ideology

	Conservative	Moderate	Liberal	Other	Not Sure	Total
Yes	5 33%	16 41%	62 79%	1 25%	14 50%	98 60%
No	10 67%	23 59%	16 21%	3 75%	14 50%	66 40%
Total	15 100%	39 100%	78 100%	4 100%	28 100%	164 100%

Chi Square	**25.79**
Degrees of Freedom	4
p-value	0.00

effect, as party identification was a clear indicator of an individual's feelings toward refugees. Not only were Republicans unified on the issue, an 82 percent of Democrats said they believed the U.S. has an obligation to accept refugees. The breakdown here was also closer to the one seen in the aforementioned national polling data. Clearly, the issue of refugee policy has become a partisan one.

This crosstab analysis shows how the independent variable, ideology, affected the dependent variable, acceptance of refugees, and will also be used to test my second hypothesis, people who identify as Republicans and conservatives will be less accepting of refugees. Among Bridgewater State University students, 67 percent of conservatives were against accepting refugees

into the United States. The p-value was $P < .01$, meaning there was a statistically significant connection between the two variables. These results confirmed my second hypothesis, since people who identified as conservative were less accepting of refugees. Furthermore, I would reject the null hypothesis in this test, since this p-value presents an acceptable risk. This is because assuming that the null hypothesis were true, I would expect to see the observed relationship or more in 1% of studies due to random sampling error (Frost, 2014).

As Converse argued, ideology can be used to inform answers to public opinion surveys. However, ideology does not always align with party identification, so a closer look is needed to see if there is any difference between the two variables. In this case, since people are

not as knowledgeable about foreign policy it is likely that ideology is informed by party elites. Thus, ideology is probably closer to being tied to party identification on this issue. Also, as ideology on refugee policy is likely to come from parties, this result is supported by Zaller's elite opinion theory. Again, this result shows that there is a partisan split on the issue of refugees in the U.S.

Conclusion

I asked the question, "Is the U.S. obligated to take in refugees?" to try to see if there was a connection between this opinion and an individual's score of religiously. The results show that this connection exists, opening up the possibility that an aspect of participating in religious organizations is able to lock in an individual's opinion on refugees. Moreover, this research also highlighted that there is a clear partisan divide on the issue of refugee policy.

This research question provides many areas that should be explored in the future. If I were to do it again, I would like to have asked a question about the participant's attitude towards government welfare that is provided for refugees. An exploration like this, that is more policy based, could do a better job of explaining Americans' feelings toward the acceptance of refugees. Asking whether the threat of a foreign terrorist attack on U.S. soil was a concern for participants could have also provided more insight into which citizens are accepting of foreign refugees. Therefore, future research should address both the policy and threat aspects of the U.S.'s willingness to accept refugees.

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Liner Companies' Container Shipping Efficiency Using Data Envelopment Analysis

NICHOLAS CAMPANIELLO

Abstract

The liner shipping industry moves products around the world. There are thousands of container ships circling the globe at all times, making the global economy possible. Liner shipping companies ship anything that can fit into a cargo container. The standard containers measure 20 feet in length by 8 feet in width or 40 feet in length by 8 feet in width. According to Alphaliner (2015), there are at least 100 linear shipping companies in the world. This study will evaluate the efficiency of different-sized liner shipping companies using Data Envelopment Analysis: it will consider operational aspects and will only include

revenue as a financial output. The study predicts that companies with the best fleet utilization will have the highest efficiency scores even when their overall revenue may be less than other companies.

Purpose

The purpose of this study is to evaluate the efficiency of different-sized liner shipping companies using Data Envelopment Analysis (DEA).

Background

The liner shipping industry moves products around the world. There are thousands of container ships circling the globe at all times, making the global economy possible. Liner shipping companies ship anything that can fit into a cargo container. Liner container shipping companies use standard sized containers measuring 20 feet in length by 8 feet in width or forty feet in length by 8 feet in width. According to Alphaliner (2015), there are at least 100 linear shipping companies in the world. The liner shipping companies' fleets of ships can range in size from 6 container ships to 590 container ships. The industry standard for measuring how many containers a ship can hold that are twenty feet in length is Twenty Foot Equivalents or TEUs. One liner container shipping company, Maersk, is so large it controls 15% of TEUs carrying capacity in the world (Alphaliner 2015).

The container shipping industry is extremely competitive, and the rate charged for shipping a container is very volatile. In 2016 the rate that liner container shipping companies can charge went down. The liner shipping companies have to be as efficient as possible to stay profitable. According to the companies' quarterly reports, analyzed in this study, many liner shipping

companies in 2016 were not profitable even with large revenues, so efficiency is of the utmost importance.

Liner shipping companies' fleets of ships are made up of owned and chartered vessels. Owned ships are ships the company actually owns. Chartered ships are ships owned by other companies, but are contractually in service to the charting company for a certain period to make shipments between ports.

This study employs Data Envelopment Analysis (DEA) to analyze the efficiency of different-sized liner shipping companies. The inputs used here are fleet make-up (number of owned or chartered ships) and TEUs. The outputs are the number of TEUs transported and revenue.

Literature Review

There are two DEA versions that can be used, the Charnes, Cooper, and Rhodes (CCR) version (Charnes et al. 1978) and the Banker, Charnes, and Cooper (BCC) version (Banker at al. 1984). This study uses the CCR version; the CCR model is used in situations where outputs increase proportionally for increase in inputs. DEA has been applied in many industries, such as: telecoms (Tsai et al. 2006); hospitals (Bates et al. 2006); international banking (Casu and Molyneux 2003); and the hotel industry (Haugland et al. 2007).

In terms of DEA's applications in the transportation and logistics field, interested readers can refer to Markovits-Somogyi (2011) 's review, which showed that of the 64 transport studies using DEA, the majority represented studies on airports and seaports (23 and 21 respectively) followed by public transport (10), railways (9), airlines (4), and others (2). Compared to studies in other transport modes, productivity and efficiency studies in the shipping industry are very limited (Bang et al. 2012). These other transport modes include airlines (Chiou and Chen 2006); (Gillen and Lall 1997), (Merkert and Hensher 2011), (Fethi et al. 2002), (Scheraga 2004)]; railways (Oum and Yu 1994); and third party logistics (Zhou et al. 2008).

Another study that used DEA in transportation was Gutierrez et al. (2015), in which the Data Envelopment Analysis was used to assess the relative efficiency of container shipping agents operating at Spanish ports, and studied the factors influencing it. The analysis considered labor as input, and numbers of loaded and unloaded containers handled as outputs. This study of Spanish ports highlighted which ports were the most efficient at unloading containers from ships. The study considers operational units other than dollars in the analysis.

Panayides et al. (2011) measured operational and market efficiency of 26 major shipping companies including 15 container lines, 6 dry bulk, and 5 tanker firms. They used both Suitability, Feasibility, and Acceptability (SFA) and DEA models, and suggested that the efficiency estimation results from the two alternative approaches were similar in ranking for the sample firms. When it came to inputs and outputs for the market efficiency they used profits and the book value of equity as inputs, and the market value of equity as the output. For operating efficiency, they used total assets, number of employees, and capital expenditure as inputs and sales (in dollars) as the output. They found that container shipping companies were more efficient in terms

of operating performance and less efficient in terms of market performance than other groups of shipping companies. The study differed greatly from Bang et al. (2012) because it compared shipping companies that were used in different lines of the shipping industry, i.e. container shipping companies vs. dry bulk carriers vs. tanker firms. Bang et al. (2012) only compared the efficiency of container shipping companies. The Panayides et al. (2011) study only considered financial inputs and outputs in dollar amounts unlike Bang et al. (2012), who considered operational statistics in units other than dollars.

There is only one major study in liner shipping efficiency using DEA. The study by Bang et al. (2012) measures two dimensions of relative efficiency of container shipping lines. One is operational efficiency. This means maximizing operational output(s) or the amount of cargo carried by liners, by utilizing fleet capacity and the number of ships deployed as operational inputs. The other is financial efficiency, which is concerned with maximizing financial outputs (revenues and operating profit), and utilizing total assets and capital expenditure as financial inputs. The study currently being undertaken will differ from the above because the fleet capacity will be separated by owned and charted ships and owned ship capacity and chartered ship capacity. There will be two outputs: cargo carried in TEUs as an operational output and revenue financial output. According to Alphaliner (2015) the container shipping industry judges companies by TEUs transported and by revenue, that is why these two outputs are being used in this study's DEA model.

The current study will consider more operational as-

pects and only include revenue as a financial output. The current study predicts that companies with the best fleet utilization will have the highest efficiency scores even when their overall revenue may be less than other companies.

Input & Output Variables Analysis

This study uses the CCR version for the data envelopment analysis because this model is used in situations where outputs increase proportionally for increase in inputs. The study considers 12 Decision Making Units (DMUs) comprised of the following liner shipping companies: Maersk, CMA CGM Group, Hapag- Llyod, Hamburg Sud Group, Hanjin Shipping, OOCL, MOL, Yang Ming Marine Trans., NYK Line, K Line, Hyundai M.M, and ZIM). These 12 liner companies were chosen because they are in the top 100 liner shipping companies according to Alphaliner (2015) and have public information published on their companies' operations. There are four inputs and two outputs in this study. The inputs are operational. The inputs are number of owned ships, TEU capacity of owned ships, number of charted ships, and TEU capacity of charted ships. The outputs are number of TEUs transported by the company's fleet and revenue of the liner shipping company.

Inputs

Number of owned ships is based on the number of ships a company owns.

Number of chartered ships is based on the number of ships owned by other companies, but that are contractually in service to the charting company for a certain period of time to make shipments between ports like an owned ship.

TEU capacity stands for Twenty Foot Equivalent, the industry standard for measuring how many containers a ship can hold that are twenty feet in length. TEU capacity is separated by owned fleet TEU capacity and chartered fleet TEU capacity.

Outputs

Volume of TEUs transported by each company is the number of TEUs transported in a year by their fleets.

Revenue is the other output. Each company makes so much revenue from their operations.

These four inputs and two outputs will be plugged into a DEA model to determine the relative efficiency of the twelve DMUs.

DEA Model

DEA is a non-parametric approach to relatively evaluate the performance of a homogeneous set of entities referred to as Decision Making Units (DMU's) in the presence of multiple weight inputs and multiple weight outputs. DEA was first initiated by Charnes, Cooper and Rhodes (CCR) (Charnes et al. 1978) to compare the efficiency of multiple service units that provide similar services by considering their use of multiple inputs in order to produce multiple outputs.

DEA is a linear programming model that attempts to maximize a DMU's efficiency, expressed as a ratio of outputs to inputs, by comparing a particular unit's efficiency with the performance of a group of similar service units that are delivering the same service (Charnes et al. 1978). The units that are rated equal to 1 after the model is calculated are relatively efficient. The units

that are rated below 1 after the model is calculated are considered inefficient. Because the DEA linear programming model was formulated by Charnes, Cooper, and Rhodes, it is referred to as the CCR Model (Fitzsimmons & Fitzsimmons, 2010):

> Definition of Variables: Let E_k, with k = 1, 2, …,K, be the efficiency ratio of unit k, where K is the total number of units being evaluated. Let u_j, with j = 1, 2, …, M, be a coefficient for output J, where M is the total number of output types considered. The variable u_j is a measure of the relative decrease in efficiency with each unit reduction of output value. Let v_i, with I = 1, 2, …, N, be a coefficient for input I, where N is the total number of input types considered. The variable v_i is a measure of the relative increase in efficiency with each unit reduction of input value. Let O_{jk} be the number of observed units of output j generated by service unit k during one time period. Let I_{ik} be the actual units of input I used by service unit k during one time period. (Fitzsimmons & Fitzsimmons, 2010, p. 204)

Objective Function:

$$\text{Max } E_e = \frac{u_1 O_{1e} + u_2 O_{2e} + \ldots + u_M O_{Me}}{v_1 I_{1e} + v_2 I_{2e} + \ldots v_N I_{Ne}}$$

where e is the index of the unit being evaluated. This function is subject to the constraint that when the same set of input and output coefficients (u_j's and v_i's) is applied to all other decision making units being compared, no DMU will exceed 100 percent efficiency or a ratio of 1.0.

Constraints:

$$\frac{u1\,O1k + u2O2k + \ldots + uMOMk}{v1\,I1k + v2I2k + \ldots + vNINk}$$

$$<= 1.0 \quad k = 1, 2, \ldots, K$$

where all coefficient values are positive and non-zero.

To solve this fractional linear programming model using standard linear programming software requires a formulation. Note that both the objective function and all constraints are ratios rather than linear functions. The objective function is restated as a linear function by scaling the inputs for the unit under evaluation to a sum of 1.0.

$$\text{Max } Ee = u_1O_1e + u_2O_2e + \ldots + uMOMe$$

Subject to the constraint that:

$$v_1I_1e + v_2I_2e + \ldots vNINe = 1$$

For each service unit, the constraints are similarly reformulated:

$$u_1O_1k + u_2O_2k\ldots + uMOMk - (v_1I_1k + v_2I_2k\ldots + vNINk)$$
$$<= 0 \quad k = 1, 2, \ldots, K$$
where:
$$uj >= 0 \quad j = 1, 2, \ldots, M$$
$$vi >= 0 \quad i = 1, 2, \ldots, N$$

Sample Size

The following relationship relating the number of service units K used in the analysis and the number of input N and output M types being considered is based on empirical findings and the experience of DEA

practitioners:

$$K >= 2(N+M)$$

(Fitzsimmons & Fitzsimmons, 2010, p. 204)

Data Analysis and Results

This study considered 12 liner container shipping companies as its DMUs. The liner companies were selected because the companies were in the top 100 liner shipping companies in the world according to Alphaliner (2015) and had public financial statements for accuracy of information. These liner companies range in size from 7 to 285 owned ships; from 26 to 365 chartered ships; owned TEU capacity from 32,053 to 1,180,000 TEUs; chartered TEUs from 63,902 to 1,213,154 TEUs; volumes transported from 2,360,000 to 19,044,000 TEUs; and revenues from $2,991,100,000 to $23,729,000,000. The inputs of number of owned ships, owned ship TEU capacity, number of charted ships, and charted ships were entered into the DEA model. The outputs of TEUs transported and revenue were entered into the DEA model. Table 1 contains the input and output data for the 12 DMUs. It also contains mins, maxs, standard deviations, and averages for all of the data categories. Table 2 contains the DEA model results which are the efficiency scores for the 12 DMUs and the shadow prices for the inefficient DMUs. DMUs 1, 2, 3, 4, 5, and 7 were below 1 so they are inefficient. DMUs 6, 8, 9, 10, 11, and 12 were equal to 1 so they are efficient. Table 3 contains the results for improving the inefficient DMUs 1, 2, 3, 4, 5, and 7. For example, in order to be efficient, DMU 1 (Maersk) needs to keep the same current revenue and volume of TEUs transported, but to reduce its fleet size of both owned and charted ships and to reduce its TEU capacity for both owned and charted ships.

Results Data Tables

Table 1. Input and Output Data for 12 DMUs Representing Liner Container Shipping Companies

		Outputs		Inputs			
		In TEUs (Twenty Foot Equivlent Units)	In USD	Owned		Chartered	
DMU	Operator	Volume Transported in TEUs	Revenue	Ships Owned	TEU Capacity	Chartered Ships	TEU Capacity
1	Maersk	19,044,000	23,729,000,000	285	1,830,000	305	1,132,000
2	CMA CGM Group	12,995,000	15,241,700,000	88	603,820	375	1,213,154
3	Hapag- Llyod	7,401,000	9,764,795,330	71	521,640	106	444,360
4	Hamburg Sud Group	4,101,000	6,261,000,000	48	310,000	82	315,000
5	Hanjin Shipping	4,624,140	4,690,479,000	37	274,000	58	344,000
6	OOCL	5,575,874	5,927,023,000	51	362,325	52	199,096
7	MOL	3,994,000	6,949,842,624	16	98,152	79	456,302
8	Yang Ming Marine Trans.	4,018,355	3,812,657,751	75	499,488	26	63,902
9	NYK Line	4,000,000	6,827,780,911	48	279,294	51	216,429
10	K Line	4,100,000	5,946,525,728	12	80,150	56	310,367
11	Hyundai M.M	3,023,000	3,983,763,060	23	173,000	34	218,000
12	ZIM	2,360,000	2,991,100,000	7	32,053	74	326,211
	Average	6,269,697	8,010,472,284	63	421,994	108	436,568
	Min.	2,360,000	2,991,100,000	7	32,053	26	63,902
	Max	19,044,000	23,729,000,000	285	1,830,000	375	1,213,154
	Standard Deviation	4894505.994	5928957355	74.42562894	479168.5746	111.422075	360570.3373

Note: All data is from is the Companies' annual reports and from Alphaliner.com collected for the year ending 2015. Data was retrieved in November 2016.

Conclusion

This study employed Data Envelopment Analysis to analyze the efficiency of different-sized liner shipping companies. The results of the DEA model show that the companies with the smaller sized fleets seem to be more efficient. The smaller companies seem to have used their TEU capacity more efficiently to move more containers around the world. Whether ships were owned or chartered did not seem to affect the results as much as TEU capacity to TEU volume transported might have affected efficiency scores. This study provides the container shipping industry with information about the efficiency of companies with different size fleets and TEU carrying capacity. The industry should realize that fleets that seem to turn over more containers in their volume of TEUs transported to the size of their fleets and carrying capacity are more efficient. So, liner shipping companies that are smaller and turn over shipments faster seem to be more efficient. One possible explanation for the seemingly large amount of excess capacity is the shipping routes. The larger liner companies tend to run longer routes, while the smaller liner companies run shorter routes.

Limitations

This study was limited by available information and the specificity of the information available. Even though volume of transported TEUs is an industry standard of how much a company ships, it does not mean that those containers are filled and generating revenue. A factor like this would skew results. Liner shipping companies run many different kinds of routes with their ships. Some companies' ships make short trips up and down a coast, while other companies' ships do long ocean crossings. The difference in shipping routes that a company operates their fleet in could have a large bearing on how fast a turn around they can have on the volume of TEUs the company can transport. Companies

Table 2. Efficiency Scores and Shadow Prices

	DMU 1	DMU 2	DMU 3	DMU 4	DMU 5	DMU 6	DMU 7	DMU 8	DMU 9	DMU 10	DMU 11	DMU 12
OBJ	0.6896	0.6920	0.8474	0.7515	0.8665	1	0.9384	1	1	1	1	1
U1	1.7705E-08	5.3252E-08	3.0581E-08	4.3887E-08	1.8738E-07	9.4808E-08	0	2.4886E-07	0	0	1.4058E-07	0
U2	1.4852E-11	0	6.3606E-11	9.1283E-11	0	7.9528E-11	1.3503E-10	0	1.4646E-10	1.6817E-10	1.4434E-10	3.3433E-10
V1	0	0	0.0052	0.0074	0.0083	0	0	0	0	0	2.4852E-03	0
V2	2.6866E-07	5.0455E-07	0	0	0	1.4386E-06	8.8973E-06	1.4474E-06	1.7577E-06	2.0182E-06	7.2279E-07	2.0877E-05
V3	0	0	0	0	0.0119	0	0.0016	0	0	0	2.4053E-02	0
V4	4.4907E-07	5.7317E-07	1.4222E-06	2.0411E-06	0	2.4046E-06	0	4.3355E-06	2.3522E-06	2.7008E-06	0	1.0141E-06
CONST0	0.6896	0.6920	0.8474	0.7515	0.8665	1	0.9384	1	1	1	1	1
CONST1	0	0	0	0	0	0	0	0	0	0	0	0
CONST2	0	0	0	0	0	0	0	0	0	0	0	0
CONST3	0	0	0	0	0	0	0	0	0	0	0	0
CONST4	0	0	0	0	0	0	0	0	0	0	0	0
CONST5	0	0	0	0	0	0	0	0	0	0	0	0
CONST6	2.4421	0.6467	0.6553	0.1170	0.5342	1	0	0	0	0	0	0
CONST7	0	0	0	0	0	0	0	0	0	0	0	0
CONST8	0	0	0	0	0	0	0	1	0	0	0	0
CONST9	1.3478	0	0.4348	0.5514	0	0	0	0	1	2.22045E-16	0	0
CONST10	0.0087	2.2901	0.4897	0.3032	0.4014	0	1.0734	0	0	1	0	0
CONST11	0	0	0	0	0	0	0	0	0	0	1	0
CONST12	0	0	0	0	0	0	0.1895	0	0	0	0	1

Table 3. Improvements for Inefficient DMUs

How to improve				Owned		Chartered	
DMU	Operator	Volume Transported in TEUs	Revenue	Ships Owned	TEU Capacity	Chartered Ships	TEU Capacity
1	Maersk	19044000	23729000000	**189**	**1261976**	**196**	**780632**
2	CMA CGM Group	12995000	17450772841	**60**	**398123**	**84**	**376564**
3	Hapag- Llyod	7401000	9764795330	**60**	**398123**	**84**	**376564**
4	Hamburg Sud Group	4101000	6261000000	**36**	**220696**	**51**	**236723**
5	Hanjin Shipping	4624140	5552899711	**32**	**225712**	**50**	**230930**
6	OOCL	5575874	5927023000	51	362325	52	199096
7	MOL	4848187	6949842624	**14**	**92107**	**74**	**394970**
8	Yang Ming Marine Trans.	4018355	3812657751	75	499488	26	63902
9	NYK Line	4000000	6827780911	48	279294	51	216429
10	K Line	4100000	5946525728	12	80150	56	310367
11	Hyundai M.M	3023000	3983763060	23	173000	34	218000
12	ZIM	2360000	2991100000	7	32053	74	326211

running short routes might be able to ship more containers because their trips are shorter. This study did not consider these two issues that could potentially affect shipping efficiency of the liner companies. Future research might want to look into these factors mentioned above.

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The Examination of Hip Joint Kinematics with iWalk in Walking Gait

TYLER CHAMPAGNE

Abstract

The purpose of this study was to examine the kinematic movements of the lower limbs involved in walking with a new hands-free crutch known as iWalk, manufactured by iWalkFree Inc. Recently, this new crutch has been developed to reduce underarm stress from conventional crutches, and improve walking efficiency. This study examined the movements with the iWalk by simulating a lower limb injury to the right lower limb in ten healthy female individuals in order to evaluate the kinematics of walking gait, specifically the hip joint angle of the non-weight bearing limb. The results of the study showed a significant increase in hip flexion angle when iWalk was used during the heel strike (145.1 ± 6.6°), mid support (149.2 ± 8.5°), and toe off (155.8 ± 10.7°) of the walking gait. Therefore, the design of the hands-free crutch has been found to alter the walking gait while in use. This increase of the hip joint angle may lead to an increase in the internal joint force and torque at the hip, which may increase the likelihood of developing a patellofemoral pain with continued use over an extended period. Future studies are warranted to examine the 3-D motion analysis and internal force and torque at the hip joint with the use of iWalk.

Introduction

One of the most fundamental forms of human locomotion is walking. Gait refers to how each body part performs while walking. A normal gait may be affected when one experiences a lower extremity injury such as hip replacement surgery, knee replacement surgery, ankle sprain or amputation. To re-enable this crucial movement in the individual, the primary pieces of rehabilitative care equipment utilized by hospitals are traditional underarm crutches. An average of 6.5 million people uses an assistive device such as crutches to assist with mobility in the United States alone (The Centers for Disease Control and Prevention, 2012). Beekman and Axtell (1987) indicated crutches are encouraged by therapists and thought to be less cumbersome and more versatile for patient use. Traditional underarm crutches are used by placing the crutch pads underneath the armpits, holding onto the hand grips, and balancing on one leg while using the crutches to accommodate ambulation for the non-weight bearing side. This process has been used and widely accepted for years: however, it is quite an impractical process.

Traditional underarm crutches are difficult to use, and if used improperly, can potentially result in further injuries to the body (Oran, Parildar, & Memis, 2000). One

significant challenge that arises when using crutches is inability to use the arms, in addition to the already immobilized leg. Essentially, functionality is lost in three of the four limbs. This makes simple everyday tasks such as opening doors and traversing stairs quite troublesome and challenging for the individual. Traditional crutches reduce the independence of the individual and make life much more difficult than need be. They also pose a risk for numerous injuries simply based on the design (Choi, Ahn, Ryu, Kang, Jung, Park & Shin, 2015). Due to the pressure placed on the underarm during crutch use, compression of the brachial plexus occurs. The brachial plexus is the network of nerves surrounding the neck region that break off and form nerves that run down the upper limbs and control sensation and movement in these limbs. More specifically, compression of the radial nerve which is a branch from the brachial plexus arises and can cause pain, tenderness, and motor weakness (Choi, Ahn, Ryu, Kang, Jung, Park & Shin, 2015). Crutches also affect the ulnar nerve, which can become entrapped and lead to further complications. The ulnar nerve may become compressed at the axilla by the crutches; compression of the ulnar nerve can lead to nerve damage and neuropathy (Jacobson, Fessell, Lobo, &Yang, 2010). When attributing this to crutch operation, this is referred to as crutch palsy, or crutch paralysis.

In humans, it is believed that symmetrical walking gait helps maintain upright positioning and forward propulsion. When the walking gait is rendered asymmetrical, injuries arise from additional stress and force being put onto one leg due to muscle imbalance. Gouwanda (2014) indicated that asymmetrical walking gait leads to lower back pain, osteoarthritis, and a higher poten-

tial of falling. Further, Nadler et al. (2001) found lower back pain is quite a common occurrence in female collegiate athletes due to musculature imbalance between the two sides of lower extremity. The researchers conclude that imbalance derives from a stronger right or left abductor gluteus medius muscle, and a stronger right or left extensor gluteus maximus muscle. This imbalance would lead to asymmetrical walking gait which results in a higher potential risk for lower back pain and lower limb injuries (Nadler et al., 2001). Increased incidences of lower extremity injuries were discovered in athletes with right knee flexors or extensors 15% stronger than the left (Knapik, Bauman, Jones, Harris, & Vaughan, 1991). In order to counteract the problems put forth by outdated, impractical, underarm crutches, as well as attempting to prevent asymmetrical walking gait, a new form of crutch has been released onto the market known as the iWalk Free.

The iWalk, is a new form of crutch that is hands-free, completely eradicating the stress applied to the underarm area from traditional crutches, **Figure 1**. This, in theory, will minimize the secondary effects and injuries of underarm crutch use previously mentioned; impractical design, hand requirement, and nerve damage. The device allows individuals to travel up and down stairs and have full use of the hands to assist in the process. The iWalk engages the upper leg muscles of the injured leg to prevent muscle atrophy which could result in an imbalance of the gait. Furthermore, it is easier to store and transport due to its smaller size and lighter weight. Due to the recent release of the iWalk, there is a lack of empirical evidence on its effects in relation to walking gait. Therefore, the purpose of this study was to examine the symmetry of walking gait with iWalk. The
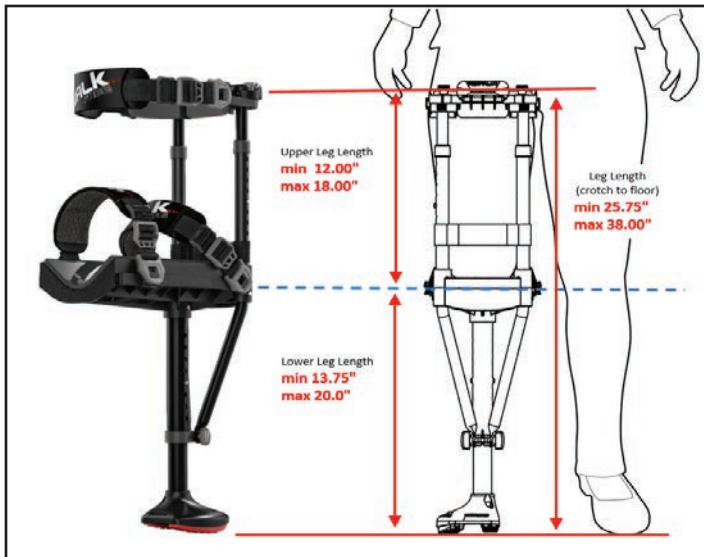
Figure 1. Fitting guide for the iWalk Hands-Free Crutch.

results of this study will provide further knowledge about the effects of walking gait with an assistive device and also inform medical practitioners about whether the iWalk is a beneficial and feasible replacement of traditional underarm crutches for patient use.

Methods
Ten healthy, injury-free University female students with an average age of 20.2 ± 1.6 years old were recruited to participate in the study. Prior to the study, IRB approval was acquired, and written informed consent was obtained from each participant. All participants received a confirmation E-mail and phone call prior to appointment date to ensure participation. Each participant arrived at the Biomechanics Laboratory at specific times throughout the day to ensure enough time for each individual. Each participant was allowed to warm up first by stretching and walking on the treadmill. Then, ten joint reflective markers were placed on both sides of the body at the shoulder (gleno-humeral joint), hip (greater trochanter of the femur), knee (lateral epicondyle of the

tibia), ankle (lateral malleolus) and toe (base of the fifth metatarsal). The participant then walked barefoot on a treadmill at a speed of 1.03 meters per second for thirty seconds, **Figure 2.**

Then, each participant was fitted to the iWalk device, which was tailored to each individual using the fitting manual, **Figure 1**. The knee of the non-weight bearing limb was adjusted until it was symmetrical with the weight bearing knee with a slight outward angle. They each put on the device and placed feet shoulder width apart with the help of an assistant. Once the individual could stand on their own for 30 seconds, and were capable of walking in the device without assistance, they began walking on the treadmill at the same speed of 1.03 meters per second, **Figure 2.**

The treadmill was located in the middle of the Biomechanics Laboratory with high speed Casio cameras (Model EX-FH25) positioned to capture the sagittal views of both right and left sides at 120 Hz. Two 650W artificial spot lights were used in conjunction with each camera to assist in joint marker identification. All video trials were transferred onto a Bridgewater State University computer in the Biomechanics Lab for gait analysis. Three successful walking gait cycles were used for analysis. The instant of heel strike, mid-foot support and toe off of the walking gait at the hip joint was analyzed in order to determine how much of a difference in normal walking gait the iWalk had on the individuals. A two-dimensional kinematic walking gait analysis was conducted with Aerial Performance Analysis System (APAS™) motion software. A total of 360 trials (10 participants x 2 conditions x 2 sides of the body x 3 gait cycles x 3 phases of gait) were analyzed, which
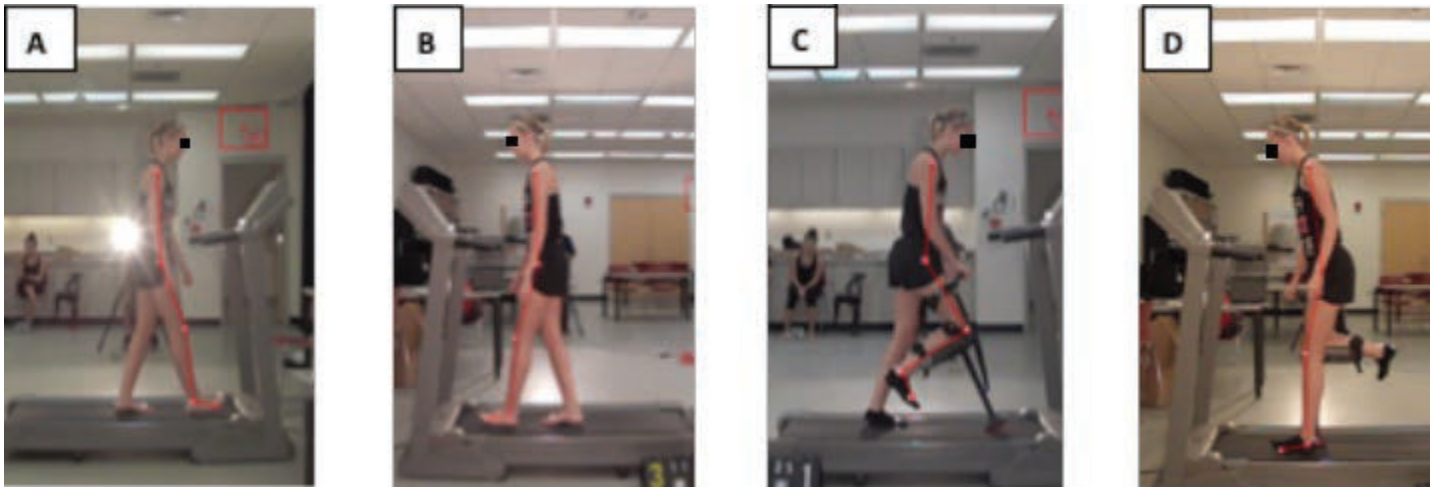
Figure 2. Heel strike phase during walking gait: A) Right side barefoot view, B) Left side barefoot view, C) Right side iWalk view, D) Left side iWalk view.

is typical in a biomechanics research study. Dependent sample t-tests were conducted with Bonferroni adjustment and all statistical analyses were conducted with SPSS software.

Results

Using SPSS software, dependent sample t-tests were conducted with Bonferroni adjustment ($\alpha = 0.05$ / # of comparisons = 0.05 / 4 = 0.0125) between right and left side iWalk as well as right and left side barefoot walking on the treadmill for each participant during heel strike, mid support, and toe off phases. Angular displacement of the hip was observed and analyzed using a dependent sample t-test where statistical significance was found at ($p < 0.0125$). This statistical comparison of data showed that the angular displacement of hip joint iWalk and barefoot at heel strike, mid support, and toe off as follows.

Table 1. Hip joint angle at heel strike. Data are means (SD).

Right Barefoot	159.6° (5.7°)
Right iWalk	145.1° (6.6°)
p	0.00
Left Barefoot	156.4° (6.2°)
Left iWalk	155.6° (7.8°)
p	0.45

Table 2. Hip joint angle at mid support. Data are means (SD).

Right Barefoot	171.7° (5.6°)
Right iWalk	149.2° (8.5°)
p	0.00
Left Barefoot	169.7° (6.8°)
Left iWalk	164.9° (8.3°)
p	0.01

Table 3. Hip joint angle at toe off. Data are means (SD).

Right Barefoot	174.1° (3.9°)
Right iWalk	155.8° (10.7°)
p	0.00
Left Barefoot	172.6° (4.6°)
Left iWalk	172.5° (5.9°)
p	0.96

These results showed that the iWalk does indeed cause an alteration to normal walking gait. The testing parameters which were affected were, as stated above, the right iWalk vs Barefoot hip angle at heel strike **(Table 1),** right iWalk vs Barefoot hip angle at mid support **(Table 2),** left iWalk vs Barefoot hip angle at mid support **(Table 2),** right iWalk vs Barefoot hip angle at toe off **(Table 3),** and right iWalk vs Barefoot hip acceleration at toe off **(Table 3).** The iWalk changed the hip angle by an average of 18 degrees on the right leg, while it altered hip angle merely 1.9 degrees on the left leg.

Discussion

The iWalk hands-free crutch is a newly released ambulatory device with little to no research supporting its benefits or hindrances. The device was released to deter further use of traditional underarm crutches due to the bodily harm they can cause. The purpose of this study was to examine the lower-limb gait with the iWalk crutch, more specifically to get a better understanding of how the iWalk affects the hip angular displacement while walking on a treadmill. The hip joint is one of the most substantial joints while performing ambulation. During normal walking, stress is applied to the hip joint because it's an area in which multiple muscles and ligaments attach. Jacobsen, Nielsen, Sorensen, Soballe & Mechlenburg (2014) describe the point of most tension on the hip by stating, "hip flexor muscles form the joint moment of hip flexion together with the joint capsule and the strong capsule ligaments at the end of the stance phase, where the leg is in maximal hip extension. In this position, maximal tension is put on the passive and active structures on the frontal side of the hip." In this study, Jacobsen et al. (2014) discuss the stress applied to the lower limbs during walking in individuals with hip dysplasia. They used 32 individuals and discovered by using a 3-D motion capture system that the peak flexion moment was different in individuals recovering from hip dysplasia surgery compared to the healthy individuals.

The hip joint is an imperative component to walking in individuals, and because the iWalk alters the angle of this joint, it will lead to further issues for the individual. The hip angle of the limb in the iWalk device was consistently shown to be lower than without the device. It is believed this is due to the added weight of the device. Thus, it is necessary to change the normal walking gait to compensate for this additional weight of the limb with the assistive device by increased hip flexion movement from possible greater stride length in walking gait of the non-weight bearing limb. The smaller hip angular displacement means that the leg is in flexion for a longer period with this weight, which may result in more stress applied to the hip joint and further asymmetry to the gait.

Seeley (2011) states that despite changes in underarm crutch design, repetitively inducing high magnitude forces to the upper extremities during traditional crutch ambulation often leads to upper extremity pathologies, while also requiring approximately twice as much metabolic energy as healthy walking. This study involved 10 male and 10 female participants and intended to find a healthier alternative to traditional underarm crutches by using another form of crutch as well. The spring-loaded crutch has a singular spring in the crutch post which is designed to store and return mechanical energy to the patient, which would in theory help propel the individual forward. The individuals walked at an average speed of 0.97 m/s on each type of crutch on a solid ground surface. They then used a paired t test to compare sample means between the two crutch designs. They proved there were more difficulties associated with crutches, but found no significant differences between the traditional crutches and spring-loaded

crutches ($p = 0.396$). Despite the results, this research provides supporting evidence that there needs to be a healthier alternative to underarm crutches.

While performing research there were some limitations encountered which could not be controlled. During walking with the iWalk some participants were uncomfortable in the device walking on a treadmill which resulted in holding onto the treadmill for added safety. This could have affected the resulting data. Time restraints resulted in a lower amount of time per participant to get accustomed to the device. If the participants were given more time to get used to the device, the results may have been more substantial. A delimitation put into place was the speed of the treadmill. The speed of the treadmill was set to a manageable speed that should have been a comfortable walking speed, while still maintaining normal walking gait. Another delimitation of the study was choosing to only analyze recordings of the left and right sides of the participants. Additional variables which could be added for a future study could be a rear- view camera to provide three-dimensional data, as well as male and female participants from various age groups, to fully encompass all individuals and to report more substantial results.

