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TO THE FORDHAM COMMUNITY:

It is our pleasure to present to you the third volume of the Fordham Undergraduate Research Journal. In accordance with its mission, FURJ continues to disseminate a diverse body of undergraduate research spanning the spectrum of the academic world from the physical sciences, to the social sciences, and to the humanities. We feel that the breadth of the third volume attests to the varied and sophisticated interests of Fordham undergraduates, and we are honored to showcase the fruits of our peers’ academic labors. Furthermore, we are proud to play a role in the University’s ongoing dedication to undergraduate research. As you peruse these pages, please take a moment to admire the successes of your students and peers. Besides the authors published in this volume, a number of students are recognized in our select list of undergraduate research accomplishments. In addition, we have shared the names of the talented and dedicated faculty who were nominated for this year’s Faculty Mentor Award. We wish to extend our thanks to them and to all the faculty members who share their passion and guidance with undergraduate researchers at Fordham.

This year was one of great change for the Journal. In the first place, you’ll notice that the Journal itself is smaller in size. We decided to change many of the elements of design in the hope of creating a cleaner and more professional layout for our readers. Besides this change in its appearance, FURJ started in September with an executive board composed almost entirely of new members. As editors-in-chief, we have admired and appreciated the way in which these individuals have stepped up to the challenge of leading a staff and taken responsibility for their respective sections of the Journal. Finally, Xavier Montecel, FCRH ’12, joined us as the interim director of the Fordham Undergraduate Research Journal. We are thankful for the gracious assistance and dedication he has demonstrated in this role.

Of course, this edition of FURJ could not have come into existence if not for the backing of a group of very dedicated individuals. We would like to extend our sincerest thanks to Dr. Michael Latham, dean of Fordham College at Rose Hill, for his continued and unwavering support of this project. We would also like to thank all of the members of the FCHR Dean’s Office, especially Ms. Dorothy Riely and Dr. Robert Parmach, not only for sharing their work space with FURJ but also for sharing great times and fond memories. Finally, we would like to thank Dr. Michelle Bata. The successes we have achieved in the three years since FURJ’s inception are the result of the enthusiasm, encouragement, and guidance that she so generously and tirelessly shared with us during her tenure as our administrative director. We look back with great fondness on the times spent and the innumerable laughs shared in her office. It is to her that we wish to dedicate this edition of FURJ.

SINCERELY,

Margaret Palazzolo, FCRH ’13

Andrew Steffan, FCRH ’13

Co-Editor-in-Chief

Co-Editor-in-Chief
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The FURJ staff wishes to thank the following for their support: Fordham University’s Office of Marketing and Communications, the faculty and students who served as faculty and peer reviewers, the FURJ Faculty Advisory Board, and the FCRH and FCLC Dean’s Offices and their student workers.

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Right: Executive Board; Below: General Staff; Credit: Teresa Salinas
that increased communication between members of the Consortium has been implemented is through formal forums. Last year, Fordham hosted two symposia to promote the exchange of ideas regarding collaborative efforts and results from research. At the Conservation Conversations Symposium, which included researchers from Fordham, the New York Botanical Garden, the Bronx Zoo, and the American Museum of Natural History, members of the Bronx research community were able to share their perspectives on conservation research, discuss careers in conservation, and identify opportunities for collaboration in the pursuit of funding for their work. Additionally, Fordham hosted the Einstein-Fordham Research Symposium, at which professors presented their research and disseminated information about available opportunities for undergraduate and graduate students to work on research projects in their labs.

Some members of the Fordham community, like Sarah Reda (FCRH '13), have collaborated with member institutions since before the Consortium existed. Reda has worked closely with the Curator of Ornithology at the Bronx Zoo, Dr. Nancy Clum, on several research projects. “I’ve had an excellent experience at the Bronx Zoo, where I was able to work closely with the faculty and animals,” she told us. Reda especially appreciated the opportunity to work with a female scientist and would like to stay involved with the Wildlife Conservation Society throughout her life.

Members of the Consortium hope to replicate and expand upon beneficial relationships such as these. One of Fordham’s first collaborations since the formation of the Bronx Science Consortium involves Patricio Meneses, Ph.D., an associate professor in Fordham’s biological sciences department, and Robert Burk, M.D., a professor and vice chair for translational research at Einstein. Both had previously focused their research efforts on human papillomavirus (HPV) and have now teamed up to share and help grow one another’s work. Meneses researches the virus’s genome in his lab in order to discover a way to inhibit it from invading a human cell. Burk applies Meneses’ work in a clinical setting to study potential preventative measures against HPV and these measures’ effects on large populations. Individually, the studies of both scientists were strong, but with the help of the Consortium, they became that much stronger.
Other long-term goals of the Consortium deal more specifically with science education. Members of the Consortium hope that they will be able to implement programs that engage members of the general public in science education and research. Fordham itself has begun to consider research, education, and community involvement initiatives that might translate into useful collaborative projects when linked to partner institutions. Furthermore, the New York State Education Department has approved the Einstein-Fordham M.S. in Biomedical Sciences, a degree program developed by Tuininga that will allow students studying biomedical science to benefit from the partnership between Fordham University and Einstein College. This program will target students from the Bronx who are at an economic or educational disadvantage and want to pursue careers in medicine, attend graduate school, or conduct research. Each of these approaches speaks to the Consortium’s predominant goal: benefitting the Bronx community while advancing science.