Conclusion

This study used ten healthy female students in order to examine the lower limb effects of using the hands-free crutch at heel strike, mid support, and toe off phases of walking gait. This study provides a basic understanding as to why an alternative to traditional underarm crutches are necessary. The results showed the iWalk does result in a significant change to the individual's hip angle when compared to normal barefoot walking.

This could result in an asymmetrical walking gait with extended use. Therefore, this study concludes the iWalk hands-free crutch will alter walking gait. Future studies are warranted to examine lower limb kinematics with both genders over a longer period to address long term use issues.

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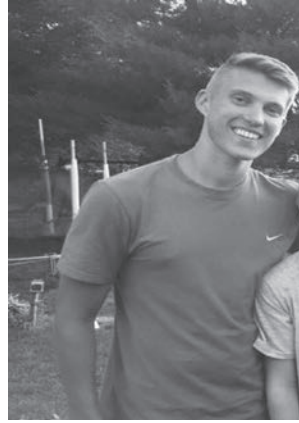
Tyler Champagne is a graduating senior pursuing Physical Education with a concentration in Motor Development Therapy. His research was a continuation of a pilot study performed under the mentorship of Dr. Tom Wu (Movement Arts, Health Promotion, and Leisure Studies). This research was funded both by the 2016 Spring Semester Grant as well as the Adrian Tinsley Program Summer Research Grant. Tyler eagerly anticipates presenting this research in the summer of 2017 at the American Society of Biomechanics in Boulder, Colorado. He plans to pursue his degree in Occupational Therapy.

Rio 2016: Gender Victories, Defeats, and Progress? Examining Gendered Language in Coverage of the 2016 Olympics

MEGAN CORCORAN

Abstract

The purpose of this research was to see how gender was represented in different sports and media outlets during the Rio 2016 Olympics. Gender is a major component of social identity in our society and looking at how it is presented in sports coverage can show us whether and how females are making their mark in a once male-dominated realm. I performed a content analysis on articles written during the 2016 Olympics, coding each to see how the articles represented the athletes covered. This study shows varying results that both reinforce and push gender boundaries. Furthermore, one can see progress within the sporting world but also see strict gendered guidelines that get reproduced within articles written about the athletes.

Introduction

Organized sports are one of the many influences on the ways we produce, enact, and push against gender stereotypes and social norms. In the case of the Rio 2016 Olympics there were many triumphs and heartbreaking losses for the women and men who took part in the games. To understand the ways in which these men and women were portrayed in the games and their sports, it is first important to understand how hegemonic masculinity is represented in sports and media, the overall way female athletes are viewed in society, and to look at any potential progress that has already begun.

Inequality shows its face in many aspects of everyone's lives whether we are aware of it or not. One of the major reinforcing agents of gender inequality, specifically, comes from organized sports. Gender inequality has made it extremely difficult for female athletes to be recognized as equally great athletes alongside their male counterparts. Weber and Carini (2011), discuss how women's sports leagues have been popping up for some time now, but, with little to no coverage in the media, it is hard for women's leagues to capture audience attention, audiences that could allow fans to become active consumers of the sports they want to follow. When fans are not accustomed to following female sports leagues it reinforces gender barriers, or this idea of hegemonic masculinity. Brandy (2016) writes that sports are far more complex now that a "cultural turn" in society has given scholars the chance to look into the influence of gender within sports. This cultural turn, or the changing perceptions of gender within our culture and sports culture, allows scholars to notice ways in which gender can be expressed or not expressed in the sports world. Since the Olympics happen only every four years, Delorme (2014) found that athletes' sex may be pushed to the background because of nationalism and the sense of competition that is based solely on winning

and losing. Considering these two different views, one showing sports as male-dominated with female athletes discredited in terms of their success in sports, and another arguing that the Olympics put gender stereotypes on the backburner for three weeks, the aim of my research is to see if, within the Rio 2016 Olympic Games coverage, female athletes were reported on differently than males. Because of the male-dominated culture of sports, it is particularly important to notice or acknowledge gender progress or its lack. Learning if there has been any change in gendered representations in sports coverage could show us that we have made little progress and how much further we need to go before women and men are equally represented within sports and other aspects of society that are male-dominated, and it might allow us to move in a more positive direction as a society.

Literature Review
Hegemonic Masculinity in Sports and Media
When you think of sports, there is often an immediate image you get in your head; one of males showing their strength and prowess in the presence of other males to win championships and medals. In the United States and elsewhere, we have been socialized within our society to believe that masculinity is powerful and right; therefore, sports are seen as events in which males can express this power. A belief in the "rightness" of males in sports, rather than females, is explained by the concept of hegemonic masculinity (the practice of legitimizing male dominance over women and marginalized men using stereotypical ideas of masculinity). Rather than challenging the ideal of male dominance, stereotypes and sexism in media representations may enables the ideology of the patriarchy to remain dominant. By

looking at sources or media that enable or reinforce patriarchy, we can see that these beliefs transcend to the institutional level within sporting society, in which there is more focus on males and females get pushed to the side (Carlisle, 1993). Theberge and Cronk (1986) analyzed newspaper coverage of sports, and found that men's sports matter in North America, and that an entire system of sports and fandom exists in support of male sports because of this reality.

Ideas of masculinity shape not only our own views of what makes an athlete great, but these ideas have the ability to weaken the potential success female athletes could have. Major magazines like *Sports Illustrated* minimize female athlete participation in sports, and because people continue to buy or read the magazine, women are presumed not to have the same athletic ability as men (Weber & Carini, 2011). In a study of previous Olympic athletes, gold medal winning female athletes were depicted using stereotypic language (beauty, passivity or subservience) that reinforces the beliefs of the gendered nature of sport and men's supposed superiority (Jackson, Jones & Murrell, 1999). Carlisle (1993) writes when women are objectified in a magazine, by showing them as static objects that must be analyzed and examined, this gives others the ability to then be able to "own" them, figuratively and to objectify that object. Weber and Carini (2011) look at how the magazine uses that system of people "owning" the women in the magazines to sell products over reporting fairly to women and men competing in the sports world. Media profiles (profiles written about athletes' accomplishments and personal matters) during the 2008 Olympics are another way to view women's subordinate position to men. Many of the women's profiles

contained more personal information than men's did (Casanova & Maume, 2015). Media profiles are used by the mass media, so when women's profiles have more personal information, rather than a focus on their sporting accomplishments, the hegemonic idea that men are good at sports and women are good at "soft skills" is reinforced (Casanova & Maume 2015). While media coverage could make a difference in the sports world, supporting and increasing interest in female athletes and teams, there has been, instead, a tendency to highlight gender norms and ideas of hegemonic masculinity.

Given the focus on male sports in North America (Theberge & Cronk, 1986), it is not surprising that mainstream publications reinforce gender norms. Kane (1988) did a study that showed, in the case of *Sports Illustrated,* there was a clear divide in how female athletes were talked about: for example, there was more focus on the females who participated in sports that are considered to be appropriate for women, and this focus meant that the media would describe the female athletes in a feminine way. These terms support gender stereotypes of female athletes, using feminine language for women.

Underlying hegemonic beliefs as well as coverage creates an impression that men are better in sports and that male sports are better than women's sports. When there is demand for something, there is often more money for it. Theberge and Cronk (1986) discuss how men have been the primary consumers of sports news in the past. Since sports are very commercial, newspapers are likely to report on male-dominated sports. Access, popularity, and ideas about gender make female represen-

tation in most media shallow. They do not get the credit they deserve as athletes, not just female athletes. While studies have shown that gender bias in sports media is strong, there are also chances that the media can help breakdown these intense views. Delorme (2014) concluded that the Olympics are a great way to help promote female participation, even in a male-dominated world of sports. Nations outside of the United States express differences in gender through nationalism and this often pushes the femininity discourse to the side, allowing athletes to be both great athletes and good people (Bruce 2015). Bruce (2015) goes on to state that there is an emergence of strong, tough and beautiful female athletes within media which shows there might be a new form of femininity that showcases their physical strength and excellence in respect to men. The internet may be changing how the media covers sportswomen, such as giving female sports fans a place to talk about female sports, and giving those sports fans a chance to read articles on the female athletes that were not published in popular media outlets. These examples are just a small way that the internet is allowing female athletes to become cultural icons (Bruce, 2015). Media is changing in today's society and that is important to the success of female sportswomen, and their ability to challenge ideas of hegemonic masculinity.

Societal Views of Female Athletes

Looking more specifically at female athletes, there are many stereotypes that they either live up to or fight against; for example, saying that a female athlete is weak and cannot compete at a high level. Claude Steele's concept, called stereotype threat, is "that apprehension produced by one's awareness of widespread negative stereotypes about a certain dimension of one's identity

(race, sex, class, or any other collective marker) might cause sufficient psychological distress to disrupt one's actual performance" (Markovits & Albertson, 2012, p. 58)." This idea can have profound impacts on female athletes in the sports world, especially when they deal with the objectification of their bodies in media. Female athletes are evaluated using traditional ideas and widespread beliefs about gender whether they are participating in traditional gender sports or nontraditional gender sports (Jackson et al., 1999). Unfortunately, there is constant comparing of female athletes to male athletes within media coverage (Jackson et al., 1999). It is extremely hard for female athletes to stand on their own, without being compared to men and the expectations that society has placed on them. Theberge and Cronk (1986) discuss how journalists struggle with the deeply ingrained belief that men's sports are what people want to see, and while there might be an increase in female athletes, it doesn't mean this way of thinking is going to change that quickly.

Many female athletes in our society are viewed as sexual objects that are there for the men in society, and there are also ideas still in place that want to put women in the ideal "housewife" box. These ideas are reinforced in many different ways. Channon and Khomutova (2015) look at the 2013 LFL (Lingerie Football League) US season to examine the ways the LFL portrays the women that compete in the league while also examining how this is related to female athletes as a whole. The LFL is a football league for females, in which the women wear lingerie while playing in the games. Channon and Khomutova's study found that while on the surface women playing football seems promising for gender equality, in reality, the LFL is a continuation of heter-

onormative gender roles and male privilege because the women are displaying their sexuality to seem desirable to men. Males who play football do not dress as sexual objects. The contrast shows the cultural expectations that females must appear sexually attractive, and available, while the men do not (Channon & Khomutova 2015).

Weber and Carini (2011) talked about how women who read sports media should be able to focus on athletes' abilities, but are instead fed ideas about beauty and sexiness, because of gender bias. Even when women's success challenges historical gender beliefs, they are still compared to males, who play at a level that "really counts" in the eyes of society (Jackson et al., 1999). Jackson et al. (1999) went on to explain that when a female plays in "female-appropriate" sports the media is much kinder to her performance and stays task-relevant. On the contrary, when female athletes compete in sports that have not traditionally included many women, the media coverage tends to focus on matters that are irrelevant to the sport and the athletes (Jackson et al., 1999). Through these findings we can see that there are strict social boxes around female athletes, and if they try to push the boundaries, their femininity is used against them. Similarly, Kane (1988) examined coverage of female athletes and found that though it has increased, there was still restriction of the coverage, in the sense that coverage was limited to the sports deemed sex-appropriate (sports known to be dominated by members of one's own gender). Sports deemed sex-inappropriate were covered much less.

With the media focus on "gender-appropriate" roles, female athletes have been viewed more as *women* than as

athletes. Casanova and Maume (2015) examined profiles of the 2008 Olympic Athlete Guide to show that the women's profiles were 10% longer than the men's. The women's profiles contained 55% more discussion of their personal lives than did the men's. In these profiles the introduction of female athletes focused on family and hobbies (23%); most hobbies were determined to be feminine (85%) or things outside of their sport (Casanova & Maume 2015). When *Sports Illustrated* featured more than just professional sports, [such as the swimsuit edition or editorials], it was twice as likely to feature women (1954-1965), even during a time period of intense gender ideologies (Weber & Carini, 2011). The profiles (and other forms of media) have helped highlight a social idea that women have more to do outside of sports (i.e. domestic work) which works to maintain their femininity (Casanova & Maume 2015). The newspaper *Pioneer,* based in a southwestern U.S. city, receives information from wire service reports, so though they might not actually consider female sports as less, the coverage they are given access to is biased towards male sports because of the way male sports dominate the culture of sports (Theberge & Cronk, 1986). There are many factors that control the way we view or are able to view female athletes based on the way media portrays them. Kane (1988) looked at how there wasn't a big difference in the amount of coverage during and after Title IX, but there was a shift in regards to females who were able to now show their athletic abilities versus before Title IX when women were seen as nonathletic and their roles in society were bound to the ideas of femininity. There are more female athletes in the world now than in the past, but we still know so little about them and their leagues. Still, increasing numbers of female athletes and teams and increasing numbers of female fans may help push for more changes in sports.

Progress within the Sporting World

What kind of progress has there been in terms of gender and sports? Promoting women athletes can have great effect on millions of females in society, but most media continue to portray women in stereotypical ways that are difficult to change (Weber & Carini, 2011). Coakley says that:

> It is the organizational and institutional dimension of gender that now slows progress toward equity in sports. In other words, we can change out attitudes and personal relationships to be more inclusive and less constrained by orthodox gender ideology, but until we change the taken-for-granted gender logic that structures so much of sport and sport organizations, full gender equity will not be achieved (212).

There need to be changes in news-rooms, but there also need to be changes in the social structure of sports (Theberge & Cronk, 1986). Kane (1988) says that there have been changes in media with respect to the coverage of females in *Sports Illustrated* before, during, and after Title IX. Title IX allowed females to stick their foot in the door of the sports world, and stay there and fight for equality.

There was an increase in the type of coverage female athletes got during and after Title IX: there was a 77% increase of coverage during Title IX that was given to female athletes, and 82% after Title IX. This increase shows that we are starting to see female athletes as

serious athletes (Kane, 1988). The profiles discussed by Casanova and Maume (2015) do appreciate the female athletes' accomplishments, with career highlights, and awards, etc. Women get far more media coverage than they did, sometimes even more than men, which may indicate a changing tide in media coverage (Delorme, 2014). If the media is starting to shift the ways it views and reports on female athletes, it may allow for other aspects of gender stereotypes to change as well.

Like the other studies above, Channon and Khomutova (2015) found that not everything about the LFL was terrible. It can be said that the uniforms female athletes wear give viewers a chance to see the muscle and power these women possess. That muscle and power can then be seen as more masculine, which in some aspects can be contradictory to what was discussed previously. But this creates a different dynamic, where these women are lusted after but are also admired for their athletic abilities. These women can signify the deconstruction of gender boundaries dividing sex and athleticism (Channon & Khomutova, 2015). There are still a lot of stereotypes being displayed in the LFL and its coverage but if audiences are given the chance to view women as something other than sex objects it may be a small step in the right direction.

Weber and Carini (2011) say that the change that needs to occur is slow and requires social forces and fans' demand for more coverage and less sexist coverage of the female athletes. Bruce (2015) says that there is a far greater representation of female athletes in the media today than there was 30 years ago. Brandy (2016) discusses the "cultural turn" that is occurring in society and how this new view gives an understanding that

shows that sports aren't just a culture or social process but a major player in effecting culture. Sports give us a chance to look at hegemonic masculinity, stereotypes, and potential gender progress.

Methods

To evaluate potential gender progress in popular sports media, I conducted a content analysis of media coverage of the Rio 2016 Olympics. Many researchers have demonstrated gender bias in media coverage of sports, but others have noticed some change. With the Olympics just having passed, there is much to learn from how media either continues to reinforce ideas about traditional gender stereotypes or is shifting away from those stereotypes. I would like to think there has been a change and with this content analysis I aimed to examine media outlets during the Rio 2016 Olympics, analyzing the ways society still categorizes female and male athletes. In my study, I focused on three different sports, and for each sport I chose one male athlete and one female athlete from Team USA to compare their treatment. After that I made the decision to look at three different types of media outlets that ran stories on these athletes to see if the targeted audience of certain publications influenced gendered language. I looked at a total of 36 articles, from 6 separate media sources, and from these sources I looked at an article for 3 male and 3 female athletes within each of the 3 sports chosen.

I decided to look at three separate sports with different gender attributes: Swimming (semi-neutral), tennis (male-dominated) and gymnastics (female-dominated). Swimming is a sport in which the races are the same for both genders, therefore hopefully eliminating some forms of stereotypes about the athletes. There is also

fairly even media attention and air time given to both the male and female swimmers during the Olympics because of its new popularity and the big names on Team USA. Tennis has different rules based on gender; for instance, females play only three sets versus the five sets males play in a game, so I thought that it would be useful as a sport with different gender rules. Maybe as a result, tennis coverage seems to use more traditional gender stereotypes for the female athletes than the male athletes (i.e. choosing to focus more on the physical appearance of female tennis players over their abilities). Lastly, I focused on gymnastics because the women's team gets more recognition and attention than the men's team, which sees little of that spotlight. This is interesting and seems to be the opposite of most other sports in the Olympics. Gymnastics may be reverse in the sense of attention, but this reasoning is most likely connected still to hegemonic masculinity within society and what the media believes people want to watch. In gymnastics the females are put on display in form fitting leotards that can spotlight their bodies, while it is presumed that people don't want to watch men in leotards.

After deciding which sports I would research, I chose specific athletes from each sport to focus on. I chose one male athlete and one female athlete from each sport. For swimming, I chose Michael Phelps and Katie Ledecky. Both of these athletes have high profiles both within and outside the swimming world, which means there are a lot of articles written about them that can give a good perspective on how the media portrays them overall. For tennis I chose to examine coverage of Serena Williams and Jack Sock because, like the swimmers, they have high profiles (mostly Serena Williams). Though Jack Sock is not as popular as Serena and other tennis players, he still saw success in the 2016 games with his mixed doubles partner, Bethanie Mattek-Sands. For gymnastics I chose Aly Raisman, and because of lack of attention paid to the male gymnasts, I looked at articles that focused on the USA's male gymnastics team as a whole. Aly Raisman was not the number one star of the Final-Five (the name given to all five gymnasts competing for Team USA in the 2016 Olympics) this year, but she is a two-time Olympian. Looking at an athlete with slightly less media attention this Olympics might garner different results than looking at other popular gymnasts. Because Aly Raisman had been in the Olympics before, the media already had some basis on which to write stories about her. By looking at the male team as a whole, one may get a sense about the type of coverage they do get, though still small.

In order to add another layer to my research, I wanted to look at specific media outlets in order to see if there was any variation in the way they report on athletes based on the athletes' gender. I chose *ESPN* (in one case *ESPNW* was used) and *Sports Illustrated* because they are dedicated to sports reporting. I also analyzed *The Boston Globe* and *The New York Times*. Both are well-known, broad-ranging newspapers, therefore, my thought was that they would give me a perspective on sports that was less biased towards particular sports or gender roles within those sports. The last form of media I wanted to look at is the very available media or media that people who may not have even followed the Olympics might stumble across through social media or popular media. In this case I chose *The Washington Post* and *NBC Olympics* as sources that appear frequently on internet timelines.

Coding

In starting to think about how to go about trying to categorize specific things within the articles, I first wanted to code words as stereotypically masculine (e.g., strong, tough, powerful) or feminine (e.g., graceful, weak, tears, emotional) when referring to the athletes they are describing in the context of the articles. These words give the readers an image of the athletes they are describing; therefore, looking at these stereotypically masculine and feminine words we can analyze how the media wants the readers to view female and male athletes. This would show how these media described both male and female Olympic athletes in Rio 2016. I also considered how the language used to describe athletes related to sports, coding into several categories.

The first code is *task relevance*, referring to statements or words about the achievement of sport-specific tasks of the athletes (i.e., performance based content). The second code is *task irrelevance*, statements/words that focus on personal lives and other things that do not involve their sports-specific tasks (i.e., saying that an athlete went to the beach during their time in Rio). For these two codes, I look at whether the statements are positive or negative, instead of masculine or feminine, because the codes consider overall sports tasks and are written more often in complex language rather than specific gendered words. An example of a positive task relevant code is, "Ledecky has been unstoppable in the 400m distance" (Lutz, 2016). This statement clearly focuses on her performance during an event at the game, and it uses "unstoppable" in a positive way to describe her success. An example of a negative task relevant statement is seen when discussing the US men's gymnastics team, "while they were plagued by mis-

takes on the pommel horse, their weakness at the 2012 Olympics as well" (Fincher, 2016). In this statement it focuses on how the men have struggled with the pommel horse by saying "they were plagued by mistakes," but it is task relevant because it is describing their performances during the event. The third code is *performance*, considering the ways the articles describe what athletes are doing while playing their respective sports (e.g., strong match or poor race). The fourth code is *appearance/emotions*, discussions of how athletes look, either while playing or afterwards. This code can include how emotions are talked about in terms of their appearance, for example, noting that an athlete was crying when they walked away. The final code is *social engagements*, statements within the articles that speak to the athletes' involvements outside the sports world (including personal lives or events, unrelated to their sports).[1] These codes are important because they give me a wide variety of ways words and statements can be used to impose gender stereotypes. With these codes I hoped to see whether there were clear distinctions between representations of male and female gender within the articles, but also whether there was a distinction between different types of media.

Data Analysis

Looking closely at the data collected, three major things stood out to me: first, popular and sports media use more gender stereotypes when talking about female athletes than male athletes; second, swimming coverage had a lack of obvious differences in representations of the female and male athletes; lastly, when looking at gymnastics, the female athlete and the men's team were viewed using similar language—for example, the

appearance of the men was more feminized, while the female athlete was also described using similar terminology.

Table 1 details sports media specifically (*Sports Illustrated* and *ESPN*), considering all sports at the same time. Sports media had more descriptions of the athletes, both male and female, in terms of their appearances, than the other media analyzed in this study. Table 1 shows that female athletes are described more in feminine terms than male athletes, but when comparing sports media to other forms of media, even the males have more descriptions using feminine language, as I will show shortly. The task relevance code indicates that sports media does tend to stay on topic, with 28% task relevance for the male athletes and 22.4% for the females, unlike in the code for task irrelevance, which only shows 10.8% for males and 7.8% for females in the data. These two categories use more positive than negative language in talking about both male and female athletes, which is represented in the above percentages. The negative remarks were represented in only 7% and 9.5% for negative task relevance and 2.3% and 6% in

negative task irrelevance (males and females respectively). The 9.5% of the data represented in the negative column for female athletes could be attributed to the poor performance of Serena Williams in the games, or any other poor play by a female athlete. Similar results are shown in the performance column where there is great representation of language used to describe the athlete's action in the game or meet, with 18.1% showing masculine language used to describe the males' performance and 21.5% to describe a female's performance in masculine terms. It is very interesting to note that female athletes get talked about in more masculine language than the male athletes within the performance because of the way society normally thinks of female sports or athletes as having less credibility within the sports world.

As soon as we look at codes that don't focus on performance and task relevance/irrelevance, we see quite different results. In an *ESPN* article that featured Aly Raisman, a female gymnast, there was a focus on the way that she appeared after one of her events during the games, not during: "Raisman's tearful exit from the

Media: Sport	Task Relevance		Task Irrelevance		Performance		Appearance		Social Engagements		Totals
	Pos.	Neg.	Pos.	Neg.	Masc.	Fem.	Masc.	Fem.	Masc.	Fem.	
Male Athlete	(25) 28%	(6) 7%	(9) 10.2%	(2) 2.3%	(16) 18.1%	(6) 7%	(3) 3.4%	(7) 8%	(11) 12.5%	(3) 3.4%	88
Female Athlete	(26) 22.4%	(11) 9.5%	(9) 7.8%	(7) 6%	(25) 21.5%	(6) 5.2%	(8) 7%	(18) 15.5%	(3) 2.6%	(3) 2.6%	116

Table 1. Comparison of male and female athletes in the 2016 Olympics by Sports Media (raw data in parenthesis)

Media: Popular	Task Relevance		Task Irrelevance		Performance		Appearance		Social Engagements		Totals
	Pos.	Neg.	Pos.	Neg.	Masc.	Fem.	Masc.	Fem.	Masc.	Fem.	
Male Athletes	(28) 37.3%	(8) 10.7%	(5) 6.7%	(2) 2.7%	(17) 22.7%	(7) 9.3%	(1) 1.3%	(3) 4%	(4) 5.3%	(0) 0%	75
Female Athletes	(21) 27.3%	(7) 9.1%	(16) 20.8%	(1) 1.3%	(17) 22.1%	(3) 3.9%	(4) 5.2%	(4) 5.2%	(4) 5.2%	(0) 0%	77

Table 2. Comparison of male and female athletes in the 2016 Olympics by Popular Media (raw data in parenthesis)

floor was a beautifully rare moment in the stoic sport of gymnastics" (Roenigk, 2016). This example uses words used for femininity (i.e. "beautiful"), and is one of many found within sports media that focused on the feminine way athletes appeared during and after their events in the games. This example also shows the way authors chose to focus on the appearance of the athletes after the event, race, or match, instead of the way they look while performing their sport, as represented in the 15.5% of the data that was used to describe the female's appearance in a feminine way.

Table 2 is looking specifically at popular media outlets in this study (*The Washington Post* and NBC Olympics).

Table 3 is looking specifically at print media disregarding the sports (*The Boston Globe* and *The New York Times*).

Popular and print media do not show the vastly different results that sports media do. The exception, perhaps, would be within the performance category in Table Three that shows similar results as Table One when looking at masculine language to describe female athletes, both within sport (21.5%) and print media (24.5%). There are significantly more instances in sports media and print media where that is the case, while popular media uses masculine language fairly equally to describe the female (22.1%) and male athletes (22.7%). One reason for this may be that popular media appeals to a wider audience and writes articles to be read by more people at a quick pace.

Looking specifically at gymnastics coverage, there was more feminine language used for women and men, which is both interesting and troublesome. The US men's gymnastics team finished fifth in the games, and this loss is indicated by negative task relevant language at 18.4% of the data, and for the feminine language used in describing their appearance with 8.2%. For example, when describing Leyva (a US gymnast), an article states, "he trudged off the floor" (Clarke, 2016). In this case, "trudged" was coded as feminine because it means to walk slowly with heavy steps, which one could envision a female being "dramatic" giving

Media: Print	Task Relevance		Task Irrelevance		Performance		Appearance		Social Engagements		Totals
	Pos.	Neg.	Pos.	Neg.	Masc.	Fem.	Masc.	Fem.	Masc.	Fem.	
Male Athletes	(21) 34.4%	(6) 9.8%	(10) 16.4%	(3) 4.9%	(13) 21.3%	(5) 8.2%	(0) 0%	(2) 3.3%	(1) 1.6%	(0) 0%	61
Female Athletes	(25) 24.5%	(11) 10.8%	(15) 14.7%	(7) 6.9%	(25) 24.5%	(9) 8.8%	(1) 1%	(5) 4.9%	(0) 0%	(4) 3.9%	102

Table 3. Comparison of male and female athletes in the 2016 Olympics by Print Media (raw data in parenthesis)

stereotypic norms. The female gymnast, Aly Raisman, did much better at the games, with a silver all-around medal. Though one would expect such success to be celebrated through prideful language or more masculine language, Raisman was discussed, in fact, in a very feminized way for both her appearance (12.1%) and her performance (also shown in 12.1% of the data). The high numbers in the performance and appearance categories are not shocking given the way gymnasts are objectified through their clothing and body types. What is surprising about gymnastics' representations is how the men's team gets talked about with feminine language for performance (15.3%) and appearance (8.2%). The men's team saw significantly less air time during the games, while the women's team took center stage. The language used to describe the gymnasts shows the overall view of gymnastics in our society as feminine despite the highly muscular nature of the male athletes. In North America, gymnastics is clearly a female sport.

Table 5 shows that Michael Phelps and Katie Ledecky are seen very similarly in terms of the articles I coded.

No category stands out as being clearly divided because of the gender of the athletes. Though Katie Ledecky does have a higher number in appearance for feminine language than Phelps at 8% versus his 4.3% of the data, she was still discussed in more masculine terms than he was at 4.4% versus his 1.1%. Both of these athletes are high profile in our society. I noticed that with higher task relevance numbers (36.6% for Phelps and 31% for Ledecky) there was also high task irrelevance (18.3% for Phelps and 17.7% for Ledecky). This could be attributed to the way the media focuses on their personal lives because they are such high profile athletes; more people may relate to them because of their personal lives outside of swimming. It may also be that there is less investment in swimming as a sport outside of the Olympics than other sports, so they really highlight their whole lives in the month they have the stage. In an article in *ESPN* where Katie Ledecky was the focus, they described her performance as, "Ledecky was simply too good, too dominant" (Drehs, 2016). A similar statement was used to describe Michael Phelps' performance in *The Boston Globe* stating, "Phelps

Sport: Gymnastics	Task Relevance		Task Irrelevance		Performance		Appearance		Social Engagements		Totals
	Pos.	Neg.	Pos.	Neg.	Masc.	Fem.	Masc.	Fem.	Masc.	Fem	
U.S. Men's Gymnastics Team	(25) 25.5%	(18) 18.4%	(4) 4%	(2) 2%	(18) 18.4%	(15) 15.3%	(3) 3.1%	(8) 8.2%	(5) 5.1%	(0) 0%	98
Aly Raisman	(27) 29.7%	(1) 1.1%	(11) 12.1%	(5) 5.5%	(16) 17.6%	(11) 12.1%	(2) 2.2%	(11) 12.1%	(2) 2.2%	(5) 5.5%	91

Table 4. Comparison of U.S. Men's Gymnastics Team and Aly Raisman across Sports, Popular, and Print Media (raw data in parenthesis)

finished a full body-length ahead of the field with total dominance" (Newberry, 2016). Both these quotes show that Ledecky and Phelps hold dominance within their sport which may cause their gender to be less salient. Swimming coverage appears to uphold my early belief that it is more gender neutral than other sports, though other factors may contribute to this sense of neutrality.

In tennis coverage, there are similarities to coverage of gymnastics. Serena Williams' performance is talked about in highly feminized language (13.2%). When comparing the two charts (table four and six), there is a similarity in the amount of negative comments in the task relevance code. Additionally, the feminine performance column for both Serena Williams and the men's gymnastics team are similar with 13.2% and 15.3% respectively. It is possible that if athletes do poorly in their events, their performance will not be described in masculine terms that are attributed to winning and dominance. Also, gymnastics is still seen as a female sport, despite men and women's performance. Given Serena Williams' extremely high-profile, it is possible

that feminine language underscores any performance that is not excellent. *Sports Illustrated* wrote about Serena Williams' performance by saying, "Serena and Venus love playing together and it was crushing for them to suffer their first-ever Olympic loss together" (Wertheim, 2016). This example indicates that their performance caused them "suffering" and that it was "crushing" to them. The language speaks to the way that they are a unit (playing together and cooperating, feminine) and *they* must be hurt (feminine terms) because their performance wasn't what was expected. Looking at Jack Sock, a less well-known athlete, his results are more typical. Sock had high positive task relevance (50%) and his performance was always talked about in a masculine way, with 20% and no language was used in a feminine way to describe his performance. His appearance was not brought up in the articles. These differences are not unusual and match what one would expect when reading about a male athlete. Tennis appears to be the most gender stereotypical of the three sports I examined in terms of athletes' descriptions.

Sport: Swimming	Task Relevance		Task Irrelevance		Performance		Appearance		Social Engagements		Totals
	Pos.	Neg.	Pos.	Neg.	Masc.	Fem.	Masc.	Fem.	Masc.	Fem.	
Michael Phelps	(34) 36.6%	(1) 1.1%	(17) 18.3%	(2) 2.1%	(22) 23.7%	(3) 3.2%	(1) 1.1%	(4) 4.3%	(8) 8.6%	(1) 1.1%	93
Katie Ledecky	(35) 31%	(0) 0%	(20) 17.7%	(2) 1.8%	(36) 32%	(0) 0%	(5) 4.4%	(9) 8%	(5) 4.4%	(1) .8%	113

Table 5. Comparison of Michael Phelps and Katie Ledecky across Sports, Popular, and Print Media (raw data in parenthesis)

Conclusion

My research shows how gender was represented in different media and for different sports during the Rio 2016 Olympic Games. There are clear differences when comparing the sports, and there are some surprising results between the different media as well. Swimming was, as I thought, a sport in which females and males are described similarly in all media. Coverage of Michael Phelps and Katie Ledecky shows that success can speak for itself. The incredible success of both these athletes shows that popularity can shift the way we describe athletes, disregarding their gender. Or, since the Olympics happen only every four years, it is possible that sex of athletes may be disregarded because of nationalism and a sense of competition based solely on winning and losing (Delorme 2014). While tennis and gymnastics coverage showed more gender norms in terms of describing the performance and appearance of the athletes, tennis shows far stricter gender boundaries when describing Serena Williams over Jack Sock. This may be due to the fact that Serena Williams is a much higher profile athlete than Jack Sock, or may be because tennis is seen as a masculine, male-dominated sport. Most ar-ticles written about Sock have Mattek-Sands (a female tennis player) present as well, which could make the data collected on him slightly less in depth. But even with the lack of in depth data collected on Sock, there are still very clear gender divides in tennis. Gymnastics coverage continues gender norms, but vastly differently than most other sports because male athletes are also described with feminine language. This speaks to the way gymnastics has been interpreted as a female sport within our society. It also doesn't help that the media pays far more attention to the female gymnastics team during the Olympics: that kind of publicity reinforces that gymnastics is a female sport, therefore leaving the men to live in the women's shadows and in the world of feminine language, even if they are, physically, the definition of masculine.

As for the different media outlets, sports media proved to be interesting to analyze against popular and print media. Though popular and print media did not show shocking results, they did provide a useful alternative to sports media. Sports media showed gender norms in respect to appearance of female athletes, but also used

Sport: Tennis	Task Relevance		Task Irrelevance		Performance		Appearance		Social Engagements		Totals
	Pos.	Neg.	Pos.	Neg.	Masc.	Fem.	Masc.	Fem.	Masc.	Fem.	
Jack Sock	(15) 50%	(2) 6.7%	(3) 10%	(2) 6.7%	(6) 20%	(0) 0%	(0) 0%	(0) 0%	(2) 6.7%	(0) 0%	30
Serena Williams	(10) 11%	(26) 28.6%	(9) 9.9%	(8) 8.8%	(15) 16.5%	(12) 13.2%	(4) 4.4%	(6) 6.6%	(0) 0%	(1) 1.1%	91

Table 6. Comparison of Jack Sock and Serena Williams across Sports, Popular, and Print Media (raw data in parenthesis)

more masculine terminology when describing the female athletes' performance. While still gendered, this may indicate some progress. This progress may not seem significant, but may indicate where things may be heading. Looking at different and more articles within each of these three categories would allow me to consider differences between media in more depth.

One potential error within my research was analyzing athletes of such varying popularity, because if an athlete was not as well known, he or she would likely not get the same amount of press as a very popular athlete, regardless of gender. Therefore, gathering data on specific athletes did not yield the type of rich data I'd hoped. If I were to do the study again, I might look into studying athletes of similar popularity even though that may require looking at different sports than I chose to focus on, or by focusing on international athletes that are well known. This study was too small to make any generalizable claims, but it was a great place to start. This study allowed me to make inferences about gen-der based on news coverage of the 2016 Rio Olympics. While more female athletes are discussed and known now in sports, and while we are clearly seeing progress in the acceptance of women as true athletes in society, women are still not represented as equals to men in media coverage of their sports. We have come a long way but we have a long way to go.

Note

1.   Initially, I also coded for "race." This code is gender neutral and aims to look at how one' s race was depicted within the articles, and if there is any overlap with gender. Race uses another placement category, negative or positive, instead of masculine or feminine, because the code is supposed to be gender neutral. This code did not appear in any of the articles so it was excluded from the findings, but it is still interesting to note this lack of appearance.

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"Injuring Her Beauty by Study": Women and Classical Learning in Frances Burney's Novels

STEPHANIE DIEHL

Eighteenth-century author Frances Burney uses her novels as vehicles to engage in contemporary discussions about methods of education. Seen as inferior tools for self-education, novels were, according to Samuel Johnson, "written chiefly to the young, the ignorant, and the idle, to whom they serve as lectures of conduct, and introductions into life" (176). To such thinkers as Johnson, an education from a novel could never compete with the classical education available to the privileged men at university. However, this education was denied to women, and it was a popular belief that a classically educated woman was "injuring her beauty by study" (*Camilla* 46). Thus women, as both authors and readers, mostly had access to the marketplace of novels. Aware of her contemporaries' pejorative view of the novel, Burney hesitates to even refer to her first work, *Evelina*, as a novel, fearing the rejection of male critics. Her treatment of the classics in *Evelina* reflects the dominant views of her contemporaries. The narrative voice echoes the prevailing opin-

ion of men during this time period: classically educated women were unappealing and unfeminine. However, as Burney matures as an author, her third novel, or, as she calls it "prose epic," *Camilla*, demonstrates a measurable shift from this point of view. The focus in *Camilla* departs from the disparaging attitude toward learned women, and instead points to the failures of the classical education for both men and women. An analysis of the evolution between her first and third novel, as well as her rejection of the classical education, demonstrates Burney's endorsement of the novel as an appropriate vehicle for education.

18th century philosophers, moralists, and conduct book authors actively discouraged women from pursuing a classical education because it would be detrimental to their femininity. Jonathan Swift writes in his *Letter to a very young Lady on her Marriage* that a woman, because she is a woman, will never excel at learning: "after all the pains you may be at, you never can arrive, in point of learning, to the perfection of a school boy'" (qtd. in Kamm 117). Likewise, Samuel Richardson, in a letter to Lady Bradshaigh, writes that a learned woman should not be "an object of fear," but that if a woman ignores her domestic duties in order to learn, then "she is good for nothing" (qtd. in Kamm 118). A woman's feminine duties as a wife take precedence over learning. These opinions were not restricted to men only. Even the Bluestockings, a social group of highly educated women, including Lady Mary Montagu, Elizabeth Carter, and Hester Chapone, deterred other women from pursuing such a course of study. Lady Mary Montagu encouraged her eldest granddaughter to "'conceal whatever learning she [attained] with as much solicitude as she would hide crookedness or lameness'" (qtd. in Kamm 103). Hester Chapone

warned of "the danger of pedantry and presumption in a woman . . . of her exchanging the graces of imagination for the severity and preciseness of a scholar" (196). Unlike Swift and Richardson, both of these women are concerned not with the effects of learning, but with the appearance of learning. Lady Mary does not actively discourage her granddaughter from being educated; instead, she encourages her to hide it. Hester Chapone, too, is concerned with the loss of a woman's "graces." In other words, if a woman appears educated, she becomes less eligible as a marriage partner. Burney seems to join in the concerns of these women, and when she abandons her study of Ancient Greek, she writes: "'I am sure I fag [sic] more for fear of disgrace than for hope of profit. . . . To devote so much time to acquire something I shall always dread to have known, is really unpleasant enough, considering how many things there are that I might employ myself in that would have no such drawback'" (qtd. in Kamm 104). To Burney, the benefits of learning Greek do not outnumber the social consequences associated with such an education.

Burney's early, conservative views on classically educated women are reflected in her first novel, *Evelina*, published in 1778. The novel, which tells the story of the eponymous heroine's quest to be acknowledged by her father, contains one learned woman: Mrs. Selwyn. Older, unmarried, and relentlessly sarcastic, Mrs. Selwyn is unanimously hated by the other characters in the novel, specifically because of her education. She has a fondness for the odes of Horace, and Evelina calls her "our satirical friend" (*Evelina* 284, 290). Burney, in keeping with the views of her contemporaries, portrays Evelina as looking down on Mrs. Selwyn because she has lost the appearance of femininity through her education. Evelina writes to one of her friends, saying,

"[Mrs. Selwyn] is extremely clever; her understanding, indeed, may be called *masculine*, but, unfortunately, her manners deserve the same epithet; for, in studying to acquire the knowledge of the other sex, she has lost all the softness of her own. . . . I have never been personally hurt at her want of gentleness; a virtue which, nevertheless, seems so essential a part of the female character, that I find myself more awkward, and less at ease, with a woman who wants it, than I do with a man" (*Evelina* 269). Evelina highlights the effect of learning on Mrs. Selwyn's feminine appearance; she has lost her "softness" and "gentleness," things that Evelina sees as essential for femininity (*Evelina* 269). This commentary about Mrs. Selwyn, made by the heroine of the story, endorses the concerns women had about learning the classics. Mrs. Selwyn has lost her feminine graces through her education.

However consistent Burney's views are with the condemnation of classically educated women in *Evelina*, she demonstrates a dramatic shift by the time *Camilla* is published in 1796. In fact, she moves from criticizing learned women to critiquing elite male forms of classical education. She uses the classics themselves to accomplish this, as *Camilla* is Burney's novel that is most dependent on the classical tradition. Even the title evokes the female warrior from Virgil's *Aeneid*, and Burney makes a direct reference to this connection, when the narrator describes that "[Camilla] '*skimmed*,' like her celebrated namesake" (*Camilla* 849). This is a reference to Virgil's Camilla, whose father, when she was a baby, fastened her to a spear to send her "whizzing" over the river Amasenus in an effort to escape his town's rebellion (648-67). Camilla, the heroine of Burney's story, also has a sister named Lavinia, another name borrowed from the *Aeneid*. The novel contains

thirty-seven allusions to classical Greek and Roman texts, and a large part of the plot centers on the outcome of a classical education, for both male and female characters.

This abundance of allusions to classical literature aligns with Burney's desire to write a "prose epic." In a letter to her father, Burney describes her work as being written in "*the prose Epic style*" (*Camilla*, Introduction, xiv). Referring to her work as an epic carries with it certain implications, especially when it comes to the portrayal of education. Margaret Doody argues that *Camilla* is a didactic novel, meant to satirize the popular 18th-century conduct book. She writes that "[Burney uses] the simple notion of the didactic story of education as an ironic background or weft against which she wove her tale" (218). Since Burney intended to write an epic, however, education becomes more central than an "ironic background," since Greek and Roman epic poetry was a foundational part of education for centuries (Doody 219). It is impossible to separate the epic from its educational objective. Thomas Maresca, in *Epic to Novel*, writes that epic poetry has traditionally served didactic purposes: "Wisdom, whether conceived as knowledge of philosophy or theology, politics or ethics, has been the core of epic from the Hellenistic allegoresis of Homer forward. Renaissance criticism and practice intensified this element by heavily emphasizing the didactic purpose of epic and fitting it out as a tool to teach man about, and to help him obtain, felicity" (182). The epic has been used to teach young people for generations.

In fact, Burney's choice of the *Aeneid* as her source material, instead of one of Homer's epics, points to her educational purpose. Virgil wrote his epic with a "conscious desire to instruct" the Roman people, a

desire not present in Homer's works (Thornbury 22). Not only was the epic used to instruct people in antiquity, but it is at the center of the 18th-century classical education. Men at university were required to read both the *Aeneid* and the *Iliad* (Clarke 53). Similarly, the 18th-century philosopher Jean-Jacques Rousseau uses the relationship between Telemachus and Mentor, characters from Homer's *Odyssey*, to demonstrate the ideal education in his treatise *Emile, or on Education* (414). And yet, Burney uses the didactic function of the epic to lead not to wisdom, or felicity, but rather to a questioning of an education dependent on classical learning. In *Camilla*, she not only uses the epic for a new didactic purpose, but she questions the utility of the vehicle itself.

Burney accomplishes this questioning through her approach to the prose epic. She writes that her work will "[be] more multifarious in the Characters it brings into action,—but all *wove* into *one*, with a one *Heroine* shining conspicuous through the Group" (*Camilla*, Introduction, xiv). Burney's ideas are consistent with 18th-century thought on the prose epic, best explained by the founder of the genre: Henry Fielding. He argues in the preface to *Joseph Andrews* that if a literary work contains all the aspects of epic, including similar action, characters, and sentiments, and it only lacks poetic metre, then it should be considered a "prose epic" (qtd. in Thornbury 98). And yet, Fielding does not deviate from Aristotle's original understanding of the epic; Fielding maintains that the plot should have a "unity of action" (qtd. in Thornbury 114). Aristotle, in his *Poetics*, explains that "[a] story is not a unity, as some people think it is, simply by being about a single person" (1451a 15-20). In other words, in order for an epic to have unity of action, it is dependent on several characters, instead of

just one, with one overarching movement through the plot. Aristotle uses Homer's *Odyssey* as his example, demonstrating how the different elements and characters in the epic turn "about a single action," the action of Odysseus' return home (1451a 25). Fielding employs this concept in *Joseph Andrews*, loosely connecting the events in the plot, and Burney does likewise in *Camilla*. For Burney, the unity of action centers on the union of the "shining conspicuous" heroine Camilla Tyrold with the hero Edgar Mandlebert, and the "multifarious" characters who are "all *wove* into *one*" play a significant role in this action (*Camilla*, Introduction, xiv).

These diverse characters working toward a unified goal are integral to the novel's designation as a prose epic, but, surprisingly, Burney uses most of these characters to covertly critique an education dependent on the epic: the classical education. The first of these characters is Camilla's uncle, the well-meaning Sir Hugh Tyrold. Burney's portrayal of Sir Hugh mocks the way a classical education is privileged among men. Sir Hugh, having neglected his studies in his youth, comes to believe that he suffers from apathy in his old age due to his lack of knowledge. The narrator comments that "he soon fancied that every earthly misfortune originated in a carelessness of learning . . . even inevitable calamities he attributed to the negligence of his education, and construed every error, and every evil of his life, to his youthful disrespect of Greek and Latin" (*Camilla* 34). Sir Hugh's negligence has not caused a few problems in his life; it has brought about "every error" and "every evil" (*Camilla* 34). Burney deliberately exaggerates the consequences of a man ignoring the classics, and, in doing so, she highlights the absurd level of importance often given to such an education.

Sir Hugh's overestimation of the importance of the classics takes an almost sinister turn when it comes to his niece, Camilla's sister, Eugenia. After suffering an injury from a fall, as well as the ravages of smallpox, Eugenia is left physically disabled and scarred from an early age. Sir Hugh is responsible for these calamities, and he decides to make amends by giving her a classical education through a tutor, Dr. Orkborne. Refusing to let anyone tell Eugenia that she is disfigured, Sir Hugh imagines that the classics will restore to her what she has lost. And she has lost a lot—the people who observe her from a distance describe Eugenia as "[a] little lame thing," "an ugly little bod[y]," and a person with "such a hobble in their gait" (*Camilla* 77). She has lost any chance at physical beauty. She no longer has those graces so essential to a woman. She cannot walk without a limp, and the narrator at one point comments that "Eugenia could only have served as a foil, even to those who had no pretensions to beauty" (*Camilla* 58). Eugenia is not an appealing marital option; she only serves to make other women seem more attractive. And yet, Sir Hugh believes that the classics will make her marriageable. Her knowledge of Greek and Latin will replace her beauty; Homer and Horace will mask her limp. Sir Hugh believes that this education will make Eugenia the ideal wife for his nephew Clermont Lynmere, who is himself studying the classics at Eton College. When Sir Hugh first resolves on educating Eugenia, he says, "'I shall make her a wife after his own heart'" (*Camilla* 48). This implies that Sir Hugh imagines a classical education to have a transformative power. The amount of importance he places on the classics leads him to think that they are capable of making Eugenia marriageable, an idea that proves disastrous for Eugenia.

Burney uses this marriage plot to criticize the attitude toward classically educated women she origi-

nally perpetuated in *Evelina*. When Eugenia, after years of learning, is finally presented to Clermont, he cruelly rejects her, telling his uncle: "'what have I to do with marrying a girl like a boy? That's not my taste, my dear sir, I assure you. Besides, what has a wife to do with the classics? Will they shew her how to order her table? I suppose when I want to eat, I may go to a cook's shop!'" (*Camilla* 592). Again, the concern with a woman learning the classics revolves around femininity; in this case, Eugenia's ability to provide a proper home for Clermont. He argues that she cannot perform her duty as a wife because of her learning, and, to Clermont, she is no longer even a woman: she is a "girl like a boy" (*Camilla* 592). This critique, however similar to Evelina's sentiments about Mrs. Selwyn, is different because of Clermont's character. It is no longer the heroine of the story offering these viewpoints; instead, it is the insipid, vain Clermont who reflects these views. Burney is no longer critiquing an educated woman—she is critiquing the attitude of the male character and his viewpoints.

This critique of Clermont's attitude introduces more of Burney's criticism toward a classical education as a whole. She confronts the perceived benefits of a classical education for men. Historically, during this time period, the universities of Britain were questioning the same issue. At the University of Oxford, English began to replace Latin as the spoken language in class lectures. Students were supplied with an individual tutor, who was to "form not only the mind but the man" (Evans 192). Teachers began to place more emphasis on shaping the character and behavior of their students. Some questioned whether or not a knowledge of the classics truly benefitted a person's morality. The essayist William Hazlitt wrote that "Any one who has passed through the regular gradations of a classical

education, and is not made a fool by it, may consider himself as having had a very narrow escape" (qtd. in Evans 200). Burney's portrayal of classically educated men in her novel explores this concept, as the educated men are either socially inept or morally bankrupt. Clermont, who has been educated at Eton College, certainly mishandles his relationship with Eugenia, and his education has done nothing for his social ability (*Camilla* 44). In fact, he returns from school ready to indulge "both the natural presumption and acquired luxuriance of his character" (*Camilla* 583). The "acquired luxuriance" implies that Clermont has gained this character trait while away at Eton. Likewise, Camilla's brother, Lionel, has developed detrimental habits while at university. His bad behavior comes directly from his "bad scrape at Oxford," for which he requires a large sum of money (*Camilla* 225). With the encouragement of his friends, Lionel writes a threatening letter to his uncle, demanding money. Eventually, Lionel is found out, and he repents of his behavior (*Camilla* 227). And yet, he quickly reverts to his old ways, and exclaims to Camilla that "the deuce of study is, there is no end of it! And it does so little for one! one can go through life so well without it!" (*Camilla* 243). Certainly, Lionel has not benefitted from his classical education, nor does he see the value of it.

These two young men are not the only examples of a failed classical education. Burney often portrays the older, more influential male characters in a similar light. Their failures are even more dangerous because these men serve as mentors to younger characters. The role of the mentor has its roots in classical Greek mythology; in fact, in Homer's *Odyssey*, Mentor is the older man assigned to counsel Odysseus' son Telemachus (Cooper 113). The goddess Athena disguises herself as

Mentor, and she is an essential influence for Telemachus, guiding him through the transition from childhood to manhood, and leading him to success (*Odyssey* 1.273-9). The mentor acts in a similar way as the Oxford tutor: they are meant to "form not only the mind but the man" (Evans 192). Helen Cooper writes that, in the 18th century, "the device of a mentor in a novel was traditionally a means of showing conventionally approved behavior to the heroine" (116). And yet, Burney deviates from both the classical model, as well as the model of her contemporaries, by representing the dangers of an incompetent mentor throughout *Camilla*. Camilla's father, Mr. Tyrold is revered by those around him due to his extensive learning and his kindness. His brother, Sir Hugh, admires him exceedingly, and Mrs. Tyrold obeys his every command. Lionel, when lamenting his own study habits, exclaims, "'My father, you know, is firm as a rock. He minds neither wind nor weather, nor fleerer nor sneerer: but this firmness, look ye, he has kept all to himself; not a whit of it do I inherit; every wind that blows veers me about, and makes me look some new way" (*Camilla* 241). Lionel realizes that his father has gained a moral strength of character from his studies, but that he has not passed on this knowledge to his son. Mr. Tyrold has failed to properly guide Lionel. Mr. Tyrold's deficiencies as a mentor extend even further when it comes to his advice to his daughter Camilla. When he realizes that Camilla is romantically interested in Edgar Mandlebert, but that Edgar's affections are uncertain, he advises Camilla to conceal her feelings. He tells her to "'Carefully, then, beyond all other care, shut up every avenue by which a secret which should die untold can further escape you. Avoid every species of particularity; neither shun nor seek any intercourse apparently'" (*Camilla* 360). This advice, while popular enough

to become part of an actual conduct book, is ultimately disastrous for Camilla (Doody 231). Edgar, based on the advice of his erring mentor, is waiting for a sign of Camilla's affection. She withholds that sign based on her mentor's guidance. The results are devastating for both characters, and the damage done by these inept mentors is only resolved five hundred and thirty-seven pages later, in the closing of the novel.

Perhaps the most damage done by a mentor in *Camilla* is perpetrated by the man most associated with classical education: the learned Dr. Orkborne. A highly educated scholar, Dr. Orkborne is obsessed with studying the classics. When first introduced as Sir Hugh's tutor, the narrator comments that "Application, operating upon a retentive memory, had enabled [Dr. Orkborne] to lay by the most ample hoards of erudition; but these, though they rendered him respectable amongst the learned, proved nearly nugatory in his progress through the world, from a total want of skill and penetration to know how or where they might turn to any account" (*Camilla* 36). In a reversal of the concerns about learned women, who could lose the appearance of femininity through education, Burney presents Dr. Orkborne as appearing "respectable," while lacking any personal graces (*Camilla* 36). His classical education has prevented him from developing any social skills. In fact, he barely has any control over his own emotions. After a maid mistakenly discards a scrap of paper from Dr. Orkborne's desk, he loses his temper, and shouts, "'I wish you had been all of you annihilated ere ever you had entered my room! I had rather have lost my ears than that manuscript! I wish with all my heart you had been at the bottom of the sea, every one of you, before you had touched it!'" (*Camilla* 210). His passionate outburst is disturbing to the family, and Sir Hugh muses

upon Dr. Orkborne's education, saying "'I must fairly own I don't see the great superiorness of learning, if it can't keep a man's temper out of passion'" (*Camilla* 212). The classics have not helped Dr. Orkborne learn to reign in his passions, and Sir Hugh, who prizes the classics more than anyone else in the novel, begins to question the value of a classical education. When he fails to educate Sir Hugh, Dr. Orkborne turns his attention to Eugenia, which produces even more dire consequences.

Burney uses the disastrous relationship between Eugenia and Dr. Orkborne to further highlight the dangers of an education solely dependent on the classics. Dr. Orkborne is Eugenia's tutor from a young age, and is clearly incapable of teaching her any social graces, as he does not understand them himself. The narrator describes Eugenia's artlessness: "Early absorbed in the study of literature and languages, under the direction of a preceptor who had never mingled with the world, her capacity had been occupied in constant work for her memory; but her judgement and penetration had been wholly unexercised" (271). In other words, as a direct result of Dr. Orkborne's ineffective mentoring, Eugenia has no ability to function in society. She knows her Latin grammar, but she cannot make judgements or decisions for herself. Eugenia is determined to follow her mentor's model, and she becomes so invested in her studies that her brother Lionel begins to call her "little Greek and Latin" instead of Eugenia (*Camilla* 500). While this nickname highlights Eugenia's absorption with the classics, it also echoes concerns about the classical education first voiced by the philosopher John Locke. Locke, in *Some Thoughts Concerning Education*, expresses his anxieties about the mentor-mentee relationship, saying that the mentor must value virtuous

behavior over the pedantry of the classics. He goes on to address parents directly, writing, "you must confess that you have a strange value for words, when preferring the languages of the ancient Greeks and Romans to that which made them such brave men, you think it worthwhile to hazard your son's innocence and virtue for a little Greek and Latin" (Locke 46). For Locke, innocence and virtue, the admirable qualities of the Greeks and Romans, are more valuable than simply learning the languages they spoke. Burney seems to support Locke's viewpoint when Lionel refers to Eugenia as "little Greek and Latin," since Eugenia's limited knowledge endangers her innocence and virtue (*Camilla* 500).

Burney stresses the danger of this "strange value for words" even more when Dr. Orkborne's obsession with the classics directly places Eugenia in physical danger (Locke 46). At one point he becomes so absorbed with "a verse in one of Virgil's Eclogues," that he completely abandons Eugenia in a field with an angry bull (*Camilla* 131). He also fails to protect the women of the household when a fight breaks out, choosing rather to meditate on "the pugilistic games of old . . . the games of antiquity" (*Camilla* 668). More importantly, Dr. Orkborne is a contributing factor to Eugenia's eventual violent kidnapping by the fortune hunter Alphonso Bellamy. When Bellamy first writes to Eugenia speciously expressing his love, Eugenia has the opportunity to completely rebuff him. She writes a letter in response, and Sir Hugh insists that her mentor read it over for her. The narrator describes that "Dr. Orkborne, being called upon, slightly glanced his eye over the letter, but made no emendation, saying: 'I believe it will do very sufficiently; but I have only concerned myself with the progress of Miss Eugenia in the

Greek and Latin languages; any body can teach her English'" (122). He does not give the content of the letter much consideration, only "slightly" glancing at it. Dr. Orkborne is more concerned with making a snobbish comment implying that English is inferior to Greek and Latin. In doing so, he completely ignores the fact that the letter is too kind—it is not strongly worded enough to dissuade Bellamy.

This lack of proper mentoring by Dr. Orkborne leads to Eugenia's downfall when she is finally kidnapped by the greedy Bellamy. She cannot fathom that anyone would have ill-intentions, and when she is first approached by Bellamy, the narrator comments, "Having read no novels, [Eugenia's] imagination had never been awakened to scenes of this kind; and what she had gathered upon such subjects in the poetry and history she had studied with Dr. Orkborne, had only impressed her fancy in proportion as love bore the character of heroism, and the lover that of an hero. Though highly therefore romantic, her romance was not the common adoption of the circulating library; it was simply that of elevated sentiments, formed by animated credulity playing upon youthful inexperience" (*Camilla* 315). Eugenia cannot see through Bellamy's flowery, romantic speech. She imagines that, because he is expressing the "elevated sentiments" she understands from the classics, he must actually love her. What would be obvious to any patron of the circulating library is incomprehensible to Eugenia. As a result, she is violently kidnapped and forced to marry Bellamy. Her classical studies have not prepared her for real life—she cannot recognize Bellamy's scheme. A classical education has failed Dr. Orkborne, and he, in turn, has failed Eugenia. This moment in the novel captures both of these failures, and at the same time, endorses the novel as a use-

ful learning tool. Burney states that, had Eugenia read novels, she would have been able to realize Bellamy's treachery.

This moment in *Camilla* underscores Burney's changing beliefs about classical education, for both men and women, as well as her beliefs about the role of the novel. In *Evelina*, Burney begins her novel with an apology for having written a novel. She endorses the beliefs of her contemporaries about women and classical education, and portrays Mrs. Selwyn in a negative light. Burney demonstrates more confidence as an author in *Camilla*, and she uses the classical tradition to question the benefits of a classical education. In depicting the classics as ultimately failing both male and female characters, Burney presents the reader with a new mode of effective education for the 18th century: the novel.

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"Likes" for Self-Love? The Effects of Social Media on Self-Perception

ELIZABETH GALLINARI

Abstract

Social comparison theory describes how people self-evaluate themselves based on social comparisons to others. The current research investigated whether receiving more "likes" on social media than someone else will cause women to feel better about themselves, whereas receiving fewer "likes" will cause them to feel worse. Previous research has shown that social comparisons using social media, specifically Facebook, does affect levels of self-worth. Research regarding Instagram is limited, which is why it is the focus of this current research. The study included 124 participants, all of whom were women aged 18 to 25. The study consisted of two conditions featuring a manipulated Instagram post. After exposure to the manipulated post, the participants were asked to view a recent post on their Instagram and note the number of "likes," which was intended to create a social comparison. The participants completed the State Self-Esteem scale to measure feelings of self-esteem. The results showed that comparing "likes" on Instagram did not significantly affect levels of self-esteem. There was a small, positive correlational relationship found between the participants' own number of "likes" and their levels of appearance self-esteem.

Introduction

Humans are social creatures by nature. As social creatures, comparison to others is inevitable. People use social comparisons to validate their own lives, sometimes unknowingly. Comparing the self with others is a pervasive social phenomenon, as stated by Suls, Martin, and Wheeler (2002), and is very prevalent in society. Social comparison theory encompasses the idea that individuals have a drive to gain accurate self-evaluations about themselves through the comparison to similar others. With the emergence of so many different types of social media, platforms for social comparison are continuing to expand. Instead of just being able to compare oneself to a person standing in the same room, there are now many social media outlets to achieve such comparison with millions of people.

Social comparison can affect individuals in varying ways. The downward comparison theory, sometimes known as the self-enhancement motive, claims comparisons to someone who is less fortunate will lead to a boost in well-being, whereas an upward comparison to those better off can reduce well-being (Suls et al., 2002). The self-improvement motive supports the opposing idea; if one believes change is possible, then an upward comparison can provide inspiration and a downward comparison can cause dismay. The main focus of this current study is the downward comparison theory. Based on this concept, as well as past evidence, it is predicted that getting more "likes" than someone

else will cause positive feelings of self-worth, while getting fewer "likes" will cause negative feelings of self-worth. A "like" occurs when an individual communicates their approval of a post on social media, usually via a thumbs up or a heart icon. There have been quite a few studies conducted regarding the relationship between social media and social comparison theory that support this prediction. Facebook is a perfect environment for social comparison. Vogel, Roberts, and Eckles (2014) revealed that viewing social media profiles with positive content was associated with poorer state self-esteem. The evidence provided showed that these social comparisons were involved in the relationship between Facebook use and well-being.

Individual differences can also affect the impact of social media interactions. People who use Facebook very often tend to have lower trait self-esteem (Vogel et al., 2014). De Vries and Kühne (2015) examined how individual levels of happiness stimulate the levels of social comparison. People who are already unhappy seem to experience more negative social comparison and, in turn, experience more negative self-perception. An individual's level of social comparison orientation, the tendency to compare oneself to others, can impact how Facebook affects their self-perception. Research done by Vogel et al. (2015) showed that participants high in social comparison orientation seek out social comparisons on social media.

Facebook, as well as other social media platforms, has become common in everyday life, and self-perception can be influenced by all of the different types of social connections possible. Previous research has shown that the number of friends on Facebook can also affect an individual's levels of perceived social support. Research completed by Kim and Lee (2011) revealed that the number of Facebook friends had a positive association with subjective well-being as well as perceived social support. Results of other studies conducted by Burrow and Rainone (2017) have suggested that receiving a greater number of "likes" reliably predicted greater self-esteem. The two researchers also based their examinations on the sociometer theory, which supports the idea that self-esteem is calibrated based on inclusion or rejection within a social environment. Facebook's like button can help fuel this sense of inclusion or rejection, since others can choose to like or ignore a post.

For the present study, the examination focused on the idea that receiving more "likes" than someone else will cause women to feel better about themselves, while receiving fewer "likes" than someone else will cause women to feel worse about themselves. Based on previous research, Facebook interaction has led to feelings of low self-worth and low self-perception (de Vries & Kühne, 2015). In order to test the hypothesis, a research study involving female participants who regularly use the social media platform, Instagram, was conducted. The participants were split into two control groups and each group shown a manipulated Instagram photo post; one featuring many "likes" and one with a few "likes". The participants were then asked some questions regarding the manipulated photo. After exposure to the manipulated photo, the participants were asked to view their own most recent photo on Instagram and record the number of "likes," as well as answer some questions. Following this observation, participants completed the State Self-Esteem Scale to assess self-esteem levels, as well as demographic information.

Method

Participants

One hundred and sixty participants were initially recruited through convenience sampling through the social networking site Facebook, as well as email requests. All participants were females between the ages of 18 and 25 with an Instagram account. Four were removed because they did not fit the age criteria. Twenty-eight were removed because they did not have a recent "selfie" post in Instagram, which was necessary for comparison reasons. A selfie is a photo taken by oneself, usually through the front facing camera on a smart phone. Three more participants were removed because they incorrectly answered the number of "likes" question regarding the manipulated post and one more was removed because she did not answer the question at all. The total participant count for this study was 124 females. The majority of participants, 87.9%, reported their ethnicity as Caucasian, 3.2% as African-American, 4% as Hispanic, and 1.6% as Asian. The remaining 3.2% specified as other ethnicities.

Materials

To create a social comparison environment, the participants were randomly assigned to one of two conditions: High "Likes" and Low "Likes." Both groups were presented with a mock Instagram selfie post. The posts were identical for both groups with the exception of the number of "likes". The High "Likes" photo had 153 "likes," and the Low "Likes" photo had seven "likes." These numbers were chosen after careful consideration and deemed to be more than average and less than average, thus intending to create an environment for social comparison.

Measures

To measure the effects of social comparison on participant's self-perception, participants were surveyed after the manipulated Instagram post. Self-esteem was measured using the State Self-Esteem Scale, a 20-item scale that measures self-worth by measuring three components of self-esteem: performance self-esteem, social self-esteem, and appearance self-esteem (Heatherton & Polivy, 1991). Opinions of self-worth were measured using 5-point scale format ranging from 1 (not at all) to 5 (extremely) on statements such as "I feel confident in my abilities," "I feel displeased with myself" and "I feel concerned about the impression I am making."

Procedure

Participants clicked the link for an Instagram Survey and were directed to an external website, which presented them with an explanation of informed consent. After the participants gave their consent, the study began with exposure to the manipulated photo described above. Participants were randomly assigned to one of the two conditions. After viewing the manipulated Instagram post, the participants answered a series of questions, such as the number of "likes" and the background of the photo. Participants were then asked to view their most recent selfie post on Instagram and asked to answer another set of questions regarding their own post. After viewing both the manipulated post and their own post, the participants completed the State Self-Esteem Scale to assess their current state of self-perception. The participants finished with a few demographic questions, before reading a debriefing statement which thanked them for their participation and concluded the study.

Results

In order to test whether comparing "likes" on Instagram affected women's self-esteem, an independent-sample *t*-test was conducted. The analysis revealed that comparing "likes" on Instagram did not significantly affect social self-esteem (Low "Likes": $M = 3.61$, $SD = .80$; High "Likes": $M = 3.39$, $SD = .92$), $t(122) = 1.41$, $p =.16$. Another independent-sample *t*-test was performed and the analysis revealed that comparing "likes" on Instagram did not significantly affect performance self-esteem (Low "Likes": $M = 3.67$, $SD = .70$; High "Likes": $M = 3.74$, $SD = .74$) $t(122) = -.51$, $p =.61$. A third independent-sample *t*-test was performed and the analysis revealed that comparing "likes" on Instagram did not significantly affect appearance self-esteem (Low "Likes": $M = 3.03$, $SD= .66$; High "Likes": $M = 3.13$, $SD = .94$), $t(122) = -.65$, $p =.51$.

In order to test whether the number of "likes" on their own post was linked to self-esteem levels, a Pearson's correlation test was conducted. The analysis revealed a small, positive correlational relationship between number of "likes" and appearance self-esteem, $r(122) = .22$, $p = .01$.

Discussion

The current study focused on how social comparison using social media can affect self-esteem and self-perception levels. The hypothesis, which was that receiving more "likes" than someone else will cause women to feel better about themselves, while receiving fewer "likes" will cause women to feel worse, was not supported. The results from the State Self-Esteem scale indicate the number of "likes" on the manipulated Instagram post did not significantly alter levels of social,

performance, or appearance self-esteem. The current study did find a small, positive correlation between the number of "likes" on the participants' own posts and their level of appearance self-esteem. This correlational data shows there is a small, positive relationship between how many "likes" one receives on their own posts and their feelings of self-worth, meaning the participants who received more "likes" on their own photo reported higher feelings of self-worth. It is unknown whether the cause might be social comparison to the number of "likes" on others' posts to their own.

The findings from the current study revealed that comparing "likes" on Instagram to someone else does not sway levels of self-esteem. Burrow and Rainone (2017) suggested that the greater the number of "likes," the greater level of self-worth and self-esteem, which is similar to the correlational findings from the current study. A good portion of the previous research focused on the effects of social comparison using Facebook, which includes other forms of online social interaction other than just the "like" option. The different choices, such as "love", "sad", "angry" and "wow", may have an effect on self-perception, since there are more features available. Further research should be conducted regarding Instagram and the effect it has on self-worth. There is the possibility that "likes" are not the main cause for the fluctuation in self-esteem, and there could be another source of social media interaction that is responsible.

There were a few limitations found for the current study. One major limitation in the current study could be that the number of "likes" for the High "Likes" post was not high enough. About twenty participants stated their own posts had more than 153 "likes", which was

the manipulated number for the High "Likes" post. The manipulation in the High "Likes" condition may have been too normal and did not provide enough of a difference for an upward comparison. Another limitation may be that the manipulated photo was of a stranger and the participants did not consider the female in the photo similar enough to create a social comparison. Similarity plays a sizable part in social comparison because people tend to compare themselves to those whom they believe most resemble themselves (Suls et al., 2002). A third limitation could be the use of a self-report survey measure. Participants may not be truthful when self-reporting about themselves, which could alter the accuracy of the data. Lastly, another limitation could be the possibility that the questions asked were too subtle and did not create enough of a comparison environment for the participant to have an upward or downward comparison reaction.

Future research should broaden the demographic group to include those slightly older and younger, as well as from different areas. Demographically, the sampling method for this current study was quite shallow because of the short time span available. A larger, more representative sample may alter the findings in further research. Future research could also focus on how social media affects those who have lower self-esteem or suffer from mood disorders that may affect their self-perception. Individual differences may affect how social media interactions impact self-perception. De Vries and Kühne (2015) looked at how individual levels of happiness can influence social comparison, so it would be very interesting to see how that may affect social comparison through social media outlets.

Overall, this study did not support the hypothesis which claimed that women who receive more "likes" than someone else will experience feelings of higher self-esteem, whereas those who receive fewer "likes" experience feelings of lowered self-esteem. Suls, Martin, and Wheeler (2002) declared that comparing the self with others is a widespread social phenomenon and is becoming more prevalent in society today through the use of social media. It is plausible that the number of "likes" on a photo or post may not be what creates social comparison, but possibly another aspect of social media that has yet to be examined further.

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Tension Between Reform and Orthodox Judaism in "Eli, the Fanatic"

KATIE GRANT

The relationship between fundamentalist Jewish sects and progressive Jewish sects is constantly evolving and is greatly influenced by location and historical context. The denominations differ in many critical ways including their levels of observance of Jewish traditions and holidays, their conceptions of Jewish religious literature such as The Torah and The Talmud, and their attitudes towards social movements. The latter is one difference that illustrates the most dramatic schism between the sects: the amount that the varying groups assimilate into modern cultural, social, and political practices. Philip Roth's story, "Eli, The Fanatic," illustrates how fundamentalist sects of Judaism and their rigid, inflexible beliefs and practices were directly at odds with adaptable progressive sects in post-Holocaust America. The story revolves around a community of progressive (Reform) Jews and its attempt to grapple with displaced fundamentalist (Orthodox) Jews from Germany. The story sheds light on the reasons why two sects of the same religion during this time period were divided, and not united.

Irreconcilable differences between strict, fundamentalist Jews and more flexible, progressive Jews

have caused interdenominational tension throughout history, but "Eli, The Fanatic" captures the specific struggles of the post-Holocaust era. The story presents devastating insight into the obstacles that Orthodox Jews from Germany faced upon immigrating to America to escape persecution in the 1930s and 1940s, as well as the struggles that Reform sects faced upon accepting the exiles into their communities. The story exemplifies the challenges that Orthodox and Reform sects endure when they live in close proximity, and the social and political forces that can prevent the sects from living together amicably.

The story is set in the fictional town of Woodenton, New York, which is portrayed as a sheltered and comfortable community of progressive Jews and non-Jews (Gentiles). The group of progressive Jews who reside in the town, referred to simply as the Woodenton Jews, have managed to successfully blend in with the Gentiles until the balance is upset by the arrival of Orthodox Jews from Europe. Leo Tzuref is the leader of the Orthodox refugees and he immediately establishes a Yeshiva—a school for the displaced children to study sacred Jewish texts—on the outskirts of town. The presence of the Yeshiva provokes the progressive Jews, and they take immediate action against the fundamentalist Jews, pleading with them to shut down the institution and quietly assimilate into the existing customs of the community. Roth does not offer an explicit motive for the Reform Jews' behavior and discrimination against the incoming Orthodox Jews, but a careful psychological and historical reading of the text produces likely explanations.

"Eli, The Fanatic" depicts the pressures felt by both Orthodox and Reform Jews to elevate and differentiate themselves from the opposing Jewish sect

in order to preserve their own values, lifestyles, and socioeconomic positions. The sects often attempt to develop a hierarchical system, out of fear that if the sects exist on the same plane in society the Gentile public will view all Jewish people as a united group. This legitimate fear that Gentiles might group all Jewish denominations under one umbrella category has different repercussions for Orthodox Jews than it has for Reform Jews. One crucial reason that Reform Jews do not want to be associated with Orthodox Jews is because they do not want to risk facing the persecution their Orthodox counterparts have suffered throughout history. The Holocaust impacted all sects of Judaism but Orthodox Jews were intensely targeted, which plays a major role in the backstory of "Eli, The Fanatic."

Roth sets the story in 1948, only three years after the end of the Holocaust, at a time when the horrifying genocide was fresh in everyone's memories. In these post-Holocaust years, the consequences of being Jewish were severe and tangible, and the Reform Jews in "Eli, The Fanatic" are undeniably aware of this. The reformed Woodenton Jews are incredibly fearful that the presence of Orthodox Jews in their community will bring attention to their own Jewishness and possibly lead to another genocide. Although this fear is not voiced outright by the Woodenton Jews, there are many moments when their post-Holocaust anxiety shows. During Eli's conversation with his fellow townsman, Ted-Heller, Eli half-heartedly brings up the solution of converting the Orthodox Jews. Ted objects, stating, "The way things are now are fine—like human beings. There's going to be no pogroms in Woodenton. Right? 'Cause there's no fanatics, no crazy people" (Roth 277). Ted's response reveals his fear that the presence of the Orthodox sect will spark a genocide of Jews much closer to his home than Europe. He also believes that the lack of "fanatics" in the Woodenton community is the main factor that has kept the Reform Jews safe. His reply also gives away his tremendous insecurity about his safety. He states, "There's going to be no pogroms in Woodenton," but then seeks affirmation of this statement from Eli.

Another instance in which the Reform Jews blame the Orthodox Jews for bringing the Holocaust on themselves is Eli's statement that if the fundamentalists had "given up some of their more extreme practices," they could have avoided the genocide (262). Eli adds that if the Orthodox Jews had toned down their religious devotion and blended in with the Gentiles of Europe, the "persecution of the Jewish people, of which you [Tzuref] and those 18 children have been victims, could not have been carried out with such success" (262). The Reform Jews equate radical Jewish practices and beliefs with harsher persecution, and, therefore, fear how the newly-arrived Orthodoxy in their community could impact their own reception from the Gentiles. The Woodenton Jews have sacrificed aspects of their religion and ethnicity to please the greater Gentile population, which has helped them avoid substantial persecution; they do not want their sacrifices to count for nothing if the Gentiles equate them with the newcomers. The Woodenton Jews are living in relative comfort, security, and protection from anti-Semitism, and they are physically and emotionally distanced from the suffering of European Jews. They are able to fear the consequences of being associated with European Orthodox Jews from their vantage point of comparably cushioned safety.

The Woodenton Jew's separation and distance from the suffering experienced by Holocaust victims

also instills them with communal survivors' guilt. The progressive Jews recognize that their liberal ideologies and practices have helped them avoid persecution, but they also empathize with the plight of the victimized Jews. The guilt felt by the reformed Woodenton Jews leads them to push the Orthodox sufferers farther away, instead of embracing and comforting them. James Duban's important research on the effect of trans-Atlantic survivors' guilt in "Eli, The Fanatic" emphasizes the role of guilt in the actions and attitudes of the Woodenton Jews. In his piece "Arthur Koestler and Meyer Levin: The Trivial, The Tragic, and Rationalization Post Factum in Roth's 'Eli, The Fanatic'," Duban asserts that the Orthodox Jews in Roth's story are the physical reminder to the Reform Jews that while *they* have escaped persecution and the Holocaust unscathed, their fellow Jews have not been so lucky at all and are in dire need of support.