Stay tuned for new developments in 2013 as Fordham’s co-directors for the Bronx Science Consortium initiative, Tuininga and Ron Jacobson, associate vice president at Fordham, meet with Consortium directors from each of its member institutions to lay a solid foundation for future cooperation among its members.

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**Faculty Research Mentor Award**

FURJ is pleased to announce the nominees for the 2012-2013 Faculty Mentor Award. Each of these faculty members was nominated by a student for showing consistent passion and dedication in working with undergraduates and promoting undergraduate research at Fordham.

Melkana Brakalova, Mathematics  
Edward Dubrovsky, Biological Sciences  
Silvia Finnemann, Biological Sciences  
Susanne Hafner, Modern Languages and Literatures  
Evon Hekkala, Biological Sciences  
Melissa Labonte, Political Science  
James Lewis, Biological Sciences  
Olena Nikolayenko, Political Science  
Rouba Rached, Natural Science

**Congratulations to the winners of this year’s Faculty Mentor Award:**

**SCIENCE**

**EVON HEKKALA, BIOLOGICAL SCIENCES**

Professor Hekkala was nominated by Kaitlin Abrams for her inclusivity, for her ability to relate the smaller steps of research to the bigger picture, for the environment of excitement that she creates, and for the passion that she has fostered in Kaitlin about her research.

**HUMANITIES**

**SUSANNE HAFNER, MODERN LANGUAGES AND LITERATURES**

Professor Hafner was nominated by Amy Gembara for teaching Amy how to expand upon her knowledge and skills throughout the entire research process. She has given Amy many academic opportunities, including traveling abroad for her project.

**SOCIAL SCIENCE**

**MELISSA LABONTE, POLITICAL SCIENCE**

Professor Labonte was nominated by Kira Rosi-Schumacher for working with her even during a sabbatical and for inviting her to do research on the introduction of Biometric Technology in Sierra Leone’s November 2012 elections. The two have recently completed field work in Sierra Leone to deepen their research.
Psychology Graduate Student Challenging Diagnoses to Improve Treatment for At-Risk Kids

by Taylor Garre, FCRH '16

SPENCER CRUZ-KATZ, a doctoral student in Fordham's psychology department, will begin a research project this spring that will examine the nature of complex trauma in at-risk adolescents. Complex trauma is the repetitive, prolonged, unpredictable exposure to traumatic events, such as neglect, physical and sexual abuse, or violence, which collectively affects a child's psychological, psychosocial, and neurobiological development. It often occurs within the primary care giving system, most often with the child's parents at the source.

The main goal of the study is to determine if the “identification of complex trauma in an adolescent will help us to better estimate their likelihood to commit an aggressive or delinquent act,” said Cruz-Katz. He believes some of the symptoms of complex trauma in adolescents—ranging from cognitive difficulties and low self-esteem to problems with trust and self-destructive behavior—are too often lumped together with those of other common disorders, such as Attention Deficit-Hyperactivity Disorder and Post-Traumatic Stress Disorder, resulting in misdiagnoses and ultimately ineffective treatment. Cruz-Katz hopes that his research will help support the argument that these symptoms should instead be categorized as complex trauma, and that his experimental method will yield more accurate diagnoses and improved approaches to treatment as a result.

Cruz-Katz and his team of graduate and undergraduate students will study a group of about seventy adolescents at an undisclosed facility in Westchester County. They will begin by conducting an initial one-on-one assessment of each participant in order to determine if the subject is exhibiting behaviors indicative of complex trauma. Participants will also be asked to record the frequency of their aggressive or delinquent acts. Cruz-Katz and his assistants will then refer to the domains of complex trauma impairment—perception, information processing, affect regulation, impulse control, and personality development—to determine, based on the information from the initial questionnaires, if participants meet the proposed criteria for complex trauma. During this initial assessment the adolescents will also undergo a second interview to separately determine their “risk,” or probability of partaking in aggressive or delinquent acts, and “treatability,” or their chances of effectively managing their aggression or delinquency with proper treatment. The team believes that by including complex trauma within risk as-
sessments, there will be a lower chance that subjects will have their risk estimate misidentified as a result of being misdiagnosed. “The goal is to better identify an adolescent’s risk by accounting for a variable, such as complex trauma, that hasn’t been considered before,” said Cruz-Katz.