With the Orthodox men and children living amongst them, the Woodenton Jews can no longer escape or run from the violence committed against members of their own religion. They cannot cope with the persecution by pretending it does not exist or sweep racial injustice under the rug. Eli accuses his wife of dealing with their marital and social problems in this manner, complaining that she "wasn't able to face the matter." He adds that "all she wanted were love and order in her private life… Let the world bat its brains out—in Woodenton there should be peace" (Roth 261). Miriam's desire to ignore issues by secluding herself in an unrealistic, sheltered world, is symbolic of the way the Reform Jews in Woodenton deal with the exiled Orthodox Jews.

Duban claims that the Woodenton Jews are desperate to rid their community of the Orthodox Jews

"for reasons beyond wishing to live harmoniously with their Protestant neighbors, to assuage the subconscious shame for their own survival and prosperity when confronted with corporeal evidence of a horror that has until then remained at convenient continental remove" (174). He explains that there are also connections and consistencies between the British White Paper Policy of 1939, which limited the number of Jewish immigrants allowed to enter Palestine, and the actions of the Woodenton Jews in "Eli, The Fanatic." The White Paper Policy was a response to Arab concerns about the increasing number of Jewish immigrants in Palestine and greatly affected Jewish displaced persons after the Holocaust (172). The White Paper policy discriminated against Jews, using legalism to hide racial prejudice; Duban argues that the Woodenton Jews similarly depend on the function of the law to further their own discrimination against the displaced Jewish immigrants (172). Hiding behind the law allows the Woodenton Reform Jews to push their own agenda of ridding their assimilated community of fundamentalist Jews without appearing prejudiced.

Duban's article draws from Arthur Koestler's book *Promise and Fulfilment—Palestine 1917-1949,* and he is particularly interested in Koestler's spin on psychosomatic legalism. Psychosomatic is defined in the Oxford English Dictionary as "Of, relating to, or designating a physical disorder caused or aggravated by psychological factors" ("psychosomatic"). Koestler, however, views the White Paper Policy as psychosomatic because it was formulated primarily out of British racism against Jews. Koestler "appropriates the term to trace debilitating foreign policy to either bias or overt bigotry" (Duban 176). Duban delves into the connections between the psychosomatic function of the

Policy and the actions of the Woodenton Jews, also taking Meyer Levin's autobiography *In Search* into account:

> Koestler, for instance, maintains that White Paper protocol was a "pseudo-Machiavellian policy, concocted from emotional prejudice" (127). In *In Search* Levin appeals to concur about British opposition to Zionism: "At the bottom of the equation there was always a gap. It could only be filled by the old, old factor: there were too many of them who didn't like Jews" (470). Roth, in turn, seems similarly minded about the psychosomatic foundations of British foreign policy. (Duban 181)

The Woodenton Jews attempt to use trivial laws to banish the Holocaust survivors from their community, using legalism as a cover-up for racism. The White Paper Policy and the actions of the Woodenton Jews are also alike in the way that the Policy had devastating consequences for large populations of persecuted Jews, and the actions of the Woodenton Jews would have had the same effect on the Orthodox Jews had Eli not transformed in the end of the story.

Overwhelming survivor's guilt or not, the Woodenton Jews do not empathize with the suffering of the European Jews enough to wish to be associated with them by the Gentile public. Their fear of the persecution associated with Orthodox sects is not the only reason that Reform Jews in "Eli, The Fanatic" do not want to be lumped with them in Gentile perception. The Reform Jews also fear the loss of their recently achieved social status in their affluent New York community. Eli mentions to Tzuref in a letter that "it is only since the war [World War II] that Jews have been able to buy property here, and for Jews to live beside each other in amity" (Roth 262). The Reform Jews revel in their new-found property rights alongside well-to-do Gentiles, and are terrified that the extreme religious beliefs and practices of the displaced Orthodox Jews will reverse their recent political and social gains. Hana Wirth-Nesher states that "as Woodenton has only recently admitted Jews to its manicured lawns and split-level homes, the American-born Jews fear that the presence of caftaned refugees will jeopardize their hard-won affluence and grudging acceptance by Protestant neighbors" (104). The Woodenton Jews' pride in their property ownership relates to their pride in living the ideal suburban lifestyle.

The Orthodox Jews represent urban dangers to the Reform Jews which is evident in Artie Berg's comment to Eli: "Eli, in Woodenton, a Yeshivah! If I want to live in Brownsville, Eli, I'll live in Brownsville" (Roth 255). Brownsville is one of the most dangerous neighborhoods in Brooklyn, New York, so Artie's reference to Brownsville implies that he equates the fundamentalist, radical sects of Judaism with danger and inner-city life. Pre-transformation Eli also adopts this stereotype, writing to Tzuref that "Woodenton is a progressive suburban community whose members, both Jewish and Gentile, are anxious that their families live in comfort, beauty, and serenity" (261). Comfort, beauty, and serenity are qualities that both Artie and Eli associate with rural, or suburban lifestyles; both men insinuate that the Orthodox Jews will endanger these elements of their current life with their supposed urban ties.

Suburban lifestyles are also often synonymous with upper class and affluence, and it is obvious in "Eli, The Fanatic" that the Woodenton Jews recognize the

class difference between themselves and the displaced fundamentalist Jews. Instead of showing compassion for the struggles that the European Jews endured and recognizing the causes of their poverty, the Woodenton Jews look down with condescension upon the destitute Orthodox Jews. The Woodenton townsmen complain to Eli that the displaced Jews do not pay taxes and are therefore a burden to the society (Roth 249). Throughout the story, the darkness of the residence of the Orthodox Jews is contrasted with the bright lights of the Reform Jews' residences, highlighting the lack of electricity and other privileges of the displaced Jews. At one point during his second visit to Tzuref, Eli asks Tzuref for a little light in the room. Tzuref then "lit what tallow was left in the holders," before Eli wonders if Tzuref and his family cannot afford electricity (265). Whether the Orthodox Jews prefer to live without modern utilities or cannot afford them does not seem to bother any of the Woodenton Jews besides Eli; the other Reform Jews judge their outdated lifestyle without needing to make any distinction between preference and necessity. The Woodenton Jews constantly refer to the time period and the importance of keeping up with 20th-century advances, without worrying whether the Orthodox Jews cannot afford a modern, 20th-century lifestyle. The townspeople consider their antiquated lifestyle a purposeful affront to the times, and they want it to be perfectly clear to the Gentiles that they are themselves progressive American citizens. In an article about the evolution of American Judaism, scholar David Gerber asserts that Reform Jews often "remain loyal to the understanding that the practice of faith must remain responsive to progressive changes in values and practices in the larger American community" (77). The Woodenton Jews fit right into this assessment, because

they consider it possible to mix Judaism with progressive societal values and traditions.

Reform Jews also do not want to be associated with what they believe to be the radical ideologies of the Orthodox Jews. Orthodox Jews strictly observe the laws of The Torah, believing the Torah to have been revealed directly to Moses by God. They also heavily emphasize the rabbinical commentaries within The Talmud ("Traditional"). Reform Jews, on the other hand, advocate for progressive revelation and are not bound as strictly to the exact doctrine of conduct set forth in the Torah (Meyer). In an entry on Reform Judaism from *World Religions*, Michael Meyer states, "Reform Jews hold that revelation is ongoing with the progress of human knowledge and religious sensitivity. The freedom of the individual Jew to be selective, to draw from Jewish tradition those elements of belief and practice that he or she finds the most personally meaningful, is far greater among Reform Jews than among either Orthodox or Conservative." This adaptability helps the progressive Jews in "Eli, The Fanatic" blend in and live peacefully amongst the Gentiles.

Reform Jews also do not adhere to Orthodox standards such as the strict dress code, the gender regulations for relationships between males and females, or the multilingual requirements of fundamentalist studies ("Traditional"). In fact, many Reform Jews may view Orthodox Jews as radical extremists in the same way that many Gentiles do. This is illustrated in "Eli, The Fanatic" when Ted Heller tells Eli that he is growing skeptical of the "hocus-pocus abracadabra stuff," and accuses the Orthodox Jews of having "all these superstitions" (Roth 277). He criticizes the Orthodox sect for preaching against science; he references the Old Testament story of The Binding of Isaac, or Genesis 22, to

prove the Orthodox Jews capable of violence and sacrificial rituals.

While there are many reasons that Reform sects do not want to be associated or grouped together with Orthodox sects, including their fear of persecution, their hard-earned social standing, and their more liberal ideologies, there are also reasons why Orthodox sects do not want to be united in public perception with Reform sects. Orthodox Jews feel that Reform Jews are too concerned with assimilating with Gentiles and are not true to the foundational principles of Judaism. David Gerber states that while Reform Jews "have invited the world in, sought to learn new ways from its example, and in the process become Americanized, Orthodox Jews have proceeded tentatively outward into the world, struggling as their primary obligation to remain true to fundamentalist and traditionalist conceptions of Jewish law and custom" (78). In "Eli, The Fanatic," Ted Heller perfectly represents how some Reform Jews have distanced themselves from religious aspects of Judaism. He confesses to Eli, "Look, I don't even know about this Sunday school business. Sundays I drive my oldest kid all the way to Scarsdale to learn Bible stories… And you know what she comes up with? This Abraham in the Bible was going to kill his own *kid* for a sacrifice. She gets nightmares from it, for God's sake! You call that a religion?" (Roth 277). His exclamation shows his removal from fundamentalist aspects of Judaism on many levels.

Unless Roth embellished this passage to make the implications of Ted's allusion more clear, any person of Jewish faith, regardless of sect, is likely to be familiar with Genesis 22. The fact that Ted refers to Abraham, the patriarchal father of Judaism, as "this Abraham in the Bible," and also *how* he explains the events of the story to Eli, shows just how removed he is from his own religion. Orthodox Jews would undoubtedly be appalled at Ted Heller's lack of knowledge and respect for Abraham's predicament, and refuse to be associated with Jews with so little understanding of basic tenants of Judaism. In discussing competing sects of Judaism in America, David Gerber argues that many Orthodox Jews consider Reform Jews "incomprehensible, heretical, and no longer real Jews," based on the Reform Movement's emphasis on fitting Judaism into the modern, American lifestyle with disregard for long-standing Jewish traditions (75). Hana Wirth-Nesher adds to the conversation with her comment: "Tzuref and his crew are simply too Jewish when viewed through the eyes of the Gentiles whom they [the Woodenton Jews] are fanatic about pleasing, and appeasing. For them, religiously observant Jews are the 'other' " (111). Ted Heller and his commentary perfectly exemplify this progressive perspective.

Along with the religious reasons that cause many Orthodox Jews to disassociate themselves from Reform sects, there are also ethical reasons. Literary scholar Aimee Pozorski focuses on Ted Heller's allusion to the Akedah story in Genesis, and reads "Eli, The Fanatic" through a biblical lens. In her article "Akedah, The Holocaust, and the Limits of the Law in Roth's "'Eli, the Fanatic'," Pozorski asserts that the dilemma that Abraham faces, when he is forced to choose between obeying God's command and obeying his paternal instincts, is similar to the predicament Eli faces in Roth's story. Abraham ultimately chooses to follow God's command to sacrifice his son Isaac instead of following his heart, and he is rewarded for this decision at the last minute when God stops him from committing filicide. Pozorski argues that Eli is forced to choose

between following the laws of his community and following his moral compass. She emphasizes the way in which the laws of Woodenton are at odds with moral and ethical responsibilities to fellow humans, especially children. She states, "[Eli] has been called to defend the community members who want to see the children go away, but his visceral response suggests that he should be on the other side of the law protecting the children from the community's laws rather than protecting the community from the children who have been displaced in their lives already" (Pozorski). This internal debate leads to Eli's dramatic transformation and embrace of Orthodoxy at the conclusion of the story.

If the Akedah story is used as a lens through which to view "Eli, The Fanatic," then it becomes obvious that Abraham and Eli come to different conclusions about which decision they feel comfortable making. Abraham decides to side with the law of God, while Eli eventually decides to side with his heart. Eli's divergence from the framework of The Binding of Isaac portrays Roth's own ideas about the inability of the law to protect persecuted Jews (Pozorski). Pozorski claims that "Eli, The Fanatic" shows that the law is "merely a performance of language. It is not essentially true or good. It can dispossess as easily as it can empower" (4). The implications of Eli's choice to side with his morals over the law are even more profound considering Eli's profession as a lawyer: he finally realizes that laws are mostly arbitrary and do not always benefit, or take into consideration, underprivileged minorities.

There are other instances in "Eli, The Fanatic" when the Orthodox Jews show their disgust with the laws that the Reform Jews insist on enforcing. During Eli's first visit to the residence of the displaced Jews, he has a riddled conversation with Tzuref, fraught with

multiple meanings and complex connotations. When Eli justifies his use of the law to displace the Holocaust survivors, he states that he did not create the laws and that they are there to protect the community. Tzuref replies, "The law is the law," by which he means that the Jewish laws set in place in The Torah are the only true laws. Misinterpreting, Eli answers, "Exactly!" (Roth 251). This breakdown in communication stems from the different values placed on religious law by the Orthodox and Reform sects of Judaism. The Reform Jews honor man-made laws, while Orthodox Jews consider Mosaic laws (the laws set in place by Moses in the Old Testament) to be the only real code of conduct.

In a second conversation about the law, Tzuref gets so frustrated with Eli that he exclaims, "Stop with the law! You have the word suffer. Then try it. It's a little thing" (Roth 265). Here, Tzuref highlights the disconnect between arbitrary secular laws and compassion. He later adds that "what you [Eli] call law, I call shame. The heart, Mr. Peck, the heart is the law! God!" (266). Roth illustrates that Orthodox Jews refuse to comply with hurtful, secular laws that conflict with religious laws or compassion to fellow human beings. Wirth-Nesher adds: "From Tzuref's point of view, the boundary that divides Jews from the non-Jewish world supersedes the boundaries within the Jewish world, and he expects to be treated compassionately by those he defines as part of his own group" (111). Tzuref refuses to act in accordance with secular laws he does not agree with or believe in.

"Eli, The Fanatic" exposes many reasons that Reform and Orthodox sects of Judaism wish to be disassociated from one another in Gentile perception, and the story also illustrates a variety of methods that the sects use to achieve this separation. One specific way

in which Reform Jews elevate and distance themselves from Orthodox Jews is by modifying their practices and beliefs to shift closer to the Gentile norm. In order to evaluate the impact that the Gentiles have on Reform Jews, it is important to notice the invisible but persistent Gentile presence in "Eli, The Fanatic." The story does not feature any non-Jewish characters, but it would be easy to mistake the Woodenton Jews as Gentiles. They take the place of the Gentiles in the way that they persecute a sect of Judaism, which is interesting because their actions are based, in part, out of fear of the type of persecution they themselves have faced. The hierarchy of persecution starts with the Gentiles persecuting Reform Jews, and leads to Reform Jews persecuting Orthodox Jews.

The invisible Gentiles are often mentioned in Eli's letters to Tzuref. In one letter Eli writes that "for this adjustment to be made [Jews and Gentiles living in amity], both Jews and Gentiles alike have had to give up some of their more extreme practices in order not to threaten or offend the other" (Roth 262). Eli is exemplifying many Reform Jews' opinions that some compromises to Jewish practices, traditions, and appearances must be made in order to peacefully live in America amongst the non-Jewish population. Another reference to the Gentiles of Woodenton is made by Ted Heller when he says to Eli, "Pal, there's a good healthy relationship in this town because it's modern Jews and Protestants" (277). The key word in his statement is *modern* Jews, implying that fundamentalist Jews refuse to compromise with Gentiles, and therefore cannot live in affluent communities such as Woodenton. The Woodenton Reform Jews want to make it very clear that they are willing to sacrifice the more non-conventional elements of Judaism in exchange for a middle- or upper-class life in safe, secluded communities.

Along with their willingness to conform to many conventional American norms, the Reform Jews in Woodenton move closer to the Gentiles by adopting an us-versus-them stance. When Eli and the Reform Jews refer to their community, they purposely exclude the European Jews; they refer to themselves as inside the community and the displaced Jews as outside of it. During their discussion of the effectiveness of the law, Eli tells Tzuref that "*we* [emphasis added] make the law, Mr. Tzuref. It is *our* community" (266). Since Tzuref does not agree with the laws, Eli's use of plural pronouns excludes the Orthodox Jews from the sense of belonging within the community. Tzuref calls Eli's attention to this when he asks Eli where he personally stands on the laws he is enforcing, and Eli responds that he is acting on behalf of his townspeople. Eli says, "I am them, they are me, Mr. Tzuref," to which Tzuref responds with frustration, "Aach! You are us, we are you!" (265). Tzuref attempts to teach Eli that Reform and Orthodox Jews are all united under Judaism, and should act with respect and compassion, but Eli refuses to internalize Tzuref's "Talmudic wisdom" (267).

The Woodenton Jews elevate themselves above the European Jews by acting in solidarity and sharing biases. Eli spends so much energy sheltering himself and the townspeople from the influence of the displaced Jews that he is shocked to learn that displaced Jews have been watching the townspeople from a distance. Eli finds out that Tzuref's assistant has knowledge of his wife and other townspeople and he asks, "He talks about *us* to *you*?" Tzuref cleverly replies, "You talk about us, to her?" (268). The watched become the watchers in this instance, which Eli finds incredibly unsettling. His insulation against the Orthodox Jews failed to keep the

sects completely separated. Eli begins to appreciate that even if his condition that "the religious, educational, and social activities of the Yeshivah of Woodenton will be confined to the Yeshivah grounds" is met (262), the Reform and Orthodox sects cannot function with the perspective of outsiders versus insiders.

On the other hand, the Orthodox Jews distance themselves from the Reform Jews by maintaining the fundamentalist elements of their religion that seem most foreign to the Gentiles, and refusing to assimilate into normative American culture. One of the main and most important ways that the Orthodox Jews distinguish themselves is by their dress code and attire. The Woodenton Jews are incensed by the attire that Tzuref's assistant wears into town: a long black coat and a black Talmudic hat. The assistant also sports a long, soft beard. Tzuref wears a traditional Jewish yarmulke, which Eli mistakenly assumes to be a missing part of his head in the dim light of the old residence.

The dress code that the displaced Jews embrace in "Eli, The Fanatic" follows the attire outlined in an encyclopedic entry on Traditional Orthodox Jews. The entry states, "The men wear a black suit and white shirt and sometimes also a black coat. Both Modern- and Traditional-Orthodox men wear a flat, round skullcap called a yarmulke at all times once they reach the age of 13, removing it only when swimming or showering" ("Traditional"). The entry also remarks on facial hair regulations for Orthodox Jews: "The men also have full beards because the Halakah [Jewish Law from The Torah and Talmud] prohibits shaving." While the Orthodox Jews remain loyal to these strict dress codes, the Reform Jews have abandoned these attire restrictions entirely. This is evident by Eli's confusion at seeing Tzuref's yarmulke and the townspeople's offense at the old-fashioned attire worn by the assistant around town. After addressing the causes for tension between Reform and Orthodox sects of Judaism and outlining a few ways in which the sects distinguish themselves, it is important to note that strain often exists without direct animosity or confrontation between the denominations. This is the case in the world of "Eli, The Fanatic," because the sects have no reason to be wary of each other aside from powerful sociopolitical forces and pressures. The displaced Jews are not doing anything intrinsically illegal; they are simply housing 18 children and two men in a single mansion on the outskirts of the town, and learning and teaching Jewish law. They are not disruptive to the lives of the Woodenton community, yet the Reform Jews feel threatened enough by their mere presence to attempt to force them out. Eli originally charges the displaced Jews with violating local zoning laws, but later in the story Ted Heller states, "But this is a matter of zoning, isn't it? Isn't that what we discovered? You don't abide by the ordinance, you go" (Roth 276). Ted's hesitant phrasing insinuates that the townspeople desperately searched for a law that would allow them to run the Orthodox Jews out of their town.

Their fear and prejudice against the European Jews, then, had nothing to do with any specific misbehavior or events. The Woodenton Jews feel threatened without legitimate causation; they are acting instinctually to protect themselves socially and politically. This explains why the Woodenton Jews are not satisfied when Eli successfully convinces the assistant to change his attire: Ted says, "Look, Eli, he changes. Okay? All right? But they're still up there, aren't they? *That* doesn't change" (276). The Woodenton Jews centered their dissatisfaction with the newcomers on their traditional Jewish attire, but this is simply an excuse to

cover-up the fact that they are operating psychosomatically.

In conclusion, little effort is made by the Reform Jews to connect with the Orthodox Jews in "Eli, The Fanatic," because the Reform Jews understand that empathy has the potential to make them vulnerable. If they allow themselves to fully appreciate the hardships endured by the Holocaust survivors and allow them to stay in Woodenton, they risk facing persecution or the loss of their recent socioeconomic gains. The guilt that the Woodenton Jews feel about surviving the Holocaust unscathed while the European Jews did not forces them to push the displaced immigrants away to clear their consciences, instead of embracing them. The Reform sects do not want the Gentile populace to unite them with the radical ideologies of the Orthodox sects, and the Orthodox sects condemn the assimilation and religious compromise adopted by Reform sects. The Reform Jews distinguish themselves from Orthodoxy by shifting closer to Gentile norms, while the Orthodox Jews do so by shifting farther away from the norms. The tension experienced between different sects of Jewry is often caused by undercurrents of social, political, and economic pressures, which hinders positive interdenominational relationships within Judaism.

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About the Author

Katie Grant is a graduating senior majoring in English. This paper was completed as a final Senior Seminar project in the Spring Semester of 2016. It was written under the mentorship of Dr. Kimberly Davis (English). Katie hopes to stay in Massachusetts and work in publishing and editing after graduating in May of 2017.

The State of Bridgewater: Developments in the Bridgewater State College Campus Through Undergraduate Student Activism

KAYLA JANE HOYT

Introduction

W ho gets to decide? Throughout history, this question is the root of all conflicts, whether it is the Han Dynasty in the second century BC expanding its boundaries into southern China or a teenager fighting her parent about wearing eye make-up. The critical points of the transition of power shape the development of the involved parties. Broad generalizations do not display the localized challenges. History is instances of change and when a pattern of reoccurrence emerges, it then becomes a national issue used to speak for all Americans. When looking at the United States, a diverse nation of people, finding those perfect instances of change that can represent all America is quite the undertaking. Nevertheless, people portray the past though the instances done by the few. People pull moments from history and say "The

Brady Bunch was a popular TV show in the 1960s so American families were fascinated with the storyline of families and everyday challenges." However, how can you try to express the entire national experience into one formidable argument? Rather, it is more effective to overview the experiences at a local level to understand the experiences of people in the historical context and then compare them to the national discussion.

Culling student and college publications for the words, images, and activities of undergraduate students who attended Bridgewater State College campus, this study highlights how they defined and responded to issues in their day. Stepping into the Bridgewater State University Archives, we find materials that allow us to tell this story. While building on the work of historians who have studied prominent national activists, this study tells another story: the most ordinary, far more common, and thus even more telling experience of undergraduate students at a small, public, state college. By tracing local student activism at a small college campus, we gain an understanding of how and why the national movement had such a profound impact on American society. What we find is that undergraduate students at Bridgewater State College from 1960 to 1975 used various campus platforms to obtain state funding, reproductive rights, and alcohol consumption guidelines. In doing so, students developed sophisticated political and leadership skills.

Founded in 1840, Bridgewater Normal School opened with the purpose of training Massachusetts's teachers. Housed in the old Bridgewater Town Hall, 28 students enrolled hoping to become predominant members of the educational community. Six years later, the

Bridgewater State Normal School opened a new school building, becoming the first in America that was built for this reason.

Often called the home of teacher education in America, the institution sought to prepare young educators not only through the educational curriculum but also through leadership development. With the institutional motto "Not to be ministered unto, but to minister," the institution challenged the faculty and students to seek deeper meaning in their time at the school than simply a place for classes. Since its founding, the administration and students have aspired to do just that.

When reading through historical documents and preserved archival material on the institution, the name was not the only aspect of the institution that transformed. Originally named Bridgewater Normal School, the institution has since undergone six name changes in its history: Bridgewater Normal School, Bridgewater State Normal School, Bridgewater Teacher College, State Teachers College at Bridgewater, Bridgewater State Teacher College, Bridgewater State College, and Bridgewater State University.

In addition, as the name of the institution changed, so did administrative involvement. With head administrative positions transforming from principal to president, faculty members from teachers to professors, and students developing from students to leaders, the institution transformed with the national society. In physical appearance, the institution grew in land and buildings to accommodate the growing development in student pursuit of higher education. Additional administrative, academic, residential, and recreational buildings were constructed to provide a well-rounded institution for students to live and learn. Student and faculty enacted changes in the educational system to adapt to the growing societal developments.

Alcohol Consumption

In the early 1960s, the societal roles carried through from the 1950s, including the role of women as subservient to men and elders given a high level of respect, were emulated in the administrative powers at the institution. The undergraduate students were provided a student and dormitory handbook that outlined the expectations of the students during their undergraduate careers. In reading these policies, the gender ideals and power dynamics are shown. In the 1961-1962 *Bridgewater State College Dormitory Handbook for Women*, under the subsection entitled "Concerning Eating Places," the handbook outlines the regulations for undergraduate women. It is written, "no girl may go to any place in the Bridgewater where liquor is served… the possession or use of liquor on this campus is STRICTLY FORBIDDEN. Failure to observe this ruling will be considered sufficient cause for the dismissal of a student from the College."[1] Any female undergraduate student, according to this administrative regulation, was not permitted to enter any premises in the town of her educational institution in which alcohol was served, regardless of her age. Furthermore, if a student was found in violation of this regulation, it was punishable by expulsion from the institution. In 1961, the undergraduate students did not have autonomous control over their bodies. Wording such as "STRICTLY FORBIDDEN" enforced the severity and threatening nature of power the administration held over its students. Undergraduate students, who range in average ages of eighteen to twenty-five

were being disciplined and instructed to abstain from alcohol consumption and boycott any location in which alcohol is consumed. Surveying further through the institutional regulations on alcohol consumption, this policy did not remain much longer.

On September 16, 1971, the institution's student newspaper, *The Comment*, published an article "Rathskeller Underway," which can be viewed in Figure 1. This article outlines for the student readers the progress in the construction of an on-campus bar which served alcohol to students. The construction of the on-campus bar was funded by several campus-based organizations. The Student Government Association, a student body dedicated to serving the collective interests of Bridgewater State College, was funded by the campus community for effective living in a democratic society, advocating for the students' rights and needs and encouraging self-reliance in the Association's search for truth and justice. As

the largest and longest standing organization on campus, the SGA donated $10,000 for the construction. In addition to this, the Day Student Organization, a student body of undergraduate students primarily focused on the enhancement of the undergraduate experience for students whose academic time at the institution was during the day, donated $3,000 to the cause. And lastly, the Student Union Building Funds provided the remaining costs for the project, which totaled over $30,000. The students of the institution initiated a campus-wide reformation of policy and campus dynamic through the budgeting of their finances and on-campus action.[2]

The aspiration for equity in the institutional administrative policy on alcohol consumption, regardless of student gender identity and changes in alcohol consumption, resulted in the creation of a campus-based bar based on student organized funds. When the bar was finally opened, primarily female students served as bartenders. Within ten years the female undergraduate students enrolled at Bridgewater State College went from being unable to step foot into a building where alcohol was served in the Bridgewater area to then being paid to serve alcohol to Bridgewater State College students. The students took the initiative to enact a localized change in power and autonomy. The right and ability to control individual alcohol consumption as young adults of legal
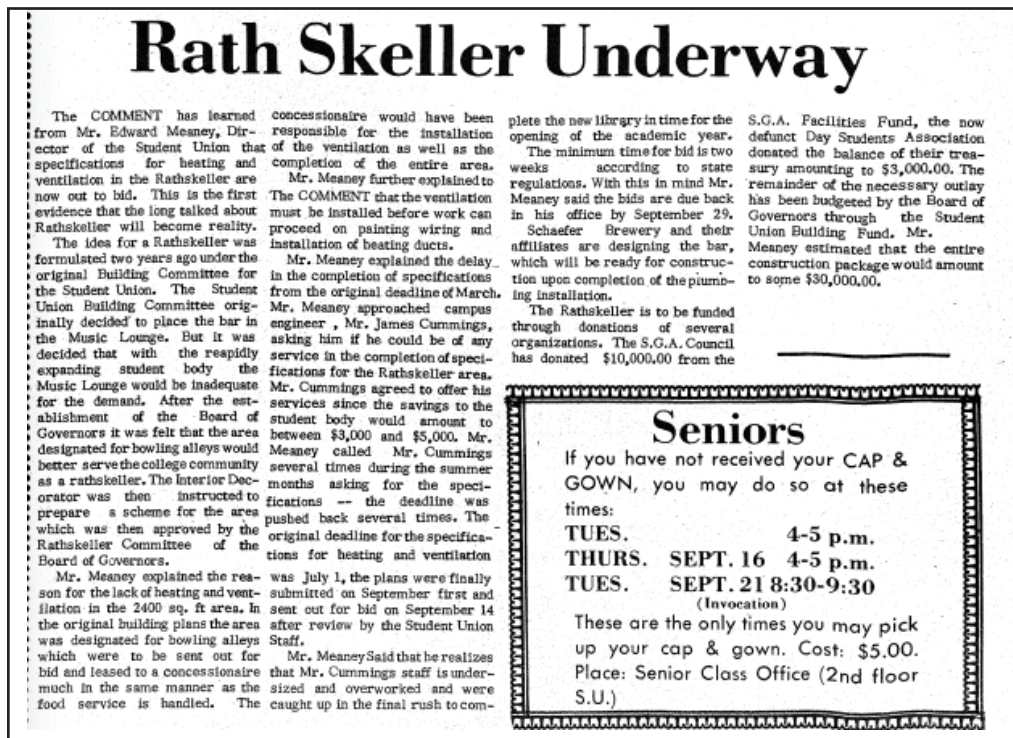

Fig. 1. *The Comment,* September 16, 1971.

age were the fights these students took over, regardless of the gender of the consumer. Before, the administration was the governing body controlling their ability to decide whether they could drink alcohol. The students changed this. The undergraduate students at Bridgewater State College challenged the administrative control regarding the student's decision-making abilities over their choice of alcohol consumption. This change gave students the power to decide when and where they consumed alcohol. Through the initiative to bring about an on-campus bar and work on proposing new administrative policies, students' efforts set in place a change in the campus cultural acceptance of women's alcohol consumption. The students seized control of their own bodies and decisions. This localized transformation of power from administration to students shaped the progress of the institution. This displayed the undergraduate student desire to be responsible for making decisions about their wellbeing, rather than continue in subservience to the administrative ruling. Students gained the right to control their own bodies through their efforts in constructing an on-campus bar.

Reproductive Rights

The impact of the national second-wave feminist movement is evident at Bridgewater State College in reviewing student-generated writings. Nationally, it is accepted and understood that the first wave of the feminist movement was the suffrage movement of the late nineteenth century and early twentieth century. The second-wave feminist movement took place in the 1960s. With a broad range of issues, from sexuality, marriage rights, workplace equality, and reproductive rights, the second-wave feminist movement sparked a national debate on the rights and treatment of women in the nation.

When reviewing the college newspaper *The Campus Comment*, we find that the phrase "the political is personal" was often reflected in front-page news. The first instance this occurred was during the 1965 Bridgewater State College Anniversary Symposium. At this 125th Anniversary celebration, notable speakers presented to the student body on various topics. As seen in Figure 2, the primary symposium discussion of this event was for the division of Natural Sciences and Mathematics. In this speech, the discussion on population control and its global impact focused the dialogue. Dr. Marshall C. Balfour, consultant to the Population Council of New York, for his topic focused on the need for population control and the governmental impact of birth control. Notably, the author stated there was a "greater percentage of student attendance at this symposium."[3] With an array of undergraduate students amongst a presentation on the positive global impact of birth control, the dialogue for birth control use then began to grow.

The Campus Comment, as the student-run newspaper, published material not only of student interest, but also provided the voice for student concerns. When reading these issues, repetitive patterns in the dialogue of student concerns around birth control surfaced in the articles published.

Richard Rosenberg, in the May 3, 1967 issue of *The Campus Comment,* as seen in Figure 3 published an article entitled "BIRTH CONTROL: A Hushed Problem." In this article, he did not discuss the argument itself, but rather challenged the readers to admit that reproductive rights were an issue. The discussion of sexual relations, pregnancy, and contraception was a "hushed" topic and undergraduate student Richard Rosenberg

Fig. 2. BSC Anniversary Symposium, *The Campus Comment,* November 15, 1965.

Fig. 3. *The Campus Comment,* May 3, 1967

challenged his peers to open the dialogue on this issue.[4] With the generation prior raised upon the ideals that a proper woman did her due diligence in the household for her husband and was the height of perfection, the discussion of any displeasure from the woman was a taboo thought. With the second-wave feminist move-

ment, women and feminist movement advocates not only challenged the societal norms, but they shouted the reality of the unjust treatment and quality of life for women. Change cannot come from silence, and avoidance of the issue will not make it go away. Localizing the issue of birth control and contraception, the article moves on to discuss the events at Boston University involving William Baird.

In Massachusetts, a man by the name of William Baird was a leading activist for reproductive rights. Given the name "Father of Birth Control," Mr. Baird was

Bill Baird Speaks at C.F.

BRIDGEWATER ... Bill Baird, who has been described variously as a "crusader, a matyr zealot, a male Margaret Sanger" will be speaking in Bridgewater in the near future, under the sponsorship of Christian Fellowship.

Due to Mr. Baird's varied activities a precise date has not been decided upon at the writing of this article. However, it will likely be either September 16th or 18th. Watch your bulletin boards.

Baird, while awaiting appeals, runs his Parent's Aid Society Clinic, giving out birth control advice and the names of men who perform abortions. He says in two years 3000 pregnant women have come to him, a slight majority of them married, 62 per cent of them Catholic.

The women who leave the clinic are never heard from again. Baird said, "I have never heard anything to indicate any of the 3000 women I have

helped got into trouble, and I assume I would have."

"None of us who try to help in this matter feel that what we're doing should take the place of the hospital," said Baird. "I wish all abortions were legal. However, when people come to me so desperate you know they'll go to any quack and try anything what we are doing is a far better alternative I feel."

Baird has a repititious apostle-like theme of "I alone am helping these women," coupled with the disallusion that "no one I have helped came forth to help me in Massachusetts." He gets no fees, and he says few people who've come to him send contributions. Last year his landlady threatened to padlock his clinic because he was nearly four months behind in rent. Paul Krassner, editor of The Realist," paid the bill.

Baird said he got involved when, as a clinical director for EMKO, a company that manufactures a birth control foam, he was in a New York City Hospital one night. He saw a dying woman wheeled in, a coat hanger embedded in her uterus in a self abortion attempt.

Baird said many of the Catholics who came to him have not used birth control methods other than rhythm. "I once asked a woman why she didn't use the pill and she said, "It's a sin every time I use the pill." I asked why she wanted an abortion and she said, 'Well, that would be a sin only once.'"

Following Mr. Baird's address, on September 23rd, there will be a panel on birth control with representatives of the clergy, medical doctor, and lawyer. The panel will be at 7:00 P.M. in the facilities used by the Chameleon Coffee House, located in the parish hall of the local Methodist Church.

BILL BAIRD

Fig. 4. *The Comment,* September 9, 1969.

arrested eight times during the 1960s for conducting lectures about birth control and abortion. One such arrest occurred following a lecture he conducted on April 6, 1967, at Boston University. In the state of Massachusetts at the time, it was prohibited to provide contraception to an unmarried person.

Following his lecture, he provided condoms and packages of contraceptive foam to the students in the audience. For this, William Baird was then arrested. In 1972, he appealed his sentencing to the Supreme Court. Following his case, Eisenstadt v. Baird, all persons gained the right to possess contraception, regardless of their marital status.[5]

Two years following the Eisenstadt v. Baird Supreme Court case, William Baird made local Bridgewater State College news. As detailed in Figures 4 and 5, Wil-

liam Baird was featured in *The Comment* advertising and discussing his guest presentation to the institution. Sponsored by the Bridgewater State College Christian Fellowship, the primary focus of his presentation was the discussion of illegal abortions. The article proceeds to describe Mr. Baird's experiences with illegal abortion issues. Bill Baird is quoted as witnessing in a New York hospital "a dying woman wheeled in, a coat hanger embedded in her uterus in a self-abortion attempt."[6] This chilling reality of the dangers of illegal abortions and the epidemic society was facing was a front-page topic at Bridgewater State College. This otherwise hushed issue hidden from the forefront of societal view and the cultural conversation was therefore challenged by the second-wave feminists. The national picture of abortion previously was tucked away in a back closet inside of a box buried in a hole in the wall. Now those pictures were one by one being unboxed and put

Bill Baird At BSC

by Greg Lee

BRIDGEWATER...."Most college students are behind me, so far behind me that I can't see them." With these words, Bill Baird, in his second appearance on the Bridgewater campus, challenged the audience to take a stand and fight against the antiquated and totalitarian sex laws of Massachusetts.

Baird, who is an advisor to the Senate of New York and who has been asked by President Nixon to advise the President's Commission on Birth Control, is now facing a three month jail sentence for giving a can of contraceptive foam to a 22 year old Boston University coed, last year. (The same type of contraceptive may be bought by anyone in Zayre's department stores *and carries a nine-cent state sales tax*...HYPOCRISY?)

"8000 babies are born every hour, 70 million are born every year, and within the next 100 years there will be one person for every square foot of land in the world. When two-thirds of the world is hungry, now, what will happen to these people? There are simply too many people and not enough to feed them."

It was a grim and ugly picture that Baird drew for the audience, but he brought the issue close to home when he explained that the birth rate in Harlem, Roxbury, and other under-privileged areas was the same as India's or Pakistan's.

"We spend millions", Baird pointed out, "on developing birth control plans for India and other Asian countries, but it is still a crime to talk about it or practice it here in Massachusetts."

But, as Baird pointed out, the whole issue of birth control will become academic, because there will be so many people in this country that the government will *have* to take steps to cut and regulate the birth rate. Then birth control will be required of everyone for national survival. (What we don't do on our own, the government will have to do for us, later, and not always to our liking or our control...1984)

The Massachusetts law reads that, in part, no one may "sell, lend, exhibit, advertise, or cause to be manufactured" any birth control device or information.

This includes Life, Look, or any other magazine's advertising of the "pill". It also includes Cardinal Cushing and Monsignor Conway who authorized a pamphlet for Catholics entitled *The Rhythm Method.* It includes Zayre's department store and countless drug stores that exhibit and sell birth control devices. Yet, Baird is the only person to be prosecuted under this law. Why? To use Baird's own words,

The rich may purchase abortions. They can travel to where they are legal, or bribe their way into hospitals under false pretenses, but what about the poor?...The thousands of women, black and white, who cannot afford clinical abortions (in other countries) who die at the hands of quacks every year, what about them?

Fig. 5. *The Comment,* September 25, 1969.

on display, made to be discussed and interpreted by all of the society. The dialogue for the reproductive rights of women was now open, and that was a box that could not be easily closed.

In the following week, Bill Baird came to Bridgewater State College and presented to the students on the aforementioned topic. Undergraduate student Greg Lee provided a synopsis of Bill Baird's presentation on birth control, abortion, and Massachusetts law. Providing several arguments for the cause, Greg Lee used the sentence "grim and ugly picture that Baird drew for the audience, but he brought the issue close to home" to describe the presentation style of Bill Baird and the reality of the issue at hand. When speaking of his actions for the rights of all people, Bill Baird argued he protested for "the thousands of women, black and white, who cannot afford clinical abortions who die at the hand of quacks every year." Bill Baird closed his presentation to the students by "challenging the audience to take a stand and fight against the antiquated and totalitarian sex laws in Massachusetts."[7] In a presentation to undergraduate students at an institution with over half of the student population comprised of females and with the presentation-localized with data pertaining to the area, the information provided resonated with the student body as portrayed through their writings. The undergraduate students at Bridgewater State College in 1972 were focused on the issue of reproductive rights. But why did it take a white, middle-aged male advocate to pioneer the rights of women for women? Advocating throughout the nation on behalf of women, Bill Baird used his privilege to advocate for those in the society whose voice did not carry as much weight. Through their focus, undergraduate students coordinated the finances and scheduling to have Bill Baird present at the institution and provide an argument in favor of Massachusetts legislative reform on

reproductive rights.

With the 1960's resurgence of societal reassessment and vocalization on inequality, the issue of the inequality of women's rights surfaced. With the first national women's movement occurring in the early twentieth century, this "second-wave" feminist movement took place, beginning in the 1960s and lasted until the close of the 1980s. The primary focus of feminists in this time was the equity beyond law and into women's lives. This topic spanned a wide range of issues, including reproductive rights, legal inequality, and sexuality, to name a few. The argument for women's equality and independence was expressed through literature, legislation, and political activism. Looking at the popular literature of the time, a national bestseller in 1963 was the text by Betty Friedan entitled The Feminine Mystique. This text addresses "the problem that has no name" which discussed the widespread dissatisfaction amongst women who conducted traditional 1950's homemaker roles and the idealization of domesticity.Challenging the societal female ideals, The Feminine Mystique opened the dialogue for reevaluation of a culture of feminine inferiority and subservience to their male counterparts.

In conjunction with literature, a new medical oral contraceptive pill brought about a social reform and controversial change. With the Food and Drug Administration's approval and availability of "The Pill" in 1961, the female sexual revolution began. With personal oral contraception, women could now take control of their sexuality. With the control of their own bodies, women could now expand further into education and the work world without the fear of unplanned pregnancy challenging their aspirations. This movement provided fe-

males an argument for equity in the workforce, with previousarguments for inequality centralized on the "deficit from female employee pregnancy and maternity." In all facets of female independence, "The Pill" provided women with a substantial basis for arguing the invalidity of inequality in employment and education.[8] Sexuality as a political argument went further into discussion during the 1960s. With the argument of "the personal is political," second-wave feminism also opened the dialog on abortion, sexual assault, and legislative inequality. Women hosted Speak-Outs, which were congregations of women gathered openly to discuss their experiences with illegal abortion, a topic rarely heard about, much less made the central focus of discussion. With multiple women sharing their experiences based on their pregnancy, which included rape and incest, and their reasoning for abortion, which included personal ealth threats and their experiences during and from illegal abortions, the argument for the need for change was indisputable. In 1971, legislative landmark change took place in the State Supreme Court case Roe V Wade. The case argued that the right to privacy for women to have an abortion extends under the 14th Amendment, with the primary argument being the protection of women's health and the protection of the potential human life. Regulations on abortion legalization were made, with restrictions being to the third trimester of pregnancy.

State Funding

In 1964, Bridgewater State undergraduate students began to articulate specific demands for campus change. Turning first to state funding, we find evidence in student organizational meeting minutes and the student campus newspaper that undergraduate students at Bridgewater

State College championed a campus-based financial re-distribution plan. Students requested that state or federal financial funds would be directed to the construction of a student union building, a centralized location for student activity and meeting. With no on-campus student building, meetings conducted by student organizations were held minimally or in smaller groupings. With the procurement of a student building, the undergraduate students could then conduct meetings of a greater size and impact.

In 1960, Bridgewater State Teachers College formally changed its name to Bridgewater State College. Shortly after this, the college underwent a change in president; when he began in 1962, Adrian Rondileau took over for the next 25 years. During his time as president, lasting over two decades, the campus increased greatly. The campus student body increased from 1,000 to 9,000 and the campus expanded from 36 to 170 acres. At the start of his presidency, the campus encompassed academic buildings, women's residence halls, and an athletic building. In 1962, the college altered its curriculum to include a Bachelors of Arts degree. From 1960 to 1975, the campus changed to incorporate a student union building, a new library, multiple new residence halls for men and women (rather than female-only residency), a gymnasium, a science and math center, and a greenhouse. National legislative and societal changes were reflected in the progression of the college campus in student activism and administrative reform. The progression of student policies and campus expansion reflected the social expansion of student enrollment in higher education.

On Tuesday, March 3, 1964, President Rondileau held a meeting at the main administrative building, Boyden Hall, with several Massachusetts legislators.

Knowledgeable of this meeting and those in attendance, the undergraduate students organized a gathering. Over seven hundred Bridgewater State College students gathered outside of Boyden Hall, congregating at the steps of the building. The students, exercising their rights as potential voters and paying students, vocalized their desires for the appointment of funding for the institution to go towards the construction of a student union building. From inside the meeting, the hum of student voices requesting the funds could not be ignored by any in attendance. They were so effective that State Representative David Flynn, local alumnus of the Bridgewater State Teachers College class of 1958, decided to support their cause. Along with other Bridgewater alumni, Representative Flynn advised the students about how best to organize their campaign. Following this advice, activist students formed a "Student Union Committee" to pressure campus officials and the state legislature todesignate funds according to student demands.[9]

As depicted in Figure 6, the students moved beyond the campus base in interest of attaining the finances necessary to construct the student union building. Just over a month since the first student movement, the Bridgewater State College undergraduate students gathered at the steps outside of a legislative meeting. Nevertheless, these steps were not located at the base of the campus administrative faculty building. The undergraduate students made the trip from Bridgewater to Boston. Rallying outside of the Massachusetts State House, the students gained the attention of state legislators. With students rallying outside of the state

house, student action was seen as one entered the building, looked outside the windows, or walked the streets. In conjunction with this, the undergraduate students and graduate students, totaling over three thousand in number, gathered to complete personalized letters and phone calls to lawmakers vocalizing their request and their position as potential voters.

With their movement gaining regional attention, the actions of the students gained the attention of Massachusetts Governor John Volpe. Governor Volpe, a Massachusetts native and son of Italian immigrants, notably fought for equality issues for minorities.

Signing legislation to ban racial imbalances in education, reorganize the state's Board of Education, liberalize birth control laws, and increase public housing for low-income families, his fight for equality and localized issues was not uncommon. Upon hearing of a student movement for a local cause, the students were called for a meeting with Governor Volpe to discuss the issue. Prior to this meeting, the undergraduate student paper, The Campus Comment,published a political cartoon to showcase the potential impact of this meeting. As showcased in Figure 7 the meeting of the undergraduate students and the morale of the students' spirit will influence the results of the formation of the Student Union Building. Following the meeting, Governor Volpe, in collaboration with Bridgewater State College administration and faculty, ensured the allocation of state funding for the construction of a student union building. After years-long protests, the undergraduate students at Bridgewater State College had reached their goal. Through determination, political activism, and patience, the construction of the student union building

Fig. 6. *The Campus Comment,* December 14, 1964.

went underway.

The efforts of the students on the issue of construction of the Student Union Building reflected the action of the students to seize power in the institution. The undergraduate student's efforts transformed the control of funding from the administration to the students' interests. Having the power to control the funding resulted in the construction of a Student Union Building, as depicted in Figure 8. The groundbreaking construction of a building designed directly for student interests showcased the power change from administration to students. Students gained control of the progression of the institution in appearance and future development. Students gained a location for meetings, meals, and leisure. Whether the purpose was for organizational progression or simply for students to have a new place to hang out, this construction was monumental for the

school. The students seized the power. The students gained the funds. The students gained a building. At a state institution, the students procured the power to make this institution their institution.

Conclusion

As this history of student activism at Bridgewater State College between 1960 and 1975 clearly shows, small campuses all across the country did as much to shape and enact postwar social change. Showcasing that students have a voice in their community makes the community reflect their voice. Their efforts provide a foundation for a deeper understanding of the societal transformations occurring around the nation. By stepping into the minds of those in the past, one can develop a better comprehension of the world we live in today. With this newfound knowledge of the institution, found by using archives to look into its past, students at the institution can connect with the university on a greater level, and with the nation as a whole.

The issue of decision-making at the local level influenced the transformative change of Bridgewater State College. The undergraduate students' procurement of power from the administration resulted in the transformation of the institution over ten years. Before their actions, women could not enter establishments where alcohol was served, the topic of contraception was taboo, and state school spending was the decision of the institution. Ten years later, the students were serving alcohol in an on-campus bar, the topic of contraception and sexuality were open dialogues and students had a role in the spending of the institution. Students gained the right to control their campus, their money, and their bodies.
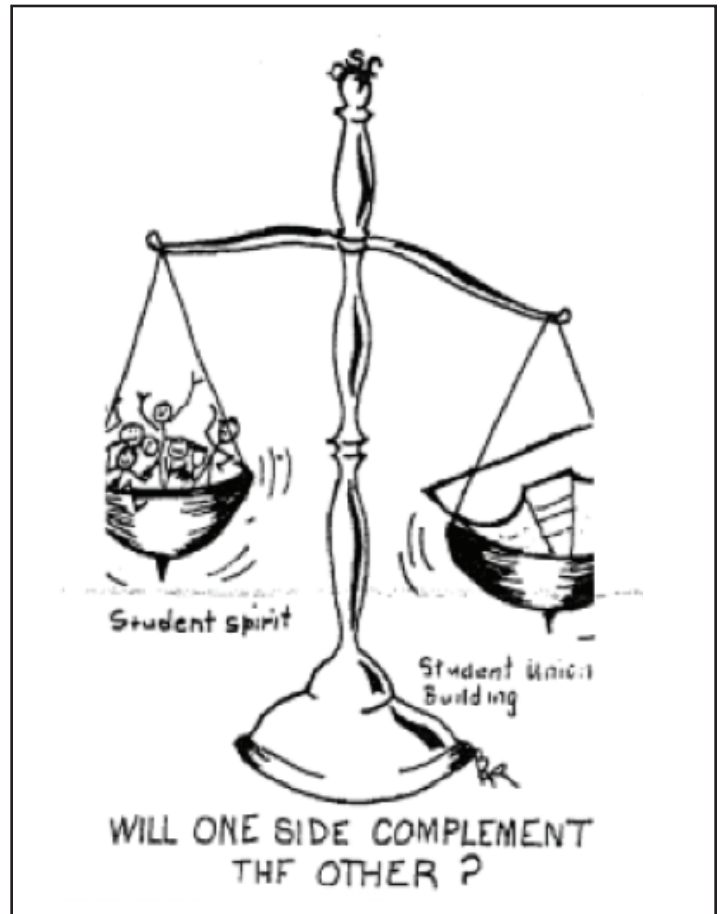

Fig. 7. "Student Union Committee Visits Governor," *The Campus Comment,* April 1, 1968.

Nationally, undergraduate students took to nonviolent activism to insight change at the local level. One of the first notable instances of this took place on February 1, 1960, in Greensboro, North Carolina. In Woolworth's restaurant, several students sparked a nationwide movement for change. The black college students from North Carolina Agricultural and Technical University entered the restaurant and sat at the lunch counter to be served. After being refused service due to their race, the students refused to leave, peacefully protesting the segregation of service to them based on their race. From this movement, these college students then unifed together with the focus on civil rights. The Student Nonviolent Coordinating Committee (SNCC) was

formed to provide youth blacks a voice in the movement for equality. The students then organized various peaceful movements to address the inequality, such as sit-ins and peace marches. Ella Baker, a notable local African American civil rights activist, assisted the students in the formation of SNCC. Ella Baker in 1969, in regards to the civil rights movement by students, stated "Oppressed people, whatever their level of formal education, have the ability to understand and interpret the

Fig. 8."G roundbreak and Construction," *The Campus Comment,* February 26, 1969.

world around them, to see the world for what it is, and move to transform it."[10] The students gathering in protest of oppression provided a safe outlet for students to vocalize their dissatisfaction with societal issues. The students at North Carolina Agricultural and Technical University were the first in the student movement in the 1960s, but they certainly were not the last. The actions of these undergraduate students then inspired other undergraduate students around the nation to conduct similar political action for localized issues. Around the nation, undergraduate students utilized their institutional campuses as foregrounds to create fundamental change for the enhancement of social reform.

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The Effects of UGG Boots on Lower Extremity Walking

ARIANA LAFAVRE

Abstract

UGG boots have become an increasingly popular choice in footwear. Women, especially, have bought UGG boots at a high rate, making the shoe one of the top footwear choices in today's world. UGG boots can be described as a type of flat footwear and flat footwear does not provide medial longitudinal arch support on the bottom of the foot. This lack of support may cause foot injury due to over pronation in the subtalar joint. There was still the question of if UGG boots limits rear foot pronation movement. The purpose of this study was to examine and compare the kinematics of barefoot walking and walking in UGG boots. Ten female subjects participated in the study and the results showed no statistically significant difference in the lower limb joints between the barefoot walking and the UGG boot walking. Additionally, no difference in the subtalar joint between the two types of footwear (Barefoot: 170.8 ± 8.5° vs UGG: 174.3 ± 4.1°) during the mid-support phase of the gait cycle was found. This study concludes that UGG boots do not limit rear foot motion in the pronation movement and future studies are warranted to evaluate the long term effects of UGG boots with various ankle pronation profiles.

Introduction

Walking is a basic and fundamental method of locomotion that provides both support and propulsion (Kharb, 2011). A person's walking gait, or their ability to propel forward their center of gravity, can vary greatly depending on the biomechanics, or study of movement, of their ankles and feet. Humans protect their feet and ankles with varying footwear, but often do not make choices which support their feet in an appropriate way. Since human feet and ankles support the entire body, the rest of the body is affected by the type of footwear—supportive or unsupportive—that is chosen.

According to ePodiatry, arches, or the curve on the sole of the foot, may often need to be supported by certain types of footwear or various foot orthotics. Most people have arches under their feet but Shercher (2008) reports 8-15% of the population have a cavus foot, which is an excessive upward arch, while nearly 20% of Americans have a flat foot, which is an excessive downward arch (Donatelli, 2000). Arch pain can result from improper positioning of the foot and ankle. Footwear that is flat and lacks arch support can cause injuries in the foot and ankle, in turn affecting the walking gait of the person, says epodiatry.com. There are three phases of walking gait, beginning with heel strike, or when the heel hits the ground, followed by mid-support, or when the whole foot is flat to the ground, and ending with toe off, or when the toe begins to come off of the ground, moving into the next step. As discussed in a study conducted by Glasoe, Yack, and Saltman (1999), the medial longitudinal arch serves as the chief load-bearing structure of the foot. In other words, majority of the weight is put on this part of the foot when walking, especially during the mid-support phase. If a shoe does not provide support to

Figure. 1. The classic style UGG boot used in this study.

this arch, the walking gait can be altered. This potential change in the walking gait could mean damage to the arch and pain in the foot and other areas of the body. In addition to the type of footwear the wearer chooses, the walking terrain affects the walking gait. When walking on an incline, the foot and ankle produce greater range of motion and alter the timing of heel strike and toe off compared to walking on flat ground. Combining these aspects of foot abnormalities and flat footwear creates a challenging environment for both the foot and ankle. The eversion and inversion, or side to side movement, of the foot and ankle that can result from walking on an incline is worsened while wearing shoes that lack support (Morley et al., 2010; Walker, 2015).

In recent years, Deckers Outdoor Corporation has reported that UGG boots, **Figure 1**, have become one of the top selling footwear choices in the world. UGG boots originated in Australia and New Zealand, are made of sheepskin with fleece on the inside. In the

1960's, UGG boots gained popularity because surfers often wore them to prevent cold, numb and wet feet. From the late 1990's to mid-2000's, UGG boots have emerged as a fashion trend in the United States and worldwide. In 2008, the Deckers company reported US$689 million in UGG boot sales, almost a 50-fold increase from 1995 (Abkowitz, 2009). The Huffington Post reports that according to a survey conducted by Beso Shoe, approximately 25% of American women own UGG boots. However, UGG boots are a flat shoe that provides minimal arch support, which may cause the foot to have excessive eversion motion. Price (2014) indicated that flat shoes can cause detrimental effects on foot health. Strachan (2010) further notes that UGG boots are designed more for the aesthetics and warmth rather than functional support. Moreover, Miller (2010) from New York Times reported on new evidence suggesting that UGG boots may be "ruining women's feet." ABC News reported similar information just months before the New York Times, also suggesting that UGG boots have harmful effects, including foot and ankle pain, on the wearer (Leamy, 2009). Additionally, a podiatric surgeon, Mike O'Neill, claims that they cause the ankle to be in the wrong position, leading to the femur changing alignment and abnormal movement in the acetabulum as well as a possible predisposition to back ailments (Irvine, 2010).

Despite there being limited research conducted on the UGG boot specifically, there has been extensive research on another flat shoe: the flip-flop. The flip-flop is quite similar to the UGG boot, for both are flat shoes providing little to no arch support. Studies conducted on flip-flops and their effects on walking gait have concluded that they have a definite effect on the gait

kinetics (Shroyer, 2015). Price et al. (2014) conducted a study on flip-flops and found flip-flops loosely secured and rubbery design resulted in altered gait parameters, particularly greater ankle dorsiflexion ($13.0 \pm 2.9°$) compared to barefoot ($13.5 \pm 2.4°$). Their research suggests that flip-flops cause the foot and ankle to flex upward—dorsiflexion—altering the gait of the person. There have been numerous reports claiming that flip-flops and other thong style shoes are responsible for a great deal of ankle and foot injuries. The spongy sole and lack of support in the flat flip-flop cause over pronation of the ankle, which can result in a more flat foot and foot injuries. Another study by Hetsroni (2006) indicated that over pronation, a combination of eversion abduction, and dorsiflexion movements, can lead to various injuries, particularly anterior knee pain. This over pronation occurring in flip-flops can be dangerous to the wearer. Another study by Zhang (2013) discussed that flip-flops made people have smaller steps and greater ground reaction forces, as well as different ankle and foot kinetics. Given the similarities between flip-flops and the research on UGG boots alone, this study expected to see similar problems in the UGG boot that have been found with the flip-flop. If flip-flops are cable of causing the foot flex in an upward direction, it is possible that flip-flops are also capable of causing the foot evert or invert, or move in a side to side manner. The investigator expected to see similar results in the UGG boots, given the similarities in the structure of the shoe.

Overall, this research project sought to understand how UGG boots affect the walking gait of its wearer. This research can help to educate the population, particularly females, on this particular brand of footwear, perhaps assisting in the decision to purchase and wear the UGG boot.

Methods

Ten female Bridgewater State University students (age $= 21.3 \pm 1.2$) with a shoe size between 6 and 10 were recruited to participate in this study and the Institutional Review Board approval had been obtained prior to the study. The participants received a briefing on what the study required of them, and were given the decision to opt out following the briefing if they felt it necessary. Participants signed a written informed consent—detailing all the needs of the study—prior to beginning the actual study.

All participants arrived to the Biomechanics Laboratory. Each participant was given the chance to walk on the treadmill to become aware of the task if they felt it necessary. Each participant was then given a pair of UGG boots in their shoe size and was also asked to be barefoot for a portion of the research as well. During the testing, each participant walked for one minute at a speed of 1.3 m/s on a treadmill without any incline. A speed of 1.3 m/s was chosen because it mimics natural walking speed most closely. They walked in UGG boots and then walked while barefoot. Participants were given time to rest between trials if they feel it necessary. Data collection was concluded in half hour durations for each participant.

Five joint reflective markers were placed on the right side of the body at the shoulder (glenohumeral joint), hip (greater trochanter), knee (lateral epicondyle of tibia), ankle (lateral malleolus), and toe (base of fifth metatarsal). A Casio high speed video camera (Model: EX-FH25) was positioned to capture the sagittal
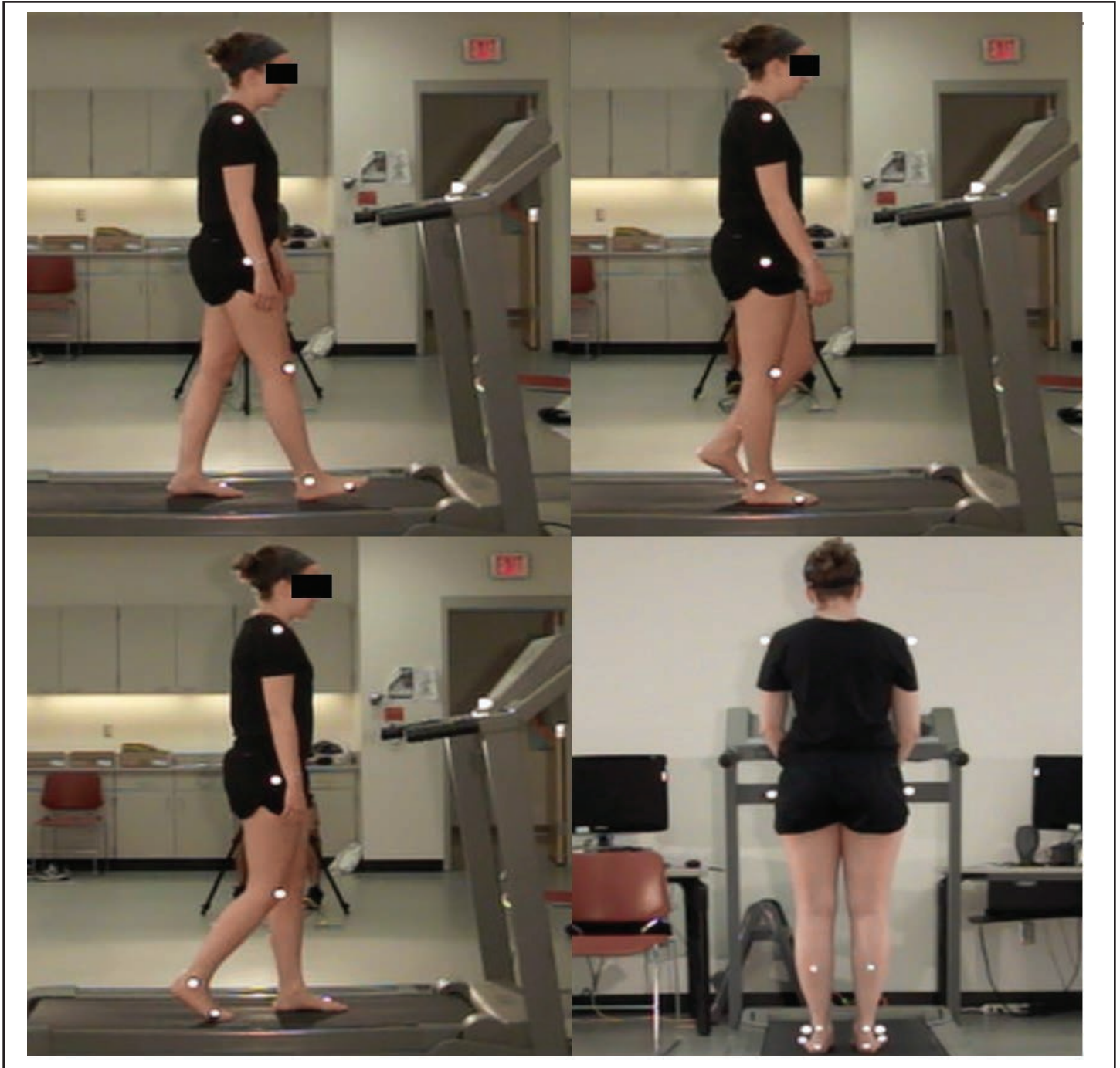
Figure 2. Images from top to bottom, left to right, show one of the subjects during heel strike, mid stance, toe off, and from ear view. All joint markers placed can be seen in these images.

view of the walking motion at 120 frames/second in conjunction with a 650W artificial light. This camera was used to determine the hip joint flexion/extension, knee joint flexion/extension, and ankle joint dorsiflex-ion and plantar flexion movements. Additionally, three joint markers were placed on the back side of the body at the mid calf, Achilles tendon, and heel. Another Casio video camera of the same model was positioned to

Table 1. Lower kinematic comparisons between barefoot foot and UGG boots.

Joint Angle	Mean ± SD (BF vs UGG)	p
Hip (°)	170.9 ± 5.5 vs. 169.0 ± 6.0	.129
Knee (°)	163.1 ± 7.1 vs. 161.3 ± 6.1	.113
Ankle (°)	100.7 ± 4.4 vs. 100.5 ± 3.4	.863

*Statistical significant at $p < 0.05$

Table 2. Kinematic comparisons between barefoot foot and UGG boots at subtalar joint.

Conditions	Mean ± SD (BF vs UGG)	p
Joint Angle (°)	170.8 ± 8.5 vs. 174.3 ± 4.1	.273
Velocity (°/s)	-18.6 ± 46.0 vs. -8.0 ± 22.5	.494
Acceleration (°/s^2)	-427.4 ± 437.2 vs. -857.5 ± 543.5	.591

*Statistical significant at $p < 0.05$

capture the rear view of the walking motion at the same rate with a 650W artificial light. This camera identified ankle eversion and inversion movements, **Figure 2.**

A two-dimensional kinematic analysis was conducted for each type of footwear at zero degree incline angle with Ariel Performance Analysis System (APAS™) motion software on the right side of the body. All video trials were then transferred onto a computer in the Biomechanics Lab for gait analysis. The mid foot support phase of each of the three gait cycles was analyzed and used for statistical analysis. A total of 120 trials (10 participants x 3 mid supports x 2 camera views x 2 types of footwear) in the study were analyzed, which is a typical sample size. A t-test was conducted at α = 0.05 between the two types of footwear. All statistical analyses were conducted with SPSS software.

Results

The results of this study indicate that there is no significant difference between walking barefoot and walking in UGG boots in either the right or rear sides of the body at a zero incline during mid support, **Table 1.** No difference in the subtalar joint between the two types of footwear (Barefoot: 170.8 ± 8.5° vs UGG: 174.3 ± 4.1°) during the mid-support phase of the gait cycle

was found, **Table 2**. This lack of statistical significance means that the UGG boots do not seem to limit the rear foot motion during pronation movement as initially hypothesized for this study. In other words, the foot does not roll inwardly, pronation/eversion, when walking in UGG boots, particularly from the rear view.

The numerical data showed mean displacement of both right and rear views that were all in close proximity to one another, with very little deviations, **Tables 1 & 2**. These numbers being so close to each other could mean that walking in UGG boots somewhat mimics the barefoot walking.

Discussion

The findings of this study were consistent with previous research studies in terms of the ankle's dorsiflexion movement. Price et al. (2014) conducted a study on flip-flops, and found ankle's maximum dorsiflexion during stance on flip-flops were 13.0 ° $\pm$ 2.9° compared to the barefoot condition of 13.5° $\pm$ 2.4°, which is equivalent to 103.0° $\pm$ 2.9° for flip-flop and 103.5° $\pm$ 2.4° for barefoot in their study. In this study the ankle's dorsiflexion movement at mid support stance was 100.5 ± 3.4° and 100.7 ± 4.4° for UGG and barefoot conditions, respectively, and these findings are quite similar to Price's study. The slight ankle joint difference between this study and Price's study may be due to the fact that Price et al. (2014) examined the maximum dorsiflexion joint angle at mid support while this study evaluated the instant of entire foot contact at the mid support. This study suggests that even though UGGs are a type of boot, the mass of the boots may be minimal; hence, they do not significantly change or affect the ankle's dorsiflexion movement while walking in short duration. The effects

of wearing boots for a long duration period of time on the ankle joint remained to be examined.

UGG is a type of flat footwear and the results of this study showed that there is no significant difference between the barefoot and UGG conditions in terms of ankle's eversion/pronation and inversion/supination movements. Morley et. al (2010) conducted a study to examine the ankle's eversion/pronation and inversion/supination movements between shod and barefoot running. Morley et al. (2010) found that the low pronation group (3 – 8.9°) did not show any difference in the ankle's maximum eversion movement between barefoot and shod conditions. However, the middle pronation (9 – 12.9°) and high pronation (13 – 18°) groups showed significant increase in ankle's pronation movement during shod condition. Therefore, since this study did not find any difference between UGG and barefoot condition, it may be possible that all participants in the current study exhibited the same ankle joint movement profile as the low pronation group from Morley's study. These participants had a minimal ankle pronation to begin with in barefoot condition, so with a type of flat footwear such as UGG, they do not cause excessive pronation. A person with a middle pronation or a high pronation ankle profile may be different and future studies are warranted to evaluate the effects of UGG boots on various ankle pronation profiles.

There are some limitations in the study that should be considered. In this study, three joint reflective markers were placed on the mid-calf, Achilles tendon, and heel to measure the subtalar joint movement. This technique is slightly modified from Morley et al. (2010)'s study. Having the subtalar joint covered by the boots during

the testing and data collection may be a limitation, with potential to alter proper location of the joint marker on the subtalar joint. However, the results of this study showed consistent and similar findings on ankle's pronation/eversion movement with Morley et al. (2010) and Price et al. (2014)'s studies. In this study, the ankle's pronation/eversion movement was 170.8 ± 8.5° for barefoot and 174.3 ± 4.1° for UGG. Morley et al (2010) reported the maximum ankle's eversion movement was 6.3 ± 2.6° for barefoot and 6.7 ± 2.1° for shod condition, which is equivalent to the current study's 173.7 ± 2.6° for barefoot and 173.3 ± 2.1° for shod condition. Additionally, Price et al. (2014) reported maximum ankle's eversion movement during stance was -4.3 ± 2.1° for barefoot and -4.4 ± 1.9°, which is equivalent to the current study's 175.7 ± 2.1° for barefoot and 175.6 ± 1.9° for shod condition. The slight difference in the ankle eversion between this study and the previous studies may be because this study examined the ankle's eversion between this study and the previous studies may be because this study examined the ankles eversion angle at the instant of entire foot contact with the ground rather than evaluating the ankle's maximum eversion angle, as mentioned. Another limitation of this study is that the UGG boots used were brand new. Typically, a person wears UGG boots for enough time that they will mold to the shape of their foot, which can be the root of some of the problems the researchers had initially expected to see throughout the course of this study. As some sources and wearers describe, the UGG boots have a somewhat malleable bottom sole. This sole has the potential to begin to change into the shape of the wearer's foot. Dr. Ian Drysdale, who is the head of the British College of Osteopathic Medicine, discussed that the foot will slip around inside the flat shoe and can cause it to fall

towards the instep of the foot with each additional step. He discusses how this can endanger the arch because of the repeated falling and inward motion, the shoe takes that shape and can leave the ankle with pain and future problems (Springer 2012). The slipping of the foot and the shaping of the boot with prolonged wear could be a very interesting area of study. Future studies could consider testing people in their own personal, worn in pairs of UGG boots. This potential study would need certain variables to be pinpointed—including how long the boots have been owned and how much they have been worn. However, looking at those different variables could yield interesting results, possibly mimicking the information Dr. Drysdale pointed out. Another factor to be considered in this study is the speed and the use of treadmill. Everyone walks at a different natural walking speed, making it difficult to pinpoint what would be the most appropriate speed to be used throughout this study. Additionally, the treadmill may not have mimicked the way each participant would have walked on the ground. Therefore, the findings between treadmill and on the ground may be different.

Conclusions

It was hypothesized that because UGG boots are flat footwear lacking medial longitudinal arch support on the bottom of the foot, there would be over pronation in the sublatar joint. This over pronation was believed to be capable of causing injuring and altering the walking gait of the wearer. Ten healthy females participated in this study, and a treadmill speed that closely mimicked natural walking patterns was used to obtain accurate data. The lack of significant data found in this study means that with the given conditions, UGG boots do not limit rear foot motion in the pronation movement.

However, the participants in the study may have low pronation ankle profiles. Additionally, the participants wore brand new UGG boots for a short period of time. Therefore, future studies are warranted to test participants with various ankle pronation profiles and also to examine the long term effect of wearing UGG boots.

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About the Author

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Burdens of the Body Weigh More than We Know: How Weight Impacts Judgments of a Simulated Vehicular Pursuit

HOLLY LONERGAN

Abstract

The purpose of this project was to replicate research on embodied cognition and extend it to the judgments related to law enforcement, specifically decisions associated with the use of force. Excessive use of force by police officers is often characterized as an act driven by racism and ethnic and social biases. However, decisions are far more complex and are shaped by many psychological and environmental factors. The current study examined how one of these factors, the perception of physical or metaphorical weight, may influence judgments about suspect dangerousness and incident severity. Participants were randomly assigned to one of four conditions in which the experience of weight was manipulated by holding a heavy clipboard, wearing a mock police duty belt, or pinning on a police badge. They watched a video of a police vehicular pursuit, assessed the dangerousness of the event and made judgments about the behavior of the officers and driver. Results showed that Caucasians rated the use of force in the video as more appropriate and tended to have more positive police perceptions than other race and ethnic groups combined. Participants in the police badge and duty belt condition were more correct about the details of the vehicular pursuit and perceived the driver as significantly more dangerous.

Introduction

Each of us makes countless consequential and inconsequential decisions every day, many of which require nearly instantaneous response and are evaluated for their rationality only if the outcomes are sub-optimal. Most of the thousands of decisions we make every day are born more from our immediate abstract and intuitive understanding of the world than from contemplative verbal logic. Much research indicates that behaviors are strongly influenced by environmental information that is perceived and processed implicitly, or without conscious awareness (Bargh, Chen, & Burrows, 1996; Doyen, Klein, Pichon, & Cleeremans, 2012; Huang, Sedlovskaya, Ackerman, & Bargh, 2011; Yee & Bailenson, 2009). The term psychological researchers use to describe the implicit effects of environmental conditions, including physical and sensory experiences, is embodied cognition, which is also sometimes called the "body brain" (Claxton, 2003). Embodied cognition is a type of heuristic, or rule of thumb widely used for decision-making under time constraints, when attentional resources are strained, when personal investment or efficacy is low, and in conditions of uncertainty (Tversky & Kahneman, 1974).

Police officers, who are arguably called upon to make consequential judgments more quickly and immediate-

ly than most decision-makers, are also among the most criticized for using heuristics over reflective, thoughtful processes. Accusations of racism and ethnic and social biases are common when police use-of-force decisions are routinely subject to post hoc evaluations by experts and laypersons with very different experiences and understandings of the world, particularly when all or part of the incident appears on social media for public scrutiny. However, thoughts, decisions, and behaviors are influenced by far more than individual differences in attitudes. The relevance of heuristics to police officer decision-making has been examined, but there is no literature to date on the effects of embodied cognition on use of force, which is the focus of the current study.

Literature Review

That humans make most decisions and perform many behaviors automatically and without conscious awareness was persuasively demonstrated by Bargh, Chen, and Burrows (1996) who found that peripheral cues and unrelated tasks were sufficient to automatically activate subsequent behaviors. For example, those exposed to rude words (e.g., interrupt, bother, intrude, etc.) during a sentence completion task were later more likely to interrupt a researcher's conversation and rate the researcher as rude and impolite. Similarly, those with sentences that included words stereotypical of the elderly (e.g., Florida, gray, retired, etc.) later walked more slowly to an elevator. The same authors also found that subliminal exposure to a black-and-white photograph of an African American face (versus a Caucasian face) prompted a more hostile response to a fictitious computer crash. The effect was found regardless of explicit racial attitudes; those who consciously expressed no racial prejudices were just as likely to be hostile as par-

ticipants who scored high in racism.

To study the effects of the types of non-conscious biases demonstrated by Bargh, Chen and Burrows (1996) on police officer decisions, Payne (2001) designed a video game in which a photo of a face (African American or Caucasian) would be a signal to pay attention to the second picture, which was to be classified as either a gun or a tool by pressing the appropriate key. The 31 Caucasian undergraduate participants more accurately and quickly identified guns preceded by an African American face and tools preceded by a white face. In a follow-up study with the addition of a time constraint, participant errors revealed biases. The 32 Caucasian undergraduates were more likely to mistake a tool for a gun when they had seen a black face prior to making their classification.

Correll et al. (2002) replicated and extended Payne's 2001 study by adding a decision to "shoot" the target in a video game that depicted Caucasian and African American models who stood in front of various backgrounds holding either a gun or some other object. Participants made decisions to shoot African American targets more quickly, regardless of the presence of a gun, and were less likely to shoot armed and unarmed Caucasian targets. In a series of three follow up studies, the time to respond was reduced, individual difference scales to assess prejudice were added, and a more diverse population was solicited. When participants had less time to respond, they more accurately identified African Americans as armed and chose to shoot with greater frequency, and the effect was stronger for those who associated African Americans with violence and aggression.

In a later study, Correll (2007) measured the effects of racial cues in a shoot/don't shoot video game that simulated the split-second decisions that a police officer might make. In the first two studies, participants were racially diverse police officers and civilians who saw an armed or unarmed African American or Caucasian men in various natural surroundings. Police officers were significantly less likely to hit the "shoot" button than civilians, and were more accurate in the identification of a weapon. Only the community group showed significant racial bias in the decision to shoot. There was no relationship between explicitly measured racial biases (survey responses) and accuracy or response speed.

Stereotypes are heuristics, or rules of thumb that allow us to make quick decisions with little cognitive effort (Chaiken, 1980). They lead to judgments about category membership based on superficial qualities over statistical frequencies (Tversky & Kahneman, 1977; 1983). In an example of how stereotyping may influence police work, Kahn, Goff, Lee, and Motamed (2016) asked naïve participants to rate the booking photos from 177 randomly selected cases on the following traits: age, injury severity, racial stereotypicality, and racial classification. Racial stereotypicality was predictive of less use of force in arrests of Caucasian suspects, but was not predictive in arrests of African American suspects, a finding the authors suggest may reflect a pro-white bias and police concern with protecting stereotypically representative Caucasians. Reisig, McCluskey, Mastrofski, and Terrill (2004) found evidence that suspects also engaged in heuristic thinking that may ultimately influence police use of force. The authors studied twelve police beats with similar qualities located in Indianapolis, Indiana and St. Petersburg, Florida. They found that

disrespectful reactions to officers from African American suspects were more likely in the presence of an audience and in low-income neighborhoods, suggesting to the authors that African American suspects may react according to their own stereotypes about police.

While it is tempting to suggest that heuristics are an example of lazy thinking or decision makers' disregard for accuracy, it is important to recognize that heuristics are a form of world knowledge gained from experience and observations (Higgins, 1989; Smith, 1984), including information from bodily sensations and movement (Alban & Kelley, 2013). Many researchers have found evidence that concrete experiences of the body act as heuristics by activating knowledge structures that shape cognition (memory, attention, emotion, perception, judgment, decision-making), behaviors, and body movements (Zhong & Leonardelli, 2008; IJzerman & Semin, 2009; Zhong, Bohns, & Gino, 2010; Lee & Schwarz, 2010; Proffitt, 2005; Jostmann, 2005). One of the most frequently cited and well-known examples is the "facial feedback hypothesis" (Laird, 1984; Tourangeau & Ellsworth, 1979), or the influence of facial expression on responses and evaluations. For example, activation of smile muscles (by holding a pencil between the teeth) or frown muscles (by holding a pencil between the lips), reliably predicts the "funniness" ratings of comics (Flack, 2006; Schallhorn & Lunde, 1999, among others).

Recent studies of heuristics related to feedback from the body to the mind, or embodiment, includes work on the effects of temperature cues on social judgments. Participants who held a warm drink have been found to rate their own relationships as more intimate

(IJzerman & Semin, 2009), regard others as having a warmer personality (i.e., generous, caring) (Williams & Bargh, 2008), and more inclined to choose a gift for a friend instead of for themselves (Williams & Bargh, 2008) than those who held a cold drink. In other studies, manipulations of arm movements have been found to influence evaluations. For example, those who pulled something toward themselves (arm contraction) later reported greater liking for the object than those who had pushed it away (arm extension) from them (Cacioppo, Priester, & Berntson, 1993). Chen and Bargh (1999) found that arm contraction improved subsequent reaction times to positive stimuli, while arm extension facilitated responses to negative stimuli.

More relevant to the current study is research on the effects of weight on thoughts and decisions, and extending embodied cognition on weight to law enforcement. Researchers have argued that over time we learn that lifting and moving heavier objects requires more physical effort, and most adults use and understand weight as a metaphor for both cognitive effort (something can weigh on our mind, can be a weight on our shoulders) and for value or importance (issues can be weighty). For example, Proffitt and colleagues (1999; 2005) assigned some participants to wear a heavy backpack when they rated the distance and steepness of a hill. The hypothesis that the estimates would be a function of geometric properties, actual distance, and the amount of effort required to travel up the hill, was supported. Participants who wore a heavy backpack perceived hills to be steeper and distances to be longer than the actual measurements. Jostmann, et al. (2009) also found that carrying physical weight impacted assessments. In a series of studies the authors asked participants to stand

while completing a survey attached to a heavy or light clipboard. In the first study, participants estimated the value of foreign money by indicating how many of a domestic currency would be needed to purchase each stated quantity of foreign currency. Those who held the heavy clipboard rated the value of foreign currency more highly than those who held a lighter clipboard. In a followup study, undergraduate participants assigned to the heavy clipboard condition rated student opinions as more important in contributing to university policy decisions. In the third study, students first provided judgments of their satisfaction with the city's mayor (i.e., competent, likeable, trustworthy) and then rated the city in which their university was located. City attitudes were positively correlated mayor evaluations, but only in the heavy clipboard condition. In Study 4, participants rated the extent to which they agreed with strong and weak arguments in favor of a controversial subway that was under construction in their city and then rated how confident they were in their own opinion regarding the subway. While all participants agreed more with the strong arguments, those who held the heavy clipboard showed greater agreement with strong arguments, less agreement with weak arguments, and were more confident in their own opinions about the subway project.

The embodied effect of clothing, including its color, has also been investigated. For example, Frank and Gilovich (1988) found that undergraduates asked to wear a black sports jersey subsequently chose to engage in more violent and aggressive activities than those given a white sports jersey. In a field study on police uniform color, Johnson (2013) measured police aggression and aggression between police officers and citizens using

data from the Federal Bureau of Investigation and the U.S. Bureau of Justice, as well as U.S. Census Bureau statistics for 250 medium- to large-city police departments (cities of 100,000 to over 8 million people, with police departments of 87 to 38,000 officers). The rate of assaults on police officers (per 100 officers) for each city, the rate (per 100 officers) at which police officers shot and killed citizens, substantiated complaint rate (per 100 officers), and unsubstantiated complaints were compared. Police departments with dark uniforms collectively had lower levels of aggression on all four dependent measures than police departments with lighter uniforms, but only the higher mean rate for the killing of citizens by dark-uniformed police departments was statistically significant.

Adams and Galinsky (2012) introduced the term "enclothed cognition" to describe the form of embodied cognition specifically related to the "systematic influence of clothes on the wearer's psychological processes and behavioral tendencies" (p. 919). In three studies, the authors found support for their hypothesis that the symbolic meaning and the physical experience of wearing a lab coat would influence task attention and reduce errors. In Study 1, participants who wore a lab coat condition made about half as many errors in an implicit associations task. In Studies 2 and 3, participants examined pairs of pictures and, as quickly as possible, found as many of the four differences between them. Those who wore a lab coat described as a "doctor's coat" found more differences than participants who wore the same lab coat described as a "painter's coat" or those who simply saw or described the special meaning of a "doctor's coat." Fredrickson, Roberts, Noll, Quinn and Twenge (1998) also found support for enclothed cognition. The authors found that women assigned to wear a bikini reported feeling more ashamed, ate less, and performed worse on a math test.

The current study was designed to replicate and extend the above research on the embodiment of weight and clothing and to answer Johnson's (2013) call for research into the influence of clothing and color within the criminal justice system, which "is currently lacking and strongly encouraged" (p. 242). Johnson specifically noted the need for experimental research on police uniform and citizen behavior that controls for situational factors, including offense severity and the behaviors and demeanors of the officers and citizens involved. We expected to replicate findings on the effects of physical weight on judgments of the physical environment, and value and importance of abstract concepts (Jostman, 2009; Proffit, 1999). We also expected to replicate the effect of uniform on attention to detail (Adams & Galinsky, 2012). We extended prior research by experimentally manipulating the experience of physical weight and uniform clothing on participant's judgments of police officer use of force.

Participants judged an ambiguous (no predetermination of guilt) vehicle pursuit (filmed from an officer's body camera) while they experienced levels of physical weight and metaphorical weight while responding to the stimuli. Physical weight was manipulated in two ways. To test the effect of physical weight alone, and to replicate Jostmann, et al. (2009), some participants held a heavy clipboard. Others wore a heavy-duty belt similar to what is worn by police officers in the field, who carry about 20 pounds of equipment (flashlight, radio, weapon, baton, gloves, and pepper spray;

Kozlowski, 2010) as part of their uniform. Officers also wear a badge which is an emblem of their status and is metaphorically, but not physically, weighty. In the current study, a police badge was worn to stimulate thoughts related to the metaphorical weight (authority, importance, and responsibility) of law enforcement. In one condition, participants wore both the duty belt and the badge, the combined weight of which was meant to represent the physical and metaphorical weight typical of police work.

The dependent variables were judgments of the event's (vehicle pursuit) dangerousness, evaluations of police, and accuracy of memory for event details. It was expected that responses would increase incrementally as follows: control condition (no added weight, lowest evaluations), metaphorical weight (wearing a police badge), physical weight (holding a heavy clipboard) and both metaphorical and physical weight simultaneously (wearing a badge and gear similar in weight to a police uniform, highest evaluations).

Method
Participants
Seventy-one (21 males, 50 females) introductory psychology students, aged 18 to 44 ($M = 20$), were recruited from the Psychology Department subject pool in the Fall 2016 semester. All reviewed consent materials before they began and were thoroughly debriefed at the end of the study. Participants were randomly assigned to one of four conditions: Control condition (no added weight), Condition 2 (metaphorical weight, wearing a police badge), Condition 3 (physical weight, holding a heavy clipboard) and Condition 4 (both metaphorical and physical weight simultaneously, wearing a badge and gear similar in weight to a police uniform).

Materials
The materials were a weighted clipboard, a badge, and a mock duty belt. Although a police officer's duty belt typically weighs 20 lbs, the belt that the participant wore weighed 12lbs to avoid any strain or injury of the participant. There was a flashlight, radio, gloves, and (fake, but realistic) weapons, including a gun, baton and pepper spray. The clipboard weighed almost 1lb. The badge was a heavy-gauge metal, 6-point sheriff's badge. The sheriff badge condition was included to measure the metaphorical weight of police work and distinguish it from the metaphorical weight prompted by wearing a police duty belt. The visual stimulus was a three minute video obtained from the website, Youtube (RawLeak, 2015). This video showed a high speed vehicular pursuit from the perspective of an officers' body camera. The survey packet included factual and opinion questions about the video and perceptions of police behavior. There were four questions related to driver dangerousness (i.e., "the citizen's car hit a police car"), two about police fairness (i.e., "the officer made decisions about what to do in fair ways"), four about police use of force (i.e., "the officers were excessively violent here"), five global attributions about police behavior (i.e., "the officer should be reprimanded or punished in some way"), and 13 factual questions (i.e., "an officer allowed the driver to stop before making decisions").

Procedure
Participants completed the study individually. In an attempt to minimize effects of experimenter gender, race, dialect or appearance, participants did not personally interact with the researcher. A receptionist (who

appeared to be separate from the entire study) showed the participant to the experimental room, which was equipped with a large screen television. The researcher spoke with the participants through an intercom and could view them through the one-way mirror. Participants began by sitting at a table to review consent materials and to complete a brief demographic survey. All participants stood while responding to the video. Participants were randomly assigned to condition ($n = 18$ for all conditions). Those in the Control Condition were instructed to stand at a small table placed in front of a large screen television. In Condition 2, participants were told to pick up the weighted clipboard and stand facing the television screen. In Condition 3, participants were instructed to pin on the police badge and then stand at the table. In Condition 4, participants were asked to pin on a police badge, put on the mock duty belt, and stand at the small table. Next, the experimenter displayed the vehicle pursuit video, after which participants responded to the subjective and factual questions.

Results

Subjective video survey items related to driver dangerousness (4), police fairness (2), use of force (4), global attributions of positive police behavior (5) and facts recalled in favor of police (13), were combined into single measures for each category. The 13 factual items were also scored for correctness and combined into a single measure of accuracy. The subjective measures were positively correlated with each other. Only one measure, facts recalled in favor of police, was significantly correlated with accuracy, and that relationship was negative. The more participants interpreted the facts in a manner favorable to the officers involved, the less likely they were to be correct (see Table 1 for in-

tercorrelations).

There were no gender differences in subjective or factual scores; however, Caucasians ($n = 45$) were significantly more likely to judge the use of force depicted in the video as appropriate ($M = 5.5$, $SD = .1$) than those of other ($n = 24$) race and ethnic groups combined ($M = 4.8$, $SD = .2$; $F (1, 67) = 6.12$, $p = .01$). Participants did not demonstrate racial bias in rating the race of the driver; participants in all conditions indicated that it was equally likely that the driver was Caucasian, African American, Hispanic or "Other."

There was no support for the hypothesis that judgments of the event's dangerousness, evaluations of police behaviors, and accuracy of memory for event details would increase incrementally as metaphorical and physical weight increased, so the control (no added weight), metaphorical weight (wearing a police badge), and physical weight (holding a heavy clipboard) conditions were collapsed and compared to the badge and duty belt condition for subsequent analyses.

Participants in the police badge and duty belt condition judged the driver to be significantly more dangerous ($M = 5.6$, $SD = 1.1$) than those in the other conditions ($M = 4.8$, $SD = 1.6$; $F (1, 69) = 4.12$, $p = .04$); however, there were no significant between group differences in subjective evaluations of police or interpretation of facts. The expected differences in factual accuracy also did not materialize, with one exception. In an open-ended question, participants were asked to estimate the length of the car chase. Participants in the police badge and duty belt condition estimated the elapsed time as significantly shorter ($M = 4.5$ min, $SD = 5.4$) than those in

the other three conditions ($M = 11.2$ min, $SD = 13.6$). The video lasted 3 minutes, 12 seconds (3.2 minutes). The estimate made by those in the police badge and duty belt condition was more accurate and was not significantly different from 3.2 ($t(16) = .98$, $p = .34$), while the mean time estimates were significantly less accurate and different from the actual time in the other 3 conditions ($t(52) = 4.25$, $p < .001$).

Discussion

The positive relationships between subjective measures of the behaviors depicted on the video are indicative of the biased nature of perception. Those who judged the driver to be more dangerous also made other judgments in favor of police. The negative correlation between subjective interpretation of the facts and factual accuracy is not surprising, given the strong effects of stereotypes and heuristics, which are widely used under conditions similar to those required in the study: decisions made under time constraints, when attentional resources are limited, when personal investment or efficacy is low, and in conditions of uncertainty (Tversky & Kahneman, 1974). The video was chosen specifically because of its ambiguity and it appeared that those who used the representativeness heuristic, by judging the likelihood the driver belonged to the group "criminal" based on the population stereotype (evading police), extended that judgment to negative evaluations of the driver's intent and positive evaluations of police responses and behaviors.

The implicit racial biases found by Correll et al. (2002) and Payne (2001) in their studies of decisions related to criminal behavior were not found. There was no suggestion that participants applied a racial stereotype to the driver, as most assigned equal likelihood to the possibility that the driver was Caucasian, African American, Hispanic or Other. Biases were evident in subjective evaluations of the use of force shown in the video, however. That Caucasians were significantly more likely to judge the use of force depicted in the video as more appropriate than those of other race and ethnic groups combined was not surprising and may have affected our ability to find more significant between groups effects. Unfortunately, there were not enough participants to analyze the data by both condition and participant race and ethnicity.

The experimental results suggested only partial support for our embodied cognition hypotheses. The effects were demonstrated in those who wore both the police badge and duty belt, but the effect was limited to evaluations of event dangerousness. Those in the combined badge and belt condition judged the driver to be significantly more dangerous. This finding supports Proffit (1999) and Jostmann's (2009) results on the effects of physical weight on environmental and value judgments, and extends it to evaluations relevant to police officer decisions. In addition, those who only wore a police badge or held a clipboard did not give incrementally increased ratings for event dangerousness or more positive evaluations of police behaviors. There were just 18 participants in each condition, not enough to include individual differences in preexisting attitudes, or race, in the analyses. This limitation may have hindered our ability to find other effects.

We had expected to find support for Adams and Galinsky's (2012) enclothed cognition hypothesis that wearing a uniform associated with attention to detail would

improve factual memory. We did find partial support in that participants in the police badge and duty belt were significantly more accurate in their estimates of elapsed time. The other groups guessed that the chase had lasted almost three times as long as the actual 3.2 minute duration, and over twice as long as those in the badge and belt condition. There were no other significant between group differences in subjective evaluations of police or interpretation of facts or in factual accuracy. Perhaps a stronger manipulation, such as asking participants to put on a police uniform shirt, would have resulted in a more persuasive replication and extension of previous enclothed cognition research.

This study and other embodiment research has only begun to reveal the complex nature of embodied cognition as it applies to the criminal justice field. While the wearing of a police badge and duty belt appeared to influence some cognitions, the effects were not as strong as predicted. By extending embodied cognition to judgments related to everyday police officer decisions we have set the stage for more future studies and answered Johnson's (2013) call for more controlled experimental research on the influence of clothing and color within the criminal justice system. If, as the current study suggests, police officers could be implicitly influenced by the physical and metaphorical weight of their uniforms, society, the legal system, and police officers themselves should be educated about the effect. Given the current socio-political climate surrounding police use of force, much more research is still needed.

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About the Author

Holly Lonergan is a graduating senior majoring in Psychology and Criminal Justice. Her research project was completed in the summer of 2016 under the mentorship of Dr. Elizabeth Spievak (Psychology) and made possible with funding provided by the Adrian Tinsley Program Summer Research Grant. Holly presented this project in November at the 2016 Annual Meeting of the American Society of Criminology in New Orleans, Louisiana. She plans to continue this line of research while pursuing graduate studies in Criminal Justice.

Table 1

	1	2	3	4	5
1. Dangerousness of Driver	--				
2. Appropriate Use of Force by Police	.549**	--			
3. Police Fairness	.283*	.475**	--		
4. Positive Attributions toward Police Behavior	.334**	.723**	.400**	--	
5. Facts Recalled in Favor of Police	.044	.337**	.429**	.265*	--
6. Video Facts Chosen Correctly	-.015	-.039	-.105	.171	-.623**

Note: N = 71
** Correlation is significant at the 0.01 level (2-tailed).
*   Correlation is significant at the 0.05 level (2-tailed).

Objective Measurement of Sleep by Smartphone Application: Comparison with Actigraphy and Relation to Cognition, Mood, and Self-Reported Sleep

TAYLOR MAYNARD

Sleep duration and quality have a considerable impact on countless aspects of individuals' lives. Sleep deprivation can be extremely taxing on one's overall health. This is in large measure due to impairment of cognitive functions, such as psychomotor and processing speed, executive attention, higher cognitive abilities, and working memory (Goel, Hengyi, Durmer, & Dinges, 2009). The National Heart, Lung, and Brain Institute (2012) identify myriad reasons as to why sleep is important to health, such as how it protects and improves physical health, mental health, safety, and overall quality of life.

A human spends one third of their life asleep; this equates to 25 years spent sleeping (Heppner, 2015). Wilckens, Erickson, and Wheeler (2012) state that deep sleep (also known as slow-wave sleep) can substantially benefit the functioning of the prefrontal cortex (PFC) and can consequently contribute to normal cognitive functions such as working memory, inhibition, and controlled memory processes. This idea supports the hypothesis that executive functioning associated with networks of the PFC would be the most sensitive to subjective variations in sleep (Wilkens et al., 2012). Given that PFC networks have been reported to be the most sensitive to individual variations in sleep, it is important to note how detrimental clinical sleep disorders can be for individuals suffering from them. Approximately 70 million Americans are affected by sleep disorders; 90 individual sleep disorders having been identified in the literature (Colten & Altevogt, 2006). Sleep disturbances that result in impairments during the daytime are frequently reported in adults (Stepanski, Rybarczyk, Lopez, & Stevens, 2003) and sleep deprivation has been shown to be detrimental to cognition (Goel et al., 2009) and even motor sequence acquisition in younger adults (Appleman, Albouy, Doyon, Conin-Golomb, & King, 2015). Bonnet (1986) reported that poor quality of sleep or lack of long periods of uninterrupted sleep produces adverse effects on cognitive performance and motor functioning during the daytime hours; in turn, this sleep deficit can significantly contribute to the occurrence of automobile accidents, lack of concentration, memory impairment, proper limbic system functioning, and the inability to complete daily tasks. Baglioni, Spiegelhalder, Lombardo, and Riemann (2010) claim that disturbances in sleep have yielded a number of detriments, including emotional reactivity and poor emotion regu-

lation that is problematic to one's mental health. Monitoring sleep could easily become an integral part of treatment in the field of rehabilitation psychology. The standard methods used to evaluate sleep variables such as total sleep time (TST), sleep efficiency, and stages of sleep have blossomed in sync with technological advancement over the years, beginning with the evolution of polysomnography (PSG) throughout the 1960s and 1970s (Haba-Rubio & Krieger, 2012), actigraphy in 1988 for the United States military (Actigraph, 2016), and finally the incorporation of accelerometer technology in smartphones during recent years.

Polysomnography (PSG)

Today, PSG continues to be the gold standard for objective measurement of sleep. PSG consists of continuous monitoring of variables of neurophysiology and cardio respiration. PSG sleep studies are typically conducted over the span of one night for the purpose of monitoring both disturbed and normal sleep (Bloch, 1997). Since 1997, it has become increasingly common for PSG sleep studies to require more than just one night of sleep monitoring (e.g, Jarrin et al., 2016). Despite how common overnight sleep studies are, some researchers are skeptical of whether external factors (for example, a laboratory setting) can impact the validity of study results. For instance, Iber and colleagues (2003) questioned the external validity of sleep studies and postulated that body position (while in bed), alcohol consumption, sleep stage distribution, and sleep duration may all play a significant role in subjects' sleep patterns and quality. Iber et al. (2003) also state that within-laboratory or within-home sleep monitoring as well as the degree of supervision of monitoring could potentially affect physiologic parameters of sleep. From a broad-

er perspective on PSG that falls outside of sleep apnea studies, it is imperative to look not just at the effects of location on data outcomes, but also on individual comfort levels that could consequently affect the data. Siversten et al. (2006) asserts that PSG can be invasive, expensive, and time-consuming for some. Employing wrist actigraphy technology can be a comfortable and inexpensive alternative to traditional PSG monitoring, depending on patients' needs and preference.

Actigraphy

Actigraph technology can be set apart from PSG monitoring, as it allows the convenience and comfort of wearing the device as a watch-like bracelet on the non-dominant wrist or ankle, directly in contact with the body, and within one's typical environment, thus, providing significant external validity. Actigraphy has been utilized to measure sleep for the purpose of research for over two decades (Mantua, Gravel, & Spencer, 2016). An actigraph is constructed with an acceleration sensor that can translate physical motion into a numeric representation measured in epochs (e.g., minutes; Sadeh, Hauri, Kripke, & Lavie, 1995). Furthermore, the actigraph is expedient in the way that the data can be easily extracted from the bracelet and transferred onto a computer via an actigraph dock and USB adapter. Actigraphs are waterproof and thus do not need to be removed at any point during studies, allowing for continuous data collection (Sadeh et al., 1995). A recent study on the effectiveness of actigraph technology demonstrated that actigraphy data corresponds significantly with PSG data in a population of both young and older adults (Kosmadopoulos, Sargent, Darwent, Zhou, & Roach, 2014). Welk, McClain, Eisenmann, and Wickel (2007) posit that the accelerometers built with-

in actigraphs offer promising calculations of movement and exerted energy, and since the 1980's, researchers have been employing actigraphy as a reliable means of quantifying physical activity (Dinesh & Freedson, 2012).

Despite supportive and validating research on actigraphy technology, Verbeek et al. (1994) proposed that actigraphy has been shown to overestimate TST in comparison to PSG. However, Martin and Hakim (2011) claim that in recent studies, actigraphy bracelets have been valuable in calculating the TST of an individual as well as the efficiency of sleep.

Smartphone Applications

Today, there is a variety of free smartphone apps that are used to monitor individuals' health, diet, fitness, smoking habits, etc.; likewise, wearable technology such as the Fitbit (Fitbit, Inc., San Francisco, CA, USA) is becoming ubiquitous in Western society (Zambotti et al., 2016). Apple, Inc. proclaimed in a 2009 television commercial posted on YouTube by user CommercialKid et al. (2009) that "There's an app for that," regarding the creation of countless smartphone applications (many of which were free of charge) that yielded a plethora of uses (including healthcare) to people around the world (Bhat et al., 2015). Consequently, the creation of smartphone apps that monitor and evaluate the quality of one's sleep and its duration have been marketed through the app stores for use on smartphones and other mobile devices, such as smartwatches and tablets. Batista and Gaglani (2013) suggest that the potential for a new frontline of clinical practice and research is being offered by the prevalent use of advanced smartphone technology. One such example of a smartphone appli-

cation that could be utilized in both healthy and clinical populations is the Sleep Time smartphone app (Azumio, Inc., Palo Alto, CA, USA). Bhat and colleagues' 2015 study compared sleep efficiency, sleep latency, and light sleep/deep sleep percentages recorded through the Sleep Time app to those recorded through PSG. As correlations between sleep data collected through the app and through PSG were poor, further research could compare both sleep efficiency and TST recorded through the app to data recorded through actigraphy technology. Contingent upon future research findings, the Sleep Time app could be a cost-efficient and innovative alternative to the expensive and invasive use of overnight PSG monitoring or even the in-home use of clinical devices like actigraphy.

Certain clinical populations may prefer to use smartphone applications that record their sleep data, rather than to fill out a daily sleep diary when asked to by their doctor. Likewise, those who wish to have their sleep data in real time and at their disposal might prefer a smartphone app to actigraphy, which does not immediately display a previous night or week of sleep without first returning to a doctor's office or research laboratory for data extraction. There are a variety of clinical populations that could benefit from technological sleep tracking methodologies, such as adults with insomnia, narcolepsy, sleep apnea, or other sleep disorders. Older adult populations with cognitive deficits or neurodegenerative diseases could also make use of smartphone applications that track their sleep, as poor sleep quality is often a co-occurring symptom of diseases such as Alzheimer's and Parkinson's disease (Vitiello, Poceta, & Prinz, 1991).

Effects of Sleep on Cognition and Mood

It has been suggested that both sleep quality and TST can be culprits of weaker waking neurobehavioral functioning, such as slowed working memory, reduced cognitive throughput, lapses of attention, and depressed mood in both middle-aged and older healthy adults (Banks & Dinges, 2007; Sutter, Zollig, Allemand, & Martin, 2012). Moreover, Van Dongen et al. (2003) and Wilckens et. al (2014) demonstrated that sleep continuity and TST impact executive functioning across the lifespan, while Yoo, Hu, Gujar, Jolesz, and Walker (2007) showed that sleep is integral for encoding memories and consolidation following learning. In addition, Baglioni et al. (2010) and Leotta, Carskadon, Acebo, Seifer, & Quinn (1997) conjectured that sleep deprivation and fragmented sleep are associated with negative emotional consequences, such as fluctuations in emotional reactivity.

Current Project

The current project compared data collected objectively by the Sleep Time app (Azumio, Inc., Palo Alto, CA, USA) to data recorded from actigraphy bracelets worn by participants recruited from individuals known to members of Boston University's Vision and Cognition Laboratory. Sleep diaries from the National Sleep Foundation as well as self-report questionnaires were utilized to gather subjective data from participants. The primary variables of interest were TST and sleep efficiency; both the Sleep Time app and actigraphy bracelets monitored and recorded time asleep and calculated sleep efficiency as a percentage. Furthermore, differences between objective data generated from the Sleep Time app and actigraphy as well as subjective self-report sleep measures completed by participants

were examined. Participant-completed sleep diaries were used in conjunction with the Sleep Time app and actigraphy to control for potential malfunction or non-compliance with either the actigraph or the app. Subjective sleep measures were used to account for when actigraphy overestimated TST in individuals who may have had trouble falling asleep at night but remained motionless in their beds (Martin et al., 2011). Thus, self-report measures were integral to lending the most accurate data possible to the project. Lastly, participant scores from two assessments of executive functioning and two self-report measures of mood were analyzed to examine a potential interplay of sleep quality and sleep duration with cognition and mood.

Hypotheses for the study include the following: 1) Self-report information recording TST as obtained by sleep diaries will differ from objective information on TST as collected by the Sleep Time app; 2) Self-reported sleep quality will correlate with performance on tasks of executive functioning and working memory in addition to self-reported scores of perceived depression or anxiety; 3) There will be a significant difference between means of TST and sleep efficiency as recorded by the Sleep Time app and actigraphy bracelets. Comparing means on the two variables of sleep could lend credence to the idea that the Sleep Time app can be used as a valid objective method of measuring sleep if no significant differences are calculated.

Method
Participants

The current project collected and examined both subjective and objective data from 29 healthy adult volunteers ranging from 20 to 67 years (M age = 26.8 years,

SD = 11.7 years). The project was publicized through convenience sampling (i.e. word-of-mouth and social media technology). Screening questionnaires were administered to interested adults to determine individual eligibility. If screened individuals were free of acute or chronic medical conditions and sleep disorders (e.g. obstructive sleep apnea, restless leg syndrome, clinical insomnia, etc.), and were not taking any prescription or over-the-counter sleep medications, they were queried and included in the study. Additionally, participants had access to the daily use of an iPhone with IOS 8.0 or later for the daily use of the Sleep Time app (a free app download in the Apple store). Written informed consent of each participant was obtained on the day of their first study visit. This study was approved by the Institutional Review Board (IRB) of Boston University.

Methods and Procedures

In addition to filling out a daily sleep diary from the National Sleep Foundation and using the Sleep Time app, 19 out of the 29 participants also agreed to wear an actigraphy bracelet for one week. All 29 participants returned for a second study visit; five self-report questionnaires and two cognitive tasks were administered. Among the five questionnaires was an exit questionnaire that reflected the app's feasibility and likelihood of individual use in the future. Each of the other questionnaires and the two cognitive tasks are further described below.

Self-report measures of mood.
Beck Depression Inventory II (BDI-II).
The BDI-II was administered upon each participant's second study visit. This 21-question self-report mood metric of depression was employed to gather data on

perceived symptoms of depression; each answer provided is scored on a scale of 0-3. The dependent variable of the BDI-II is the total score out of 21 questions. A score range of 14-19 suggests that the individual experiences mild depression, while a score of 29-63 suggests severe depression.

Beck Anxiety Inventory (BAI).
The BAI was also completed by participants during the second study visit. The BAI is a 21-question self-report mood metric of anxiety, utilized to gather data on subjective symptoms of anxiety; each answer provided is scored on a scale of 0-3, with a score of 0 indicating that the individual does not experience a specific symptom of anxiety at all, while a score of 3 indicates that individual is frequently bothered by a particular symptom. The dependent variable of the BAI is the total score out of 21. A score of 0-9 suggests minimal anxiety while a score of 30-63 suggests severe anxiety.

Self-report measures of sleep.
Epworth Sleepiness Scale (ESS).
The ESS is a questionnaire that provides subjective information about one's perceived daytime sleepiness across eight different situations of everyday life, such as reading, watching TV, or being in a car during traffic. Participants rate themselves on a scale of 0 ("would never doze") to 3 ("high chance of dozing") across 8 situations of everyday life. The ESS asks for responses that reflect the most recent way of living. Each test's 8 responses (0-3) are totaled (dependent variable). Any total score over 10 signifies the presence of excessive daytime sleepiness, indicating the possibility of a clinical sleep disorder.

Pittsburg Sleep Quality Index (PSQI).

The PSQI is a 19-item self-report questionnaire that collects subjective information about participants' sleep quality over the course of the past month. The global score of the PSQI can fall in the range of 0-21, and is calculated through 7 component scores, with each question weighted on an interval scale of 0-3. The lower an individual's score, the better their suggested sleep quality. The current study compared general sleep quality data as reported a single PSQI question (about overall sleep quality) to performance on cognitive assessments.

Measures of executive functioning.
Letter-number sequencing.

Letter-Number Sequencing is a cognitive measure from the Wechsler Adult Intelligence Scale IV (WAIS-IV) that assesses participants' attention, concentration, short-term auditory memory, sequential processing, memory span, and mental manipulation. Individuals first listen intently to the assessor as they read aloud a random sequence of letters and numbers; the individual is instructed to repeat the sequence back to the assessor by first listing the given numbers in order, followed by the letters alphabetically. The Letter-Number Sequencing assessment consists of 10 test items with 3 trials per item. Each trial is scored with either 0 or 1 point; a total of 3 points can be earned per test item. Once a score of 0 is earned for an entire test item, the assessment is discontinued and all scores from the completed test items are added together for one sum score (dependent variable), ranging from 0-30. In addition, a longest letter-number sequence score (dependent variable) is calculated, given the total number of letters in numbers in one sequence that the participant was able to accurately

recall; this score can range from 0-8.

Verbal fluency (FAS and category-animals).

The Verbal Fluency (FAS) assessment is one form of the Controlled Oral Word Association (COWA) Test. The Verbal Fluency (FAS) is a free-recall task which instructs individuals to name as many words as they can (excluding proper nouns) beginning with the letters F, A, and S (phonemic processing) within a one-minute time period, excluding any proper nouns or different forms of the same words, such as "big," "bigger," and "biggest." The number of words recorded in 15-second increments of time is also noted in order to easily examine cognitive clustering. In addition, naming as many animals as possible (semantic processing) in a one-minute time frame was included in this assessment to further measure executive functioning. The dependent variable is the total number of acceptable words produced within each one-minute period of time.

Objective measures of sleep.
ActiGraph GT9X Link by Actigraph.

For a continuous period of one week, a subset of 19 out of 29 participants wore the Actigraph GT9X Link watch on their non-dominant wrist. Movement during wake and sleep time was recorded through accelerometer technology 24 hours a day. The dependent measures examined were averages of each participant's 7 days of calculated TST (in minutes) and sleep efficiency (percentage).

Sleep Time (Azumio, inc.) smartphone application.

Sleep Time (Azumio Inc., Palo Alto, CA) was utilized by participants to monitor their sleep. The free version of this smartphone app is available in the Apple App

Store. The current model of this application is 5.28 (updated 05/12/2016). TST and sleep efficiency were monitored and recorded with this app; daily TST minutes and sleep efficiency percentages were averaged for each participant, based on the 7 days of use.

Subjective measures of sleep.
National Sleep Foundation sleep diary.
Provided for free by the National Sleep Foundation, sleep diaries were administered to all participants to fill out each morning and night for 7 days. This accounted for actigraph and Sleep Time app malfunctioning and noncompliance. Self-reported TST and sleep quality were analyzed in addition to certain aspects of participants' daytime and nighttime routines. Each item on the sleep diary was assigned a numerical value (0-7, depending on the kind of question) for use in correlational analyses, and other participant responses were recorded verbatim in the database for qualitative use.

Ease of use and likelihood of future use.
Exit questionnaire.
Participants filled out an exit questionnaire during their second study visit that asked about subjective lifestyle factors such as the type of mattress they use and whether or not they sleep with pets in their beds. In order to gather data on participants' subjective opinions of using the Sleep Time app to monitor TST and sleep efficiency in the future, participants were asked to rate the app's ease of use as well as the likelihood that they would use the app again in the future. Correlational analyses were conducted to examine whether or not ease of use correlated with likelihood of future use as well as to see if age played a role in ease of use.

Data Analysis
TST and sleep efficiency data were extracted from the actigraphs and the Sleep Time app and each participant's 7 days of data were averaged for each methodology. Paired samples t-tests were performed to determine significant differences between TST and sleep efficiency as recorded through actigraphy and the smartphone application. Additionally, Pearson correlation analyses were executed to identify potential correlations between self-reported sleep quality and performance on two cognitive tasks that assessed executive functioning and working memory. The sleep data were also correlated with certain variables from the administered self-report sleep and mood questionnaires.

Results
Subjective vs. Objective TST Data
It was initially hypothesized that self-report information recording TST as obtained by sleep diaries would differ from objective data on TST as collected by the Sleep Time app. A paired samples t-test indicated that there was not a significant difference between TST recorded by the app and TST recorded in the sleep diaries (M = -3.96, SD = 42.1), $t(10)$ = .31, p = .77.

Effects on Cognition and Mood
The second hypothesis predicted that self-reported sleep quality would correlate with performance on tasks of executive functioning in addition to self-reported scores of perceived depression or anxiety. There were no correlations between self-reported sleep quality and performance on cognitive assessments, with the exception of a correlation between self-reported sleep quality as measured by the Epworth Sleepiness Scale and lower scores on the Verbal Fluency animals

category, Pearson's r(27) = -.07, $p < .05$. No significant correlations between scores on the BDI-II and BAI and TST or sleep efficiency were observed, though individuals' scores on the BDI-II and the BAI were positively correlated at the 0.05 level in this population, Pearson's $r(23)= .43$. In addition, age positively correlated with BDI-II scores at the 0.01 level, Pearson's $r(23)= .54$; older participants had higher scores on the BDI-II.

TST and Sleep Efficiency

The third hypothesis stated that TST and sleep efficiency as recorded through the sleep time app would significantly differ from sleep data recorded through actigraphy. A paired-samples t-test showed that the smartphone app overestimated TST when compared to actigraphy, thus yielding a significant difference, $t(18) = 6.64$, $p < .001$. Moreover, a statistical trend indicates that the smartphone app also overestimated sleep efficiency when compared to actigraphy, $t(18) = 2.06$, $p = .055$.

Self-reported App Use

Participants' self-reported ease of use of the smartphone app positively correlated with their likelihood of future use at the 0.01 level, Pearson's $r(27)= .471$. No significant correlations between age, ease of use, and likelihood of future use were found.

Discussion

This study investigated the utility of a smartphone application in monitoring sleep in healthy adults in comparison to actigraphy technology. Potential correlations between sleep efficiency and performance on tasks of executive functioning and mood metrics were also examined.

The first hypothesis stated that self-report information recording TST as obtained by sleep diaries would be significantly different from objective TST data collected by the Sleep Time app. The results of a paired-samples t-test refuted this hypothesis, as there was were no significant differences between subjective data recorded in sleep diaries and objective sleep data collected by the Sleep Time app. This finding suggests that the Sleep Time app, when compared to subjectively recorded TST, is an accurate predictor of TST in a healthy adult population.

The second hypothesis predicted that subjective sleep quality would correlate with performance on tasks of executive functioning and working memory in addition to self-reported scores of perceived depression or anxiety; this hypothesis was not supported by the present study. Contrary to prior literature suggesting that even moderate sleep deprivation can have a negative impact on neurobehavioral and cognitive functioning (Van Dongen et al., 2003), the present study did not find significantly negative effects of TST and sleep efficiency on cognition or mood in a healthy adult population; however, self-reported sleepiness may be related to additional self-report metrics of mood and sleep. Perhaps a larger sample size and broader range of ages and sleep quality would yield results akin to that of Van Dongen and colleagues' findings, as a sample size of 29 may not hold enough power to detect this relationship. In regards to the effect of sleep quality on mood, a 2015 study on sleep fragmentation in a healthy adult population revealed that disruption of sleep continuity (slow-wave sleep) had a significantly negative impact on mood compared to those who delayed their bedtime and consequently had smaller amounts of TST (Finan,
Quartana, & Smith, 2015). Based on Finan and colleagues' findings, later directions in sleep research

should further investigate the effects of slow-wave sleep disruption on mood within clinical populations. Establishing the importance of sleep continuity in both healthy and clinical populations could offer new insights into the development of new sleep-tracking devices as well as improvement of current sleep-tracking devices such as smartphone applications and wrist watches.

The final hypothesis predicted that there would be a significant difference between the means of TST and sleep efficiency as recorded by the Sleep Time app and actigraphy bracelets. Supporting this hypothesis and consistent with the little literature that tests the utility of the Sleep Time app, significant differences were found between the two sleep-tracking methodologies, as calculated through paired-samples t-tests. This suggests that the Sleep Time app is not a valid measure of TST and sleep efficiency in a healthy adult population. Bhat and colleagues (2015) arrived at similar results when assessing the utility of the Sleep Time app in monitoring sleep efficiency and other sleep variables when compared to overnight PSG sleep monitoring. Despite the prior findings, the present study further tested the Sleep Time app by monitoring TST and sleep efficiency and comparing it to data collected through actigraphy.

Future directions in smartphone and wearable, sleep-tracking technology should aim to adopt standard metrics for validation of these devices in order to inform both the research world as well as companies interested in marketing their devices for research and clinical applications. Relatedly, Zambotti and colleagues (2016) stress that there is a pressing need for active communication between the sleep research community and companies that market wearable technology, so that marketing output of these devices can be optimized; this would endorse the implementation of commercial sleep-tracking devices in both clinical and laboratory settings as a cost-efficient option for researchers, patients, and doctors.

Currently, there is insufficient evidence to support that commercial measures of objective sleep such as apps and smartwatches possess the utility for applications in research and clinical settings (Kolla, Mansukhani, & Mansukhani, 2016). Given the consistent overestimation of TST and sleep efficiency recorded through the Sleep Time app in the current study, however, clinical sleep professionals could potentially utilize the app in gathering sleep data on those suffering from sleep disorders. The Sleep Time app may offer a more accurate metric in individuals whose sleep is extremely poor, as recording frequent sleep fragmentation throughout the night in an individual with a sleep disorder could yield a more accurate calculation of sleep time and efficiency.

Conclusion

While potentially appealing to some users, smartphone technology does not provide a sensitive enough metric of common sleep variables in a healthy adult population; future research is needed to clarify the Sleep Time app's objective measurement of sleep as well as its utility within clinical populations and across other models of smartphones. Likewise, objective measurement of sleep through the use of wearable movement and sleep-tracking devices should be further validated for the purpose of employing cost-efficient and expedient means of monitoring sleep in both research and clinical settings.

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About the Author

Taylor Maynard is a senior majoring in Psychology who will graduate in May 2017. Her research project, made possible through the Adrian Tinsley Program Summer Research Grant, was conducted throughout the spring, summer, and fall of 2016 under the mentorship of Dr. Sandy Neargarder (Psychology, Bridgewater State University) and a fifth-year graduate student, Erica Appleman, from Dr. Alice Cronin-Golomb's Vision and Cognition Laboratory at Boston University. Taylor presented her research at Harvard University's 2017 National Collegiate Research Conference (NCRC) in Boston, MA, as well as at the 2017 International Neuropsychological Society (INS) conference in New Orleans, LA. Taylor plans to attend an experimental psychology Ph.D. program in the fall of 2017 to pursue her career goal of becoming a researcher and professor of Psychology.

The Perceptions of Preservice Teachers on Time Devoted to Post-Teaching Discussion Sessions Through Communities of Practice

SHEILA O'SULLIVAN

Introduction

There are numerous theories about human learning: behaviorism, cognitive, humanistic, and social theories (Learning Theories Site Map, 2013). One theory of learning involves a deepening process of participation in communities of practice, which involve a cluster of individuals who share a common interest of concern or passion and who learn from each other through the process of sharing experiences and information about how to improve such interest (Wenger-Trayner & Wenger-Trayner, 2015). This concept involves a discussion among group members about ways of doing and approaching things that are elaborated upon to a significant extent to facilitate learning and enhance performance (Smith, 2009). Frequent discourse and active and social engagement produce a shared construction of knowledge that contin-

ues over time (MacPhail, Patton, Parker, & Tannehill, 2014). The purpose of this study was to investigate the perceptions of preservice teachers about time devoted to post-teaching discussion sessions through communities of practice.

Literature Review

Many people strive for improvements. In order to obtain success, many people reflect on their actions and consider what could be done more effectively next time around. Reflection involves "the intentional attempt to synthesize, abstract, and articulate the key lessons taught by experience; reflecting on what has been learned makes experience more productive; and reflection builds one's confidence in the ability to achieve a goal (i.e., self-efficacy), which in turn translates into higher rates of learning" (Di Stefano, Gino, Pisano, & Staats, 2014, p. 1). Reflection can serve as a useful tool for learning and is often used in communities of practice.

A theory about learning called a community of practice consists of three distinct characteristics: the domain, the community, and the practice (Wenger-Trayner & Wenger-Trayner, 2015). A network of connections between people form an identity by a shared domain of interest. The group values their collective competence and learn from each other in their joint activities and discussions. In addition, they build relationships that enable them to learn from each other as they care about their standing with each other. The members of such a community develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short, a shared practice (Wenger-Trayner & Wenger-Trayner, 2015). The indi-

viduals within the group interact over a period of time. This theory of learning directly involves practitioners in the management of the information they need individually and collectively to strive for success in their work. The members "engage in the development of strategic capabilities critical for achieving the goals of the organization(s) they belong to" (Wenger-Trayner & Wenger-Trayner, 2015).

This learning theory was developed by Jean Lave and Etienne Wenger in the late 1980s and early 1990s and was applied to businesses that were interested in knowledge management. Now, however, it is used in other practice fields (Smith, 2009). More recently, a community of practice has become "the foundation of a perspective on knowing and learning that informs efforts to create learning systems in various sectors and at various levels of scale, from local communities, to single organizations, partnerships, cities, regions, and the entire world" (Wenger-Trayner & Wenger-Trayner, 2015). Specifically, the literature in Physical Education Teacher Education (PETE) has found that learning takes place within social practice (Parker, Patton, Madden, & Sinclair, 2010) which inspired colleagues to consider using authentic communities of practice within the PETE program (MacPhail, Patton, Parker, & Tannehill, 2014).

PETE wants to develop teachers who are able to teach for higher order and conceptual learning. There are several theories about learning, one of which refers to a deepening process of participation through learning with others with a shared outcome. The ultimate goal for PETE faculty is to become more knowledgeable about the importance of creating a community of prac-

tice. This study, therefore will shed light regarding the importance of creating these opportunities in their undergraduate teacher licensure programs.

Methods

Participants and Setting

Participants included 8 preservice teachers (4 males, 4 females) enrolled in an undergraduate elementary physical-education teacher-licensure methods course. All but one preservice teacher were seeking dual licensure for physical education. These preservice teachers were in their junior year, approximately two semesters away from their student teaching practicum. The preservice teachers had been in classes together prior to the course, such as the prerequisite course in the previous semester and other courses in their major. Eight weeks of the course was dedicated to providing opportunities for the preservice teachers to apply their knowledge through practical teaching experiences with elementary-aged learners, as well to provide them with opportunities to observe others teaching.

Following teaching and observational experiences, preservice teachers were situated in a "learning space" to debrief their experiences. The debriefing session was called a "Coffee Talk," which took place in a comfortable, relaxed environment where the preservice teachers shared and discussed their observational notes with each other as well as received feedback in regards to teaching performances from the perspectives of observers, a professor, and a teacher assistant. The observers followed a rubric/checklist to notice when other students were teaching, then discussed those observational notes in the "Coffee Talks." Those anecdotal notes were intentional.

Seating formation for "Coffee Talks"

Lounge located in Bridgewater State University's Rondileau Campus Center

There was a total of four "Coffee Talk" meetings and each session lasted 1.5 hours, with a total of 6 hours devoted to discussing teaching experiences. The first three "Coffee Talks" took place during class time in a commuter lounge at Bridgewater State University, which was in the Rondieau Campus Center, on the opposite side of campus from the assigned classroom. Preservice teachers brought their breakfast food and drinks to these "Coffee Talks," along with necessary documents for discussion. The area was a somewhat quiet space during these morning debriefing sessions. The class started off together in one large circle facing inwards. Eventually, the class divided into their teaching groups of 4 preservice teachers with either the professor or teacher assistant sitting with them to facilitate the discussion. The pictures below show an example of the chair formations for these discussions and the lounge itself.

The fourth and final "Coffee Talk" was at an actual coffee shop in the town's center, just a short ride from campus. This "Coffee Talk" immediately began with the

two teaching groups working separately, and then they came together toward the end. Seated at a table, preservice teachers drank their purchased beverages as they provided each other with feedback and suggestions.

Data Collection and Analysis

Data collection included semi-structured interviews, semi-structured focus group interviews, artifacts (i.e., lesson reflections, preservice observational field notes, and summary reports), and observations. Interview questions included the following:

- How did you contribute to the "Coffee Talk"?
- What was the value of the "Coffee Talk"?
- How does the change of scenery from a traditional classroom to a lounge play a role in the "Coffee Talk"?
- How did the "Coffee Talk" make you feel when you gave constructivist feedback?
- How did the "Coffee Talk" make you feel when you received constructivist feedback?
- How have the relationships developed be-

tween you and your classmates during and as a result of the "Coffee Talk?"

All audio recorded interviews, totaling 55 minutes, were transcribed verbatim. The data from the interviews and artifacts were qualitatively analyzed using open-axial coding over one semester (Corbin & Strauss, 1998).

The first interview was broken up into two focus groups of four preservice teachers each. Each group was interviewed for 20 minutes. For the second interview, the number of participants was reduced to one member from each focus group in order to experiment with whether responses would be more authentic without the pressure of group members hearing each other's comments. Both individuals were interviewed together for 10 minutes. The third interview only consisted of one preservice teacher who was interviewed for 5 minutes. Each interview was conducted at Bridgewater State University. A list of pre-developed open-ended questions were asked, as well as certain follow-up questions that were used to help participants expand on their answers. After two "Coffee Talks," the preservice teachers typed up reflections in regards to their experiences with these post-teaching discussions.

Procedures
Institutional Review Board (IRB) approval was granted before contact with participants. Once approved, the potential participants were given a consent form explaining the purpose of the study and what they could expect as a participant to review and sign before proceeding with this study. Once consent was confirmed, the participants were to answer questions in audio recorded interviews after each "Coffee Talk" and to send in a typed reflection to gather information about their perceptions about the time devoted to post-teaching discussion sessions through communities of practice. Prior to each interview, each participant's verbal assent was obtained.

Results
Data analysis resulted in the identification of three themes with respect to time devoted to post-teaching discussion sessions through communities of practice. For these participants 1) the environment, 2) exchange of ideas, and 3) the relationships built among each other influenced their understanding of the process of learning to teach.

Environment: "a warm, comfortable area where I am able to be honest and open-minded"
One benefit of the "Coffee Talk" was sharing observations and feedback in a relaxed environment rather than in a traditional classroom. The location of the "Coffee Talk" took place in another academic building with lounge chairs in a circular formation facing inward. The preservice teachers felt more at ease conversing with one another when going over the evaluations while sitting in the comfortable chairs. The preservice teachers commented on the "laid back" style of the "Coffee Talk" and mentioned that being in such an environment made them more willing to share.

The organization of groups also impacted the preservice teachers' perceptions. The start of "Coffee Talks" involved 8 preservice teachers, 1 professor, and 1 teacher assistant in a large circle facing inwards. The large group discussed broad topics. After several minutes, the class broke off into their assigned teaching groups

which narrowed down to 4 preservice teachers and an authority figure. In the smaller groups, the preservice teachers gave specific feedback to the individual. One preservice teacher commented on the 1 group of 8, "I like to hear from everybody and hear what other people need to work on too because it is probably something we all need to work on, so it's good to that sense in a big group." However, a majority of the preservice teachers preferred 2 groups of 4. Several commented that they were more willing to talk and give constructive feedback in the smaller groups compared to a larger group. Although the class preferred the smaller groups, the preservice teachers commented positively about having the two group arrangements in the "Coffee Talks," since both setups were useful in their own distinct ways.

Exchange of ideas: "pick each other's brains"

After reflecting on their teaching experiences, the preservice teachers came together in the post-teaching discussion session to exchange useful knowledge and feedback among each other. One preservice teacher said, "every time we have a coffee talk I try to incorporate something I learned into my next lesson, whether if it was something I liked that someone else did or something that I need to work on." The preservice teachers appreciated having others' perspectives on their teachings. The observers, professor, and teacher assistant were able to give their inputs to the preservice teacher and share suggestions on what to improve. Many of the preservice teachers were unaware of their actions until someone else pointed them out. The preservice teachers became more aware of their teaching styles and lesson planning following each "Coffee Talk."

The flow of the discussions allowed the students to feel

relaxed while conversing within their group. Pre-developed questions guided the preservice teachers in each discussion. Preservice teachers were able to freely discuss any questions or ideas that they may have. The preservice teachers were able to "pick each other's brains" in the post-teaching discussion sessions.

Relationships: "I don't think this would have worked as well if I did not know you guys that well"

It was advantageous to have preexisting relationships prior to each "Coffee Talk." These eight preservice teachers were classmates in other undergraduate courses before taking the teacher-licensure methods course. A handful of the preservice teachers believed the "Coffee Talks" would not have been as effective if they did not know each other beforehand. The preservice teachers trusted one another to provide authentic feedback and thoughtful advice, since they all wanted to help each other become better teachers.

The relationships among the preservice teachers grew over the course. In the beginning of the semester, they viewed each other as strictly classmates. However, their bonds increased with the service from the "Coffee Talks," as they got to know each other a little bit more and felt a sense of care from their classmates. One preservice teacher commented it is "good to have classmates who care about you and want to give you advice so you can be the best that you can be." As a result, the preservice teachers appreciated the post-teaching discussions for their relaxed environment and the beneficial feedback they received from trusted classmates.

Conclusion

Results from this study indicated that post-teaching discussions through communities of practice positively impacted the preservice teachers. First, discussing teaching experiences in a comfortable environment allowed preservice teachers to share more information in comparison to the traditional classroom. Second, the authentic conversations allowed preservice teachers to reflect and use the applicable information for future teachings. Third, preservice teachers built trust in one another as genuine feedback was provided.

Although the preservice teachers appreciated the time devoted to the post-teaching discussion sessions, it is unlikely they will continue that type of practice outside of the classroom due to conflicting schedules. Even though they will not designate a time to meet up, the preservice teachers will continue to use each other as resources by reaching out to one another in passing or in class. If someone were to ask for help from the other preservice teachers, everyone would be willing to help out.

The social learning space in a community of practice enables "genuine interactions among participants, who can bring to the learning table both their experience of practice and their experience of themselves in that practice" (Wenger-Trayner & Wenger-Trayner, 2015). The National Center for the Dissemination of Disability Research (NCDDR) and the National Institute on Disability and Rehabilitation Research (NIDRR) worked together to further "expand their common understanding and to jointly address issues related to research quality, standards, and guidelines. To achieve this, the NCDDR modeled the use of Communities of Practice as a knowledge translation strategy" (National Center for the Dissemination of Disability Research). Several opportunities, benefits, and guiding principles of the NCDDR Communities of Practice have been presented. The activities emerged from their study indicate that this concept is a "positive strategy to encourage NIDRR grantees to work together in areas of common interest" (National Center for the Dissemination of Disability Research). The individuals were able to work "collegially to share and learn from each others' expertise, and to use their collective knowledge to build the practice of disability and rehabilitation research" (National Center for the Dissemination of Disability Research). The study conducted by NCDDR and NIDRR revealed that its group members used each other as reliable resources to help expand their knowledge of a desired topic. The process of such learning theory was investigated in other career areas to seek any benefits outside of NCDDR and NIDRR.

The communities of practice strategy was investigated with preservice physical educators and showed that the learning theory is applicable in other areas of work. The preservice teachers enjoyed meeting frequently to use the positive strategy to achieve a common interest among all, which was to improve teaching performances. The participants came together to help each other become better physical education teachers. Feedback about teaching performances and ideas were shared among trusted group members. Communities of practice ought to be used in the education field and other work areas to help enhance a common, desired outcome of work improvement among all group members.

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A Just Framing of Healthcare Reform: Distributive Justice Norms and the Success/Failure of Healthcare Reform in America

MARISA PARKER

Abstract

In 2010 President Obama did the politically unthinkable: he passed healthcare reform that has the effect of providing healthcare to all Americans. What makes this feat so impressive is that other presidents (Franklin Roosevelt, Harry Truman, Lyndon Johnson, Richard Nixon, and Bill Clinton) all tried and failed in their efforts. Why did Obama succeed and these other presidents fail? Using agenda setting and issue framing theories, this study explores how each of these presidents framed their healthcare reform efforts. In particular, this study focuses on how each president framed reform in terms of distributive justice and the four principles of allocation (equality, merit, need, and efficiency) available to them. Content coding major policy addresses of each president in order to generate frequency distributions, the analysis presented here demonstrates that President Obama was successful be-

cause he framed healthcare reform in terms consistent with the American public's distributive justice preferences. Unlike previous presidents who attempted to combine the principles of need and equality, President Obama combined need and efficiency in a policy frame that not only captured the preferences of the American public, but undermined the argument of his political opposition. The analysis and argument advanced here speak to the power of marrying language and politics in the rhetorical presidency and the ability of presidents to pursue political change.

Introduction

On March 23, 2010 President Barack Obama signed into law the Affordable Care Act (ACA). The centerpiece of this legislation is the requirement that all Americans are required to have healthcare. Leaving aside the debate that continues over this landmark piece of legislation, a more fundamental question emerges when one considers the ACA: Why was President Obama able to pass significant healthcare reform and move the United States towards achieving universal healthcare coverage for all American citizens when other presidents who tried to enact universal healthcare coverage in the past failed?

Prior to President Obama, five presidents—FDR, Truman, Nixon, Johnson, and Clinton—tried and failed to pass significant pieces of healthcare legislation which would ultimately provide a form of universal healthcare coverage to the American people. In the 1930s, FDR attempted to place a provision for publicly funded healthcare into the Social Security Act, but this piece

of healthcare policy legislation never made it onto the legislative agenda, largely due to the lobbying efforts of the American Medical Association (AMA). Truman, moving past FDR, actively sought to propose and support universal healthcare reform as part of his 1949 Fair Deal Program. Johnson, taking a more pragmatic approach, succeeded in passing both Medicaid and Medicare legislation which aided both low-income and disabled American citizens. Johnson's efforts to move the United States any further toward universal coverage were not as successful. Looking to build on this success, Nixon (in February 1971) proposed an employer mandate and called for federal Medicaid for dependent children; Nixon sought to extend this proposal to effectively provide all American citizens with healthcare. Nixon's efforts ultimately proved to be unsuccessful. In February 1974, Nixon tried and failed to significantly expand health insurance with his CHIP recommendation which sought to build on and adopt many of the ideas and strategies found in the proposals of FDR, Truman, and Johnson. Clinton's attempt at healthcare reform continued the trend of failure as he failed to persuade Americans that they would not have to rely on subscribing to purely government-subsidized health insurance and that they could keep the same primary care physician that they had always gone to. Like all previous efforts, Clinton was unable to overcome the opposition provided by many from within the healthcare sector: nurses, the AMA, primary care physicians, and medical insurance providers. Given this historical track record of previous healthcare reform efforts, a betting person would have felt very confident that Obama's reform efforts would enjoy a similar fate. This person

would have lost a great deal of money. The question which remains to be answered is: How was Obama able to accomplish what many believed to be politically impossible? The answer provided here is that Obama succeeded because he was able to frame the issue of healthcare reform correctly and in such a way that his argument for reform accorded with the distributive justice principles of the American public.

This argument is developed over the course of four sections. First, the scholarly literature on agenda setting, issue framing, and the rhetorical presidency is reviewed. All three of these areas of scholarship bring politics and language together and speak to how presidents can be successful in their attempts to change public policy. This section also reviews relevant scholarship on distributive justice and the allocation principles of need, efficiency, equality, and merit. The second section discusses the data used for this study and the content coding methodology employed here. The third section presents individual analyses of the framing efforts found in key addresses from Presidents Roosevelt, Truman, Johnson, Nixon, Clinton, and Obama as well as a comparative analysis of their issue frames. Throughout this analysis the frames are compared to the distributive justice preferences of the American people. Finally, the argument made here concludes by reflecting on the nature of the policy process itself and offers some suggestions for any politician interested in significantly changing public policy in America.

Literature Review
The intersection of politics and language is best un-

derstood in terms of agenda-setting and issue framing. Public policy scholars use the theory of agenda setting to explain not only how issues move from private to public concerns, but why some policies succeed where others fail.[1] One school of thought (Kingdon 1980) contends that the three streams of politics, problems, and policy come together at critical times. At these moments solutions are joined to problems, and both are joined to favorable political forces/circumstances (Kingdon 1980, 100). When this coupling occurs, a policy window opens and it becomes possible for a politician, in this case President Obama, to push through his legislative solution. According to this theory, Obama succeeded where other presidents did not largely because he was the right person in office at the right time. Another school of thought focuses on the internal quality of political systems to explain policy change (Baumgartner and Jones 1993). Generally speaking, there is not a great deal of policy change because of the presence of policy monopolies. Only when something alters a policy image is there an opportunity for policy change, as the policy equilibrium has been altered or punctuated (Baumgartner and Jones 1993, 200). Again, this understanding suggests that Obama achieved healthcare reform largely because of factors outside of his control. Either explanation by itself is problematic due to the fact that these explanations do not allow for the ability of political actors to fundamentally shape political discourse. While both theories allow for the importance of language and the efforts of political actors to move both public discourse and public policy in their desired direction, the explanations they offer for success and

failure are largely dependent on factors outside of the control of these political actors. For this reason, it is necessary to supplement these understandings of agenda setting with an understanding of issue framing.

The origin of issue framing can be found in the seminal work of E. E. Schattschneider, *The Semi-Sovereign People* (1960). Focusing on the centrality of conflict to political action, Schattschneider concluded that the way an issue defines and describes a conflict is actually more important than the conflict itself (see also Rochefort and Cobb 1994). Defined as "the effects of presentation on judgment and choice," framing fundamentally has to do with the shaping of political reality with an aim to making it more comprehensible (Iyengar 1996, 61). Encompassing the ideological as well as the cultural elements of conflict (Lakoff 2002, 375), successful framing requires political actors to define problems and provide policy alternatives/solutions that are publicly salient (Entman 1993, 51). Failing to do this explains, in part, why some issues get on the political agenda where others do not (Rochefort and Cobb 1994, 24) and why some policies succeed where others fail (Stone 2002, 200).

The ability of a president to place an issue on the political agenda and frame it in such a way as to pass the proposed legislation comes together in the idea of the rhetorical presidency (Tullis 1987, 179). Tullis argues that the rhetorical presidency is a large part of America's national political culture and the key to how presidents operate on a political level. He writes, "Today it is taken for granted that presidents have a duty constantly

to defend themselves publicly, to promote policy initiatives nationwide, and to inspire the population. And for many, this presidential 'function' is not one duty among many, but rather the heart of the presidency- its essential task" (Tullis 1987, 4). Looking to the presidency for leadership and assurance, a president's ability to marry politics and language is not only key to popular understandings of leadership, but resides "at the core of dominant interpretations of our whole political order, because such leadership is offered as the antidote for 'gridlock' in our pluralistic constitutional system, the cure for the sickness of 'ungovernability'" (Tullis 1987, 4). Given this view of the political order, Tullis argues that "The rhetorical presidency makes change, in its widest sense, more possible. Because complex arrangements of policies are packaged and defended as wholes (e.g., the New Freedom, New Deal, Great Society, New Federalism, War on Poverty, etc.), they are more likely to be rejected as wholes" (Tullis 1987, 178). Presidents are able to do this by "reshaping the political world in which that policy and future policy is understood and implemented. By changing the meaning of policy, rhetoric alters policy itself and the meaning of politics in the future" (Tullis 1987, 179).

As agenda setting, issue framing, and the rhetorical presidency make clear, language matters a great deal in politics. Throughout this paper it is my contention that President Obama succeeded where other presidents before him failed because he framed healthcare reform in a manner that was consistent with how Americans understand justice. In other words, President Obama spoke to Americans about healthcare reform in their own terms. To test for this possibility, this paper focuses on the use of the language of distributive justice in

framing healthcare reform. Any public policy can be understood in terms of justice; distributive justice is particularly relevant for healthcare reform. Generally speaking, distributive justice refers to how a good (in this case healthcare) should be allocated. While philosophers can agree on what distributive justice is, there is considerable disagreement over the question of what the principle of allocation should be (see Rawls 1971; Walzer 1983; & Miller 1999). A reading of the history of political thought indicates that there are four principles of allocation that can be used as frames for public policy. They are as follows:

- Equality in an absolute sense. While initial understandings of equality focused on equality of rights, the understanding of equality is currently understood in terms of the equality of conditions. It is thus standard in empirical studies of distributive justice to operationalize equality as absolute equality of outcome (Scott et al. 2001, 750).
- Merit. With its origins in Aristotle's understanding of equity, allocation on merit contends that goods should be distributed in proportion to the contribution one makes where that contribution is due to qualities or activities thought to deserve reward (Scott et al. 2001, 751).
- Need. While need can be closely related to equality (equal need can be seen as a criterion for equal distribution), the standard is to treat need as an entirely different allocation principle (Miller 1999, 203-230). As such, need can be viewed as placing limits on inequalities. In particular, need is commonly conceptualized and operationalized in terms of meeting a

- minimum level of necessary social goods, and this way of thinking is increasingly influential in both democratic theory and justification for social welfare programs in the United States and abroad (Marmor, Machaw, & Harvey 1990).

- Efficiency. Unlike the other three allocation principles, efficiency is not itself a normative principle. The argument for efficiency, however, raises normative questions, thus justifying its inclusion here. Efficiency is an allocation principle used to justify inequalities in terms of aggregate benefit (Nozick 1974, Hayek 1976). Arguing for wealth maximization, proponents of efficiency argue that a greater amount of overall goods for the same amount of input is preferred because of the net aggregate benefit.

Using these principles of allocation, political scientists have devoted considerable attention to determining how people think about distributive justice. The general conclusion one draws from looking at the survey results is that the public has conflicting views of these principles (see McCloskey & Zaller 1984; Verba & Orren 1985). In contrast, experimental research suggests that people have complex rather than conflicting ideas about justice (see Miller 1999; Elster 1995; Frohlich & Oppenheimer 1992; Scott et al. 2001). These studies show that distributive justice behavior is complex but structured; they involve several distinct allocation principles and are influenced in predictable ways by independent factors. Comparative studies of distributive justice indicate that both the American public and elite members of society view distributive justice in terms of need and merit (Kluegel & Smith 1986).

Data and Methodology

Using the operational definitions of the four principles of allocation above, this study identifies key speeches which deal with healthcare reform from Presidents Obama, Clinton, Nixon, Johnson, Truman, and Franklin D. Roosevelt.[2] Each of these speeches was content coded for how they framed the issue of healthcare reform by the author and an outside reader. This was done in order to ensure the accuracy of the coding process in terms of whether or not a relevant piece of text within each speech should be coded and, if it should be coded, what allocation principle it should be coded as. Every individual reference to a particular allocation principle is counted as a single frame which allows for the counting of multiple frames within a single sentence. The more a president has recourse to a particular principle suggests that this particular principle is more important to his efforts to successfully frame healthcare reform. Approaching the framing of healthcare reform in this way is supported by Entman's (1993) understanding of the relationship between issue framing and saliency. Frames highlight pieces of information, and, in highlighting them, the framer hopes to make this information more noticeable, meaningful, and memorable to the audience. In short, making this information more salient through repetition. By increasing the salience of particular distributive justice allocation principles in arguments for healthcare reform, the presidents examined here can be seen as satisfying the four requirements of issue frames: 1) defining a problem; 2) diagnosing the causes of the problem; 3) making a moral evaluation about the problem and its causes; and 4) suggesting a solution (Entman 1993, 53).

MERIT: equity of distribution based on one's contribution	NEED: minimal level of necessary social goods
• Equity/Equitable • Excellence • Distinction	• Requirement • Essential • Necessary/Necessity • Want • Poverty • Deprived • Hardship • Destitute
EFFICIENCY: inequality justifiable as long as there is aggregate net benefit	EQUALITY: absolute equality of outcomes
• Effective • Ordered • Profitable • Productive • Proficient • Expertise	• Fairness • Equal Rights • Equal Opportunity • Egalitarianism • Unbiased • Comparability

Table 1. Allocation Principles of Distributive Justice: Indicators

Table 1 contains a partial list of indicators for each of the allocation principles. Merit's connections with equity speaks to excellence and distinction. Presidential appeals to this principle should be to the excellence of the healthcare system. The fact that this study focuses on arguments for healthcare reform suggests that one would not expect to find frequent appeals to this concept. This, however, does present a complication for the argument made here as Americans generally view distributive justice as a combination of need and merit. The poor fit of merit for the argument in favor of healthcare reform suggests that an alternative principle should be incorporated into the issue frame and, as discussed below, there is good reason to believe that efficiency comes to perform this task.

The second concept in Table 1 is need and this should be the concept that presidents have the greatest recourse to in making their arguments for healthcare reform. Not only is need a constituent aspect of the American conception of distributive justice, but establishing need would seem to be the foundation for the argument that America's healthcare system requires reform in the first place. It is very likely that efficiency is connected to need in these addresses. Anyone who has dealt with the forms at the doctor's office or hospital and the challenge of dealing with health insurance companies understands that the system is far from efficient. These facts suggest a symbiotic connection between need and efficiency that can be used to effectively shape the political conversation surrounding healthcare reform. That efficiency will replace merit is also suggested by the fact that citizens tend to make political decisions based on performance and not policy (Lenz 2003). One

should thus expect two things in the presidential use of efficiency. First, one should see the current system characterized as inefficient and, second, that the reformed system of healthcare would be more efficient.

Finally, Table 1 contains a series of possible indicators for equality of outcome. Concepts like fairness and comparability speak to a fundamental concern with equality. The problem with equality of outcome is that Americans are generally not in favor of this allocation principle (Verba & Orren 1985, 5, 124). This is especially the case in discussing the principles of allocation of distributive justice theory as they relate to the policy areas of economics and social welfare. Americans do believe in equal political rights (but generally do not view healthcare as a political right) and in equality of opportunity. Thus, to the extent that any of the presidential addresses analyzed here contain references to equality of outcome one would expect this argument to not be respected and valued given the American public's distaste for equality of outcome. If presidents want to frame healthcare reform in terms of equality that appeals to American sensibilities, they should conceptualize equality in terms of the equality of opportunity.

The results of the coding process for each presidential address will be compared to each other and to what we know about the way Americans think about distributive justice. It is my expectation that the evidence will show that all presidents prior to Obama employed distributive justice frames that were inconsistent with how Americans think about justice. President Obama, though, justifies healthcare reform in terms that are consistent with how Americans view justice; this fact helps one to understand why he successfully achieved healthcare reform.

Analysis

In terms of this paper's analysis, each president's healthcare reform address will be analyzed individually.[3] The analysis will evaluate the principle or principles that is/are emphasized by each president, but also the principle or principles that each president does not have recourse to. Each allocation principle discussed above suggests a specific research hypothesis. In arguing for healthcare reform, it is expected that merit is the least important allocation principle (H1) and that need is the most important allocation principle (H2). One should also expect that efficiency becomes an increasingly more important frame/hypothesis (H3) in recognition of the fact that the American public tends to evaluate candidates and the political world not in terms of public policy, but in terms of effectiveness (see Lenz 2013). Finally, given the fact that equality is conceptualized as the more specific allocation principle of distributive justice—equality of outcome—one would not expect to see this principle frequently used in presidential efforts to achieve healthcare reform (H4). Americans simply do not view equality in these terms. Thus, if a president were to use equality as a frame one would expect to see them employ an understanding of equality supported by the public-equality of opportunity.

Individual Presidential Addresses

Table 2 contains the frequency distributions for each presidential address analyzed here for each of the four allocation principles. The bottom section of the table also contains frequency distributions for the various ways equality can be conceptualized. Analysis of

Table 2: Allocation Principles in Presidential Addresses						
	FDR	**Truman**	**LBJ**	**Nixon**	**Clinton**	**Obama**
Allocation Principle						
Need	19 (46%)	81 (55%)	24 (75%)	43 (32%)	35 (19%)	43 (39%)
Efficiency	6 (15%)	21 (14%)	2 (6%)	42 (31%)	95 (52%)	55 (51%)
Merit/Equity	1 (2%)	3 (2%)	0 (0%)	16 (12%)	22 (12%)	1 (1%)
Equality	15 (37%)	43 (29%)	6 (19%)	33 (25%)	32 (17%)	10 (9%)
Total	41 (100%)	148 (100%)	32 (100%)	134 (100%)	184 (100%)	109 (100%)
Types of Equality						
Outcome	8 (53%)	28 (65%)	5 (83%)	18 (55%)	26 (81%)	5 (50%)
Right	5 (34%)	5 (12%)	0 (0%)	0 (0%)	6 (19%)	0 (0%)
Opportunity	0 (0%)	9 (21%)	1 (17%)	14 (42%)	0 (0%)	1 (10%)
Partnership	2 (13%)	1 (2%)	0 (0%)	1 (3%)	0 (0%0	4 (40%)

FDR's framing of healthcare reform provides support for the first two hypotheses. FDR makes only a single reference to merit and need is by far the principle he has the greatest recourse to (46%). The emphasis on need is consistent with how the public views distributive justice so FDR's frame is partially correct. He gets things wrong, however, in making equality his second most important allocation principle which does not support the fourth hypothesis. 37% of the frames used by FDR are to equality and of these 53% are to equality of outcome. FDR hardly has recourse to efficiency and, as argued here, one would expect efficiency to replace merit as the second allocation. Thus, there is no empirical support for the third hypothesis.

The results for Truman add additional support for the first and second hypotheses. Merit is the least important principle for Truman (3%) and need is definitely the most important principle (55%). With regard to efficiency, Truman paints the same picture as FDR, and Truman follows FDR in making the mistake of having equality as the second most important principle (29%)

which does not support the fourth hypothesis. Closer inspection of Truman's use of equality shows that 65% of the time he uses equality in terms of equal outcomes, and 12% of the time he speaks in terms of healthcare as an equal right. This means that 77% of his appeals to equality are couched in such a way as to lose support amongst the American people. This being said, Truman does try to frame equality in terms of the equality of opportunity (21%), but even with this being said he would have been better off to not employ equality at all as an allocation principle of distributive justice for the policy area of healthcare reform policy legislation.

The results for Johnson to continue the trend of providing support for the first two hypotheses are presented next. Johnson makes no references to merit and 75% of all his references to distributive justice are to need. Johnson's lack of recourse to efficiency (6%) goes against the American public's expectations regarding their views of distributive justice as does the fact that he uses equality 16% of the time. In referencing equality, 83% of the time he speaks of equality of outcome,

and he makes only a single reference to equality of opportunity. Johnson's framing efforts, like those of FDR and Truman, are not consistent with the values of the American public. This, in part, explains why Johnson was unable to follow up his success in passing Medicare and Medicaid. With regard to the development of comprehensive healthcare legislation that would spur forward the process of creating universal healthcare coverage for all American citizens, Johnson seems guilty of oversimplification by emphasizing need almost exclusively. While need is important, experimental research on distributive justice allocation principles and norms shows that people think about distributive justice in more nuanced ways where they often combine multiple principles and that these principles vary by policy area (see Miller 1999; Elster 1995; Frohlic & Oppenheimer 1992; Scott et al. 2001). Had Johnson been able to capture this concept in his efforts to frame healthcare reform he might have been successful.

Merit remains the least important principle for Nixon (12%) and need is still the most important principle (32%). Here, one finally finds support for the hypothesis that efficiency will replace merit in how the argument for healthcare reform should be framed. Closer inspection of Nixon's speech itself contains multiple passages where Nixon connects need and efficiency. Nixon (1974) states, "Only with effective cost control measures can States ensure that the citizens receive the increased health care they need and at rates they can afford." Based on these findings, Nixon's frame comes the closest to mirroring the preferences of the American people. So, where does Nixon's frame go wrong? The answer to this question seems to be his recourse to equality (25%). The rate that Nixon has recourse to this

concept is almost at the same level as his references to need (32%) and efficiency (31%). Thus, Nixon essentially makes a three-pronged argument in favor of healthcare reform. While Nixon smartly employs equality of opportunity (42%), the dominant understanding of equality used by Nixon remains equality of outcome (55%). Nixon would have been far better served to exclusively use equality of outcome or to drop any reference to equality all together.

The results for Clinton paint quite the interesting picture for his prospective take on devising comprehensive healthcare reform. While merit remains the least important allocation principle (12%), Clinton's rhetoric moves in a highly unanticipated direction as he only uses need 19% of the time! Not only does this fact contradict the public's view of distributive justice, but it ultimately seems strange and contradictory in that establishing need is the logical foundation of an argument for healthcare reform itself. If there is no recourse to the distributive justice allocation principle of need, then the question remains as to why it is that reform is necessary in the first place? Clinton does provide support for the third hypothesis as he has recourse to efficiency 52% of the time, and he continues the trend of not supporting the fourth hypothesis as well by employing equality 17% of the time with 85% of these references to equality of outcome. The efficiency results are striking. While one expects efficiency to have increased in importance, it is a bit surprising to see it as the most important principle. While this does suggest that politicians recognize that the public evaluates things based primarily on a performance criterion, one would not expect the total abandonment of ethical criteria in arguing for healthcare reform. The fact that Clinton does this is

suggested by the fact that his combined use of the two most relevant ethical principles available to him (need and equality) is 16% less than his use of efficiency. These results suggest that the way Clinton framed healthcare reform worked against him. He correctly recognizes the importance of efficiency, but seems unclear as to how to successfully to expand and complete this policy frame.

Finally, the results for President Obama provide empirical support for the more general argument made here; that Obama was able to pass healthcare reform because he framed his argument for reform in terms consistent with the public's views on distributive justice. Merit continues to be the least important principle (1%), and, unlike Clinton before him, Obama strikes a better balance between need (39%) and efficiency (51%). Not only does this provide support for the second and third hypotheses tested here, but this combination of allocation principles accords with the preferences of the American public. That Obama was successfully able to capture the values of the American people in his framing of healthcare reform is also suggested by equality's lack of importance in his framing efforts. Only 9% of Obama's use of distributive justice allocation principles refer to equality (by far the lowest of any of the six presidents looked at here), and while 50% of these are to equality of outcome, the infrequency of these references is important. Additionally, like Nixon, who ultimately sought to balance equality of outcome via recourse to equality of opportunity, Obama's use of equality of solution frames (40%) represents an important contribution to his efforts to pass healthcare reform. Previously, FDR, Truman, and Nixon had all spoken of the fact that the American people, Republicans, Democrats,

the insurance industry, and healthcare professionals working in the healthcare sector are all equal partners in solving the problems of healthcare in America. By providing this understanding of equality of partnership, rather than merely a greater emphasis on the general distributive justice allocation principle of equality with greater weight than previous presidents, Obama effectively uses this rhetorical tool—the breakup of the policy monopoly used by the AMA—to efficiently combat previous reform efforts. This is evident when Obama (2009) speaks of reform efforts being "supported by an unprecedented coalition of doctors and nurses; hospitals, seniors' groups, and even drug companies—many of whom opposed reform in the past." Thus, one not only sees here evidence showing that Obama's framing of healthcare reform is the most consistent with the preferences of the American people, but that he is able to add something new to the issue frame (equal partners is equal to finding a solution) that serves the political purpose of releasing the AMA's strangle hold on this issue area.

Comparative Analysis of Allocation Principles
Having shown that Obama's efforts to frame healthcare reform are the closest to the preferences of the American people, one is provided with a clear sense of why he succeeded where previous presidents failed in their attempts to pass and officially enact comprehensive healthcare reform. Additional insight into this conclusion is provided by comparing each allocation principle across all six presidents' data, which can be found by reading across Table Two. Doing so provides additional support for the argument made here.

The first research hypothesis is that merit will be the

least important allocation principle, and the results show this to be the case for each president. This idea is not emphasized by FDR, Truman, Johnson, and Obama; merit is only used with any frequency by Nixon (12%) and Clinton (12%). Instead of arguing that greater government involvement will improve the quality of healthcare in America, inspection of their use of merit shows both presidents attempting to use the connection between merit and excellence to decrease their intense and well-documented opposition of the AMA and others to healthcare reform. Nixon (1974), for example, speaks of sharing the costs of healthcare between the "employer and employee on a basis which would prevent excessive burdens on either." Similarly, Clinton (1993) argues "We're blessed with the best health care professionals on Earth, the finest health care institutions, the best medical research, the most sophisticated technology. My mother is a nurse. I grew up around hospitals. Doctors and nurses were the first professional people I ever knew or learned to look up to. They are what is right with this health care system. But we also know that we can no longer afford to continue to ignore what is wrong."

Through the presidency of Nixon, need was the most important allocation principle, which accords with the second research hypothesis. While FDR, Truman, Johnson, and Nixon all emphasized need, they all appeared to struggle to find that second principle to connect need to, with the principle of merit not an option available to them to connect with as a principle. Both FDR and Truman try to balance need with equality, but this only leads to confusion as political theorists working in the field of distributive justice recognize the similarity between need and equality (see Miller 1999, 203-230;

Stone 2002). Thus, this confusion leads to a muddled public message which undermines reform efforts. Nixon begins the process of identifying the all-important second principle as he makes efficiency his second most important principle (31%), thus establishing the ascendancy of efficiency as an important allocation principle in accordance with the third hypothesis. The problem with Nixon's message, despite his efforts to appeal to equality of opportunity, is that he incorporated equality as a third allocation principle (25%). While Americans' understanding of distributive justice is complex, it is not that complex.

As already indicated, Clinton's framing efforts all seem to run counter to the positions held by the American people. Not only does Clinton not emphasize the principle of need (19%), but, ultimately, Clinton is unable to balance his appeals to efficiency with any normative allocation principle of distributive justice. Relying almost exclusively on efficiency, Clinton opens his argument for reform to the criticism that greater government involvement in any aspect of life runs counter to much of the argument for efficiency (see Tomasi 2012; Hayek 1976). Thus, when reform opponents argue that government involvement produces greater inefficiency, Clinton is unable to adequately respond to this line of criticism as he did not give himself another principle he could use to deflect this line of criticism. It seems that Obama learned from the mistakes of past reform efforts. Following Nixon and Clinton, Obama emphasized efficiency. Unlike Clinton, who ignored the principle of need, Obama seems to have had to maintain an ideal balance between the principles of efficiency and need in accordance with the American public's viewpoints regarding the allocation principles of

distributive justice. Unlike FDR, Truman, and Johnson, Obama gives little attention to equality and when he does speak in terms of equality he is able to use this concept to undercut arguments against reform.

Conclusion

Jacobs and Skocpol (2012) remind one that there are numerous factors that explain why President Obama was successfully able to pass healthcare reform. This study shows that one of these key factors was President Obama's use of language. When compared to the framing efforts of previous presidents who sought, unsuccessfully, to enact healthcare reform, the framing efforts of President Obama stand out. Presidents Roosevelt, Truman, Johnson, and Nixon all recognized the centrality of framing reform in terms of need, but they failed to recognize the nuanced view of distributive justice held by the American people. Roosevelt, Truman, and Johnson all employed equality of outcome in their issue frames, and this value is definitely not consistent with the preferences of the American people. In fact, one of the conclusions of this study is that presidents use equality of outcome as an allocation principle to their peril.

Instead of marrying need and equality, presidents would be better served to combine need with a performance measure like efficiency. Nixon begins to do this, but it is President Clinton who first emphasizes efficiency in his framing of healthcare reform. The problem with Clinton's efforts, however, is that he relies almost exclusively on efficiency. By neglecting need, Clinton effectively undermines his own efforts at healthcare reform. Ultimately, President Obama strikes the right balances between appeals to normative principles (need)

and framing healthcare reform in terms of performance (efficiency).

President Obama's successful framing of healthcare reform and his ultimate success in passing the Affordable Care Act reminds us that in politics the language one employs matters. As such, the results presented here add support for the theoretical power of the rhetorical presidency. By framing healthcare in the way he did and going directly to the public, President Obama was able to garner support for healthcare reform and use this support to leverage Congress and pass reform into law. Not only did this serve as an effective antidote for gridlock, but, more importantly, in effectively using rhetoric and the tools at his disposal, President Obama satisfied what has become an unquestioned premise of our political system: The President ought to be a popular leader (Tulis 1987, 4). To all those who criticized President Obama for his lack of effective leadership, the evidence suggests quite the opposite—a strong President who effectively employed the power of language to accomplish what other presidents (more powerful, more popular, and better advantaged politically) failed to do.

Finally, the frame of need and efficiency employed by President Obama says something about the policy process in American. In *Policy Paradox*, Stone (2002) offers a political alternative to the dominant market based understanding of the policy process. The market model, which remains the dominant view of the policy process, contends that markets and not politics shape public policy. In particular, the market model is seen as preferable as it accords with the public's concern with maximizing personal welfare and economic well-being. In contrast, Stone argues for the centrality of politics and not

economics. Using the word polis (the Greek word for city-state) Stone contends that policy is best understood in terms of community-based political activity. It is in recognition of this fact that policy is discussed in terms other than efficiency. In fact, it is only in a political context that values like need and equality have a place in one's understanding of public policy.

The results presented here suggest that Stone's either/or proposition is not quite accurate. It turns out that a proper understanding of the policy process is a hybrid model where the market and market based concepts like efficiency cannot be disregarded in favor of overtly political concerns. Similarly, economists and policy experts who focus exclusively on efficiency not only ignore the reality of politics, but as Stone's use of polity suggests, they ignore the normative underpinnings of all of politics. Politics and public policy should be seen in a more nuanced light. Failure to do so provides one with an inaccurate understanding of the political world, as President Obama's successful efforts to pass healthcare reform reminds the student of politics and policy that the actual world of politics is more complex than what a simple equation can capture.

Notes

1.   The focus on agenda setting and framing taken here should not be taken as evidence that other factors and understandings of the policy process are incorrect or do not help one to understand why the ACA was passed. As Jacobs and Skocpol (2012) remind their reader, President Obama's ability to pass the ACA depended on a myriad of factors including, but not limited to, the following: 1) electoral politics and the key roles played by congressional leaders; 2) interest group pressures; 3) congressional procedures (reconciliation and the filibuster in particular); 4) the precedent of a mandate-based program in Massachusetts; and 5) changes in public opinion. The narrowness of the focus taken here reflects the primary concern with the use of normative principles in healthcare reform efforts.

2.   In the analysis that follows, I focus on Franklin D. Roosevelt's "Message to Congress on the National Health Program (January 23, 1939) and supplement this address with his "State of the Union Message to Congress" (January 11, 1944). Harry Truman's "Special Message to the Congress Recommending a Comprehensive Health Program" (November 19, 1945) was selected as was Lyndon B. Johnson's "Remarks with President Truman at the Signing in Independence of the Medicare Bill" (July 30, 1965). Richard Nixon's "Special Message to the Congress Proposing A Comprehensive Health Insurance Plan" (February 6, 1974) was also selected as was Bill Clinton's "Address on Healthcare Reform" (September 22, 1993). Finally, Barack Obama's "Remarks by the President to a Joint Session of Congress on Health Care" (September 9, 2009) serves as the last speech selected here.

3.   This study approaches the presidents considered here chronologically. This approach reflects the desire to determine whether or not the framing of healthcare reform changed over time and, to the extent that there is evidence of change, then ascertain the degree to which the use of distributive justice frames conform to what we know about the distributive justice values of the American public.

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Van Oster v. Kansas and the Unconstitutionality of Civil Forfeiture

THOMAS SENST

Introduction

In the 19th Century, Congress enacted the first civil forfeiture statues in the Navigation Acts of 1817. Congress' intention was to create legislation that could be used to help fight piracy. Civil forfeiture allows law enforcement to seize property allegedly involved in a crime without having to charge the owner. Homes, cars, businesses, and more are all subject to civil forfeiture. Additionally, many of the forfeited proceeds are often granted to the agency that successfully seized the property; therefore, law enforcement profits from crime. In a recent study of 1,400 municipal and local law enforcement agencies, 40% have become dependent on asset forfeiture funds to pay for expenses (Worral, 2001).

The purpose of this paper is to illustrate the contradictory nature of civil forfeiture through a case analysis of *Van Oster v. Kansas* and compare the precedent established in this case to current civil forfeiture laws. This case has not received the proper attention that it deserves in civil forfeiture scholarly literature. *Van Oster* represents a case in which the Supreme Court upheld civil forfeiture, yet the internal logic of their justification suggests that civil forfeiture is unconstitutional.

Additionally, this paper will conceptualize judicial dictions and opinions delivered by Justice Brandeis and Justice Holmes, who both served on the Supreme Court in the beginning of the twentieth century, to show that they imply civil forfeiture is unconstitutional.

Furthermore, there will be a section discussing the new development of the innocent owner defense as established under the Civil Asset Forfeiture Reform Act (CAFRA) of 2000. Congress enacted CAFRA to alleviate many of the problems existent in civil forfeiture, such as some of the problems that will arise in *Van Oster*. To highlight the contemporary relevance of *Van Oster*, this paper will compare it to CAFRA's mandated innocent owner defense. As will become clear in the paper, property can be seized despite an owner's guilt or innocence of a crime.

Asset Forfeiture

Asset forfeiture is a legal power that allows law enforcement to seize property involved in the facilitation of a crime or to seize property that has been used to commit a crime (Cassella, 2013). Once the property is seized, law enforcement takes ownership of the property and can either reserve it or sell it, retaining any proceeds. Some of the funds are funneled directly back to the forfeiting agency, some funds are channeled into victim compensations funds, and others are placed in general funds on local, state, or federal levels. There are three forms of asset forfeiture: administrative forfeiture, criminal forfeiture, and civil forfeiture. Each variation has its own procedures and place within the justice system.

When an agency with proper authority establishes

probable cause that a piece of property is involved in a crime, that agency can place an administrative warrant on the property. The agency must then notify any potential claimants of the impending forfeiture. Claimants have a certain time to place a claim on the property. If no claimant challenges the forfeiture, the property is seized. However, should a person make a claim, the overseeing agency must either return the property or pursue a trial forfeiture[1] (Cassella, 2013). The agency can also choose to pursue a criminal and civil forfeiture concurrently.

In a criminal forfeiture, property is seized post-conviction of an offender (Leach & Malcolm, 1994). When an offender is indicted, any property the government is interested in seizing must be listed within the indictment. Upon conviction, the government forfeits the property listed in the indictment (Cassella, 2013). If any property is not specifically labeled in the indictment, it cannot be seized. Law enforcement used criminal forfeiture extensively during the 1970s as a tactic to fight organized crime. Specifically, law enforcement used it to seize drug proceeds. However, this tactic was highly ineffective. Often, the drug money would be dispersed into various bank accounts or altogether disappear by the time an offender could be convicted (Williams, 2006). Where procedural aspects fail in criminal forfeiture, civil forfeiture makes up for it, if at a constitutional price. Prior to 2000, there was no unifying civil forfeiture legislation. Instead, civil forfeiture powers derived from subsections of various pieces of legislation. A typical civil forfeiture case followed an establishment of probable cause that a piece of property was involved in a crime. Once probable cause was established, a law

enforcement agency had to file for a civil forfeiture warrant on the property, at which point, the agency took possession of the property (Cassella, 2013).

It is important to note that the agency which established probable cause does not have to be the same agency which placed the civil forfeiture warrant. If a state has strict civil forfeiture laws, state or local agencies can bypass those laws through adoptive forfeiture. State agencies render the case to the federal government which then proceeds with the forfeiture (Worral, 2001). Known as equitable sharing, the federal government receives 20% of the funds from the forfeiture, and the state or local agency retains the remaining 80% of the forfeited proceeds (Moores, 2009).

Once a law enforcement agency has placed a civil forfeiture warrant on a piece of property, the property is physically seized until a trial takes place (Cassella, 2013). However, law enforcement agencies do not have to place a warrant on a piece of property to seize it through civil forfeiture. The relation-back doctrine is a power attached to civil forfeiture that grants property rights to the government once property has been involved in a crime (Worral, 2001). Because of the relation-back doctrine, property can be seized after the establishment of probable cause.

Following the Civil Asset Forfeiture Reform Act of 2000, Congress weakened the relation-back doctrine (Leach & Malcolm, 1994). However, the basic premise of the relation-back doctrine is still largely in effect under the category of summary forfeitures. A summary forfeiture is a seizure of property by law enforcement that takes place on scene without a trial being

held (Worrall & Kovandzic, 2008). Typically, summary forfeitures are reserved for property that is illegal of itself, such as illegal weapons and illicit drugs. Defendants are not allowed to claim ownership to property that is illegal to own, which grants power to summary forfeitures (Worrall & Kovandzic, 2008). Some forms of property that are subject to civil forfeiture are also subject to summary forfeiture.

Civil forfeiture is an *in rem* proceeding opposed to *in persona* (Bourdreaux & Pritchard, 1996). In a civil forfeiture trial, a jury determines a piece of property guilty or innocent of a crime instead of a person. Property is not granted the same rights that defendants are. Additionally, civil forfeiture trials take place in civil court despite the property's seizure being in relation to a crime. Many constitutional rights and protections do not apply in civil forfeiture trials because of their classification as *in rem* and because civil forfeiture trials take place in civil courts.

A Brief History of Civil Asset Forfeiture Before *Van Oster v. Kansas (1926)*

Civil forfeiture derives from an old English common law practice known as deodands (Finklestein, 1973). The English Crown heavily abused deodands (Bourdreaux & Pritchard, 1996), and after the United States gained its independence, the founders created asset forfeiture laws that were primarily used to fight piracy. Tracking down pirates was difficult during the 1700s and 1800s due to technological constraints; therefore, the government used asset forfeiture to seize stolen goods when the pirate could not be found (Bourdreaux & Pritchard, 1996).

There are three specific civil forfeiture cases that took place in the 1800s that are of note. First, in *The Palmyra v. United States* (1827), the Supreme Court of the United States declared that the innocence of an owner was not a mitigating factor in a civil forfeiture trial. The Palmyra was a ship whose captain engaged in piratical aggressions against the United States (*The Palmyra v. United States,* 1827). However, the owner of the ship was not on board of the vessel during the piratical act, nor was the owner aware of the captain's intentions to commit piracy. Despite the owner's innocence, the ship itself was involved in a crime and was seized regardless (*The Palmyra v. United States,* 1827).

The Palmyra had been seized based on archaic superstitions that were used to justify deodands in old English common law. Following English deodand law, if an object had the ability to move, it had the ability to commit a crime (Finklestein, 1973). For instance, if a vase were to fall on someone's head and kill that person, the vase would have been guilty of murder and could be forfeited to the Crown under the presumption that it was possessed by Satan (Finklestein, 1973). While these superstitions were not considered by the Supreme Court at the time of *The Palmyra*, it was still believed that if an object could move, it could commit a crime (*The Palmyra v. United States,* 1827).

Later, in *Dobbin's Distillery v. United States* (1877), the powers of civil forfeiture expanded from only personal property[2] to real[3] and personal property. Although real property was never explicitly labeled as a form of property that could be seized through civil forfeiture until the Comprehensive Drug Abuse Prevention and

Control Act of 1970 (Moores, 2009), the precedent established in this case granted law enforcement the power to seize real property much earlier. Real property can include a person's house and business and no limitations were placed on this power until *Austin v. United States* (1993), which prevented the government from seizing both a person's home and place of work in relation to a single, small drug violation.

Finally, in *Boyd v. United States* (1886), the Supreme Court declared civil forfeiture to be "quasi-criminal." This precedent created a legal limbo where civil forfeiture is neither civil or criminal, casting doubt as to where civil forfeiture belongs in the justice system. Civil forfeiture has two qualities, remedial and punitive (Cassella, 2013). The remedial aspect consists of funneling proceeds into law enforcement and victim compensation funds. The punitive fragment derives from punishing offenders who abuse their property and deterring others from using their property illegally (Jenson & Gerber, 1996).

Following these cases, there was an expansion of civil forfeiture powers during the 1920s after the passage of the National Prohibition Act of 1919. The act allowed the government to seize property used in the transportation, manufacturing, or selling of illicit liquor and alcohol. Congress repealed the National Prohibition Act with the Twenty-First Amendment. The National Prohibition Act was federal law at the time of *Van Oster v. Kansas* and the precedent established in this case has had disturbing consequences for contemporary civil forfeiture law.

Legal Analysis of *Van Oster v. Kansas* (1926)

Van Oster v. Kansas is a widely overlooked civil forfeiture case. This can be attributed to the time at which it was decided. As stated, *Van Oster* took place during Prohibition, a fourteen-year span which outlawed the transportation, selling and distribution of alcohol and liquor under the National Prohibition Act of 1919 (Okrent, 2011).

Notably, the property forfeited in *Van Oster* was not seized under the National Prohibition Act, rather under a Kansas statute which mimicked federal Prohibition laws. This statute granted civil forfeiture powers to state and local law enforcement agencies. Although specific precedent regarding the Kansas statute became meaningless after the Twenty-First Amendment, precedent established in this case exemplifies a disturbing example of the abuse of civil forfeiture power.

The plaintiff in this case, Van Oster, purchased a car from a local car dealership. As stipulated in the deal, the car was left on retention by the dealership to be used for business purposes (Van Oster v Kansas, 1926). Prohibition agents arrested an employee of the dealership, Clyde Brown, for allegedly being involved in a bootlegging operation for which Brown used the car to transport illegal liquors (*Van Oster v. Kansas, 1926*). A criminal court later acquitted Brown of the crime.

Following the acquittal of Brown, Van Oster appealed the forfeiture of her car. Of the numerous arguments presented by Van Oster, two are of importance. First, Van Oster claimed that the Kansas statute denied due process guaranteed under the Fourteenth Amendment. Second, and most importantly, Van Oster challenged

the seizure of her car based on the acquittal of Brown. Brown's acquittal proved no crime occurred, and, therefore, the forfeiture of the car was illegal (*Van Oster v. Kansas,* 1926).

The Supreme Court of the United States opposed Van Oster on both her arguments. The Court declared that procedures similar to ones in the Kansas statute regarding civil forfeiture had never been deemed to violate the due process clause of the Fifth Amendment and therefore could not violate the due process clause of the Fourteenth Amendment (*Van Oster v Kansas,* 1926).

Prior to *Van Oster v. Kansas*, there had been many Fifth Amendment claims raised against civil forfeiture proceedings. In the three cases mentioned earlier in this paper, *The Palmyra v. United States* (1827), *Dobbin's Distillery v. United States* (1877), and *Boyd v. United States* (1886), plaintiffs raised Fifth Amendment arguments to appeal civil forfeiture. In a typical civil forfeiture case, law enforcement seizes property before a trial takes place. Therefore, owners are deprived of their property without proper legal process. In previous cases, the Fifth Amendment's due process clause failed as an appellate method because civil forfeiture cases are *in rem* proceedings. The rights of the owner are not taken into consideration in a civil forfeiture case.

By attempting to employ the Fourteenth Amendment to civil forfeiture, Van Oster was attempting a two-step assault on the constitutionality of civil forfeiture. First, the seizure of her car was under a Kansas state statute opposed to a federal statute. Before the ratification of the Fourteenth Amendment, constitutional amendments applied to federal law, not state law. However,

the Fourteenth Amendment's inclusion clause applied most constitutional amendments to state law. To apply the due process clause in the constitution, Van Oster first had to establish that the Kansas statute was subject to constitutional constraints.

Van Oster's second step of employing the Fourteenth Amendment's due process clause provided a chance for the Supreme Court to revisit the meaning of due process in relation to civil forfeiture. Again, due process precedent established under the Fifth Amendment stated that due process does not apply to property, or property owners, in a civil forfeiture trial. However, there had been no precedent regarding the Fourteenth Amendment's right of due process in relation to a civil forfeiture trial at this point. The Fourteenth Amendment could have acted as a catalyst to overturn nearly a century of precedent. Instead, the Supreme Court retained past precedent and stated that due process, even under the Fourteenth Amendment, does not act as a mitigating factor in a civil forfeiture trial.

Van Oster's second argument, the acquittal of Brown, proved no crime occurred. If no crime occurred, then there was no purpose for the forfeiture because, in a civil forfeiture trial, property is seized based on its relation to a crime. However, Van Oster's appeal was one of certiorari. Therefore, Van Oster had to base her argument on constitutional rights and restrictions. The Supreme Court stated that Van Oster failed to raise a constitutional argument as to why the acquittal of Brown showed cause for the reversal of the forfeiture and so the car was seized nonetheless. In other words, Van Oster failed to raise proper legal terminology, so her car was seized despite Brown's acquittal.

Brown's acquittal and the car's seizure represents a disconnect from the justice system and civil forfeiture. The standard of proof is vastly different in a criminal case opposed to a civil forfeiture trial. In a criminal trial, an offender can only be found guilty beyond a reasonable doubt. In a civil forfeiture case, property can be seized based on a preponderance of evidence, a lower burden of proof (Johnson, 2002).

The difference in these two levels of proof are paramount. The purpose for the different standards of proof derives from the perceptions of criminal court versus civil court. Criminal courts are designed to punish offenders whereas civil courts are designed to settle disputes between private parties. Moreover, civil forfeiture is not solely a punishment but it is also regarded as remedial (Cassella, 2013) (Stillman, 2013) (Bourdreaux & Pritchard, 1996). This is exemplified best by the "quasi-criminal" ruling of civil forfeiture delivered in *Boyd v. United States* (1886).

In Van Oster's case, law enforcement was essentially pursuing a criminal action and civil action against Van Oster's car at the same time. By pursuing both a criminal action and a civil action concurrently, the government attempted to punish or deprive property based off one potentially illegal action while using varying standards of proof. Beyond a reasonable doubt is a more difficult level of proof to obtain than a preponderance of evidence. Therefore, by using civil forfeiture, the government can almost ensure a favorable outcome at the end of the case.

Not only are the levels of proof between criminal trials and civil trials vastly different, civil forfeiture is unique in that it is exempt from the exclusionary rule of the Fourth Amendment (Jenson & Gerber, 1996). Per the exclusionary rule, law enforcement is barred from using illegally obtained evidence in a trial. Additionally, law enforcement agencies are prohibited from using evidence gained after the establishment of probable cause (Jenson & Gerber, 1996). Civil forfeiture, which already has a lower standard of proof than a criminal court, can use illegally obtained evidence and post seizure evidence to establish probable cause.

Not to mention, in a civil forfeiture trial, the government does not have to prove that a crime happened, evidenced by *Van Oster*'s precedent. To prove something beyond a reasonable doubt is the closest form of proof that a jury can confirm as to whether a crime occurred and whether a defendant is guilty. The acquittal of Brown casts doubt as to whether the crime occurred, and if the crime did occur, it casts doubt if Brown or the car was involved. If no crime occurred, or if the car was not involved in the crime, the forfeiture of the car is illegal. Consequently, by employing a lower standard of evidence in a civil forfeiture trial, the government is then able to seize property even if no crime was legally defined to have transpired. Precedent established in *Van Oster* grants the government power to seize property illegally when no crime has been defined to have occurred.

Discussion

Using the precedent established in *Van Oster*, this section of the paper seeks to illustrate the unconstitutionality of civil forfeiture. Specifically, it will draw upon the earlier information established in this paper including an understanding of asset forfeiture, the three early cas-

es of civil forfeiture during the 1800s, and the precedent of *Van Oster*. Furthermore, this section will conceptualize and analyze statements from Justice Oliver Holmes and Justice Louis Brandeis, both of whom served on the Supreme Court of the United States during the early twentieth century. Although the Supreme Court upheld *Van Oster*, the logic presented by the court and by these justices suggests that *Van Oster* should have been overturned.

Civil forfeiture has a dual nature; it is concurrently remedial and punitive. Its remedial aspect derives from the allocation of proceeds to law enforcement and victim compensation funds to help prevent, fight, and cope with future crime. Civil forfeiture is punitive because it is designed to punish owners who use their property illegally, deter potential criminals from using their property illegally, and prevent criminals from profiting from crime (Cassella, 2013) (Jenson & Gerber, 1996).

In a decision delivered by the Supreme Court in *One Ford Coupe v. United States* (1926), the Supreme Court of the United States acknowledged that should something be deemed solely a punishment, it must be viewed as such under the law (One Ford Coupe v United States, 1926). As an owner of property in a civil forfeiture case, there is no other possibility than punishment. In a civil forfeiture trial, if the property is found guilty, the owner is punished through the deprivation of their property. There is no chance for remedy for an owner. If the owner can only be punished, then in all asset forfeiture cases, the legal actor—which is the government—is always punishing the owner.

Punishment through civil forfeiture is unconstitutional.

Supreme Court Justice Oliver Wendell Holmes stated "statutes…are unconstitutional…[if] they punish the plaintiff with heavy fines and penalties…without defining the crime…of which he is guilty and without providing any criminal procedure or right guaranteed him by the Constitution of the United States…" (Holmes Paper Section 4 Sequence 17). Per Holmes' criteria, civil forfeiture punishes owners unconstitutionally.

First, civil forfeiture punishes owners without defining a crime for which they are guilty, as evidenced by the precedent established in *Van Oster*. Van Oster was punished through the deprivation of her property despite Brown's acquittal. Second, civil forfeiture punishes owners without providing proper criminal procedure. Civil forfeiture trials take place in civil court as opposed to criminal court. Correspondingly, the guilt and innocence of the owner does not act as a mitigating or aggravating factor in a civil forfeiture trial because the property is on trial, not the owner. Third, civil forfeiture punishes owners without providing proper constitutional protections, illustrated by the lack of due process rights guaranteed by the Fifth and Fourteenth Amendments. Therefore, per Justice Holmes' requirements, civil forfeiture punishes owners unconstitutionally.

This aligns with what Justice Brandeis stated in another case: "courts of justice will not redress a wrong done by the defendant when he who seeks redress comes into court with unclean hands" (Brandeis Papers Reel 36 Frame 00590). Brandeis conveyed that if a person wished to receive compensation for a wrong in court, that person will not be compensated if that person has committed a wrong as well. Brandeis later stated the application of this rule is more persuasive if the ille-

gal actor is the government (Brandeis Papers Reel 36 Frame 00590).

In a civil forfeiture case, the government is compensated for a wrong, or a crime. Compensation is in the form of forfeitable assets. Again, per Holmes' constitutionality requirement, this compensation is obtained through unconstitutional means. In effect, the government is compensated for a wrong while also committing a wrong. Following Brandeis, this should not be allowed by the courts. Again, to Brandeis, this becomes more persuasive when the illegal actor is the government. In all civil forfeiture cases, the legal actor is always the government, so if civil forfeiture is unconstitutional, the government is then always acting illegally when employing civil forfeiture.

Civil forfeiture is unconstitutional. It violates multiple Amendments, punishes owners without proper due process, and compensates the government for crime, causing the government to form a symbiotic relationship with crime. Contrarily, civil forfeiture cannot simply be removed from a practical standpoint. As stated before, many civil forfeiture proceeds are dispersed into law enforcement funds. During a study of 1,400 municipal and local police departments, 40% were found to be reliant on civil forfeiture funds (Worral, 2001). To remove civil forfeiture would be to act irresponsibly and deprive these departments of the funds they need.

Equally important, civil forfeiture prevents criminals from profiting from crime. Although other forms of asset forfeiture also serve this purpose, none do so as effectively as civil forfeiture. In an administrative forfeiture case, once a claimant has challenged the forfei-

ture, the forfeiture must proceed to a trial forfeiture— either a criminal forfeiture or a civil forfeiture. During the 1970s, law enforcement attempted to employ criminal forfeiture to cripple organized crime by targeting drug proceeds. By the time a criminal trial was over, the money would be dispersed and was largely unobtainable.

Boyd v. United States' ruling of civil forfeiture as being "quasi-criminal" is the best definition of civil forfeiture. It is designed to punish, but it does so without following criminal procedure. Civil forfeiture has become so ingrained in the criminal justice system as a remedial tool, that to completely remove it would be irresponsible without a plan to subsidize it. The next section of the paper will discuss possible asset forfeiture solutions to civil forfeiture and if these solutions would have changed the outcome of *Van Oster*.

CAFRA's Innocent Owner Defense: A Proper Solution to *Van Oster*?

This section of the paper will analyze contemporary civil forfeiture law in the context of *Van Oster*. Specifically, it will determine if the precedent established in *Van Oster* could exist under CAFRA's innocent owner defense. Despite the large time gap between *Van Oster* and CAFRA, it is imperative to analyze both together as Congress designed CAFRA to alleviate the internal inconstancies of civil forfeiture and prevent precedent similar to *Van Oster* from recurring.

As stated earlier in this paper, the guilt or innocence of an owner does not act as a mitigating or aggravating factor in a civil forfeiture trial. Fortunately, after 2000, CAFRA enacted an innocent owner defense. However,

there are limits to this defense. The innocent owner defense is not constitutionally protected (Johnson, 2002). Lacking a constitutional backbone, the innocent owner defense has been interpreted differently in various state and federal circuits.

One definition of the innocent owner defense is as follows: should the conveyance of property be unlawful and should the property be used unknowingly to commit an illegal action, then the owner can be considered innocent (Johnson, 2002). The variables of conveyance and knowledge of the illegal act have been critical in formulating a working definition of the innocent owner defense. Some courts require that both the property be conveyed illegally and for the owner to be ignorant of the illegal use of his or her property for the innocent owner defense to work. Other courts require only one factor to be satisfied, and others still have more complicated definitions of when to employ the innocent owner defense.

To satisfy part of the innocent owner defense, the owner must be ignorant of the illegal usage of their property. It is important to note that not all courts treat this defense similarly. Some courts place more emphasis on the ignorance of the illegal usage than the illegal conveyance of property. However, many courts state that owners must be ignorant of their property being used illegally to ensure that the illegal usage of property was against the consent of the owner (Johnson, 2002). Asset forfeiture exists in part to punish owners who use their property illegally, so where the illegal usage of property is aligned with the consent of the owner, asset forfeiture is designed to punish that owner.

There is a third factor of the innocent owner defense which is whether the owner did all that was within reason to prevent the illegal usage of their property (Johnson, 2002). In some courts, this requirement is satisfied by an establishment of illegal conveyance of property or ignorance of an illegal action. If an owner has their property stolen, the owner can no longer enforce their will over the property. Additionally, if the owner is ignorant of potential wrongdoing, the owner may not reasonably be able to prevent the illegal usage.

Although this third factor is sometimes satisfied by an establishment of the first two factors, it can also be independent (Johnson, 2002). For example, if a person's car is stolen and is used to rob a bank, but the owner did not call the police to report a stolen vehicle, the reasonable action requirement may not be satisfied. In this case, the owner would have had to report the car stolen to law enforcement to fulfill the third requirement of the innocent owner defense. Similarly, if an owner of a car knows their car will be used to rob a bank and does not attempt to prevent the robbery, or alert authorities, this third requirement will not be satisfied.

The innocent owner defense is enforced differently by a state and circuit basis. Because there is no universal consensus on the innocent owner defense, it is important to analyze it under various conditions. First is a lenient viewpoint of the innocent owner defense, where if any one of the factors is satisfied, it will be enough to invoke the innocent owner defense. Second will be a moderate viewpoint where two of the factors must be satisfied. Lastly, will be a strict viewpoint where all three factors must be satisfied. For the sake of argument, it will be assumed that Brown did commit a crime.

First, Van Oster was ignorant of the intentions of Brown. Although the car was left on retention by the dealership, Van Oster was unaware exactly how Brown would use the car, and was unaware that the car would be used illegally. Therefore, Van Oster was ignorant of the illegal usage of her car and under the lenient definition, the innocent owner defense would have prevented Van Oster from losing her car.

Whether Van Oster did all that she could to prevent the illegal usage of her car depends on the definition of reasonable. Again, as a second factor, the owner must prove that she did everything reasonable to prevent the illegal usage of her car. If Van Oster was truly ignorant, there is not much she could have done to prevent the illegal usage of her car. However, it could be argued that Van Oster had a duty to constantly question the actions of Brown to ensure the car was not being used illegally as it was known that Brown would be using the car regularly. Therefore, depending on the definition of reasonable, Van Oster could have, or could not have employed the innocent owner defense under the moderate viewpoint.

Following the final factor, the conveyance of Van Oster's car was completely legal. Van Oster knew that Brown would be using her car. Under the strict definition of the innocent owner defense, Van Oster could not have employed the innocent owner defense.

Conclusion

Precedent established in *Van Oster* represents a fundamental disconnect between the legal spirit of the Constitutional and its application. It is clear to see why an innocent owner should not be deprived of property, especially when no crime has occurred. Unfortunately, the precedent still exists, even with the adoption of an innocent owner defense. Although civil forfeiture does not match up with the spiritual intent of the Constitution, it cannot be easily repealed or replaced because of law enforcement's dependency on it as a source of revenue and justice.

To replace civil forfeiture with either administrative forfeiture or criminal forfeiture would be irresponsible. Both procedures would be unable to satisfy the void left behind by the removal of civil forfeiture. However, to leave civil forfeiture intact without reform would be to rob innocent owners of their property.

The most comprehensive attempt at civil asset forfeiture reform under CAFRA was not enough to prevent abuses by law enforcement. Issues intrinsic in civil forfeiture do not stem purely from procedural or constitutional inconsistencies, but also from larger social and political contexts. There was a large spike of civil forfeiture usage following the War on Drugs which not only created many new drug related crimes, but also restricted police funding. It is not the fault of police departments that abuse civil forfeiture, but the larger social issue of over criminalization and underfunding. To solve the civil forfeiture debate, civil forfeiture must be conceptualized as a symptom of a much larger illness.

Notes

1.   Trial Forfeiture – is either a civil forfeiture or a criminal forfeiture. An administrative forfeiture is not a trial forfeiture because no trial takes place when or after the property is seized.

2. 	Personal Property – A form of property that can be easily moved. Typically, it refers to smaller items but can include cars or ships, as in the case of The Palmyra.
3. 	Real Property – Property that cannot be easily moved: it is usually something tethered to the land or the land itself.

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