At the second and final one-on-one assessment, measures of aggressive and delinquent acts over the last 90 days will be recorded. The team will then compare the frequency of aggressive and delinquent acts prior to participating in the study to the frequency of those acts over the course of the three months following the assessment. Cruz-Katz anticipates that he will observe the adolescents identified as having complex trauma to “show significantly higher frequencies of aggressive and delinquent acts,” which would ultimately support his hypothesis. His hope is that with an improved understanding of the connection between complex trauma and risk for aggression and delinquency, adolescents will receive treatment better suited to helping them overcome their symptoms and more effective in their management of aggressive and delinquent tendencies.

Cruz-Katz is looking for undergraduates to help organize study data and assist in administering self-report tests to participants. If interested, please email cruzkatz@fordham.edu.

DIGITALIZED TEXTS AND DATA organized into searchable maps are phenomena that modern students are accustomed to seeing in social media, but not as often in the academic world. However, some Fordham professors are advancing the field of digital humanities, or the intersection of computing and the liberal arts, bringing the tradition of the academy in contact with today’s technologies.

In the theology department, Dr. Patrick Hornbeck, associate chair for undergraduate studies at Rose Hill, is one of the leading advocates for increasing the use of digital humanities across Fordham. “Digital humanities, over the last 50 years, represents a range of different scholarly methods and techniques that people would use to approach digital humanities questions, with the tools that have been given to us by new media,” explains Hornbeck. Over the span of 30 years, our methods of storing and accessing information have changed drastically, from creating and looking up indices to typing a phrase into online search engines. In light of this, Dr. Hornbeck is currently involved in an online effort to digitize and publicize the writings of medieval philosopher John Wyclif, as well as other medieval figures. Even though the works pertain to his specialty, Hornbeck admits that translating thousands of pages manually can be a long, tedious exercise. “I read medieval Latin, and it is even not a fun experience for me.” According to Hornbeck, one of the very first digital humanities proponents was an Italian Jesuit, named Roberto Busa. In the late 1970s, Father Busa and the founder of IBM, Thomas Watson, trained a computer to read the words of Thomas Aquinas and associate different words in different contexts. This approach was innovative for its time, although it still took an excessive amount of time to input text manually.

One way that massive quantities of information are processed today is through crowd-sourcing, or the process of outsourcing tasks to various people. These unpaid volunteers agree to do segments of a specific, meticulous task that would take hours for a single person to do. Transcribing a whole, old novel can be a long, painful process for one historian, for instance, but a group of historians each transcribing chapters or pages helps to quicken the process. Fordham’s History Sourcebook used crowd-sourcing to transcribe one of British philosopher Jeremy Bentham’s books. Hornbeck is currently developing a site with the Center for Digital Research in the Humanities at the University of Nebraska-Lincoln that will crowd-source the task of translating to people around the world. This global cooperation that exponentially speeds the translation process is one example of the
immense benefits of combining computing skills with humanities.

Dr. Roger Panetta, adjunct history professor at Fordham College at Lincoln Center, also sees digital humanities as a key tool for ensuring that large bodies of text are widely available for academic use. The digital humanities, he believes, are an instrument appropriate for a generation having grown up as “digital natives.” Six years ago Dr. Panetta was first offered a teaching position at Fordham with the unique role of combining his passion for history with technology in order to make an online database from these numerous documents. Dr. Panetta also utilizes web devices and software programs to build a new kind of partnership with his students that promotes research collaboration in the classroom and presents history in fresh ways. “In comparison to my students, I’m not a ‘native’ to technology, but rather adopted into this modern field,” he said. “But I use the digital humanities as a teaching device and a research device.”

Dr. Panetta joined Fordham after numerous volumes and sources about the Hudson were acquired from Marymount College, Fordham’s all-female counterpart before the university became a co-ed institution. “I wanted to make these materials readily accessible. So many sources are already available on the Hudson and scanned into databases,” said Dr. Panetta. His digital research on the Hudson has involved partnerships with the Westchester County Archives, the Historical Society of Rockland County, and the Department of Environmental Conservation to create a searchable, easy-to-navigate archive for scholarly use.

Using the permanence of the Internet to his advantage, Panetta also includes digital projects in his New York City history classes at Fordham in order to promote serious modern scholarship and research habits. “I really think the digital medium available today is great for getting students engaged in history. Term papers are becoming a real source of fatigue for college students nowadays—with a digital webpage, the student’s work is displayed publicly as a serious long-term research project.” The students are split into different task groups at the start of their web project in order to complete the final product by the end of the semester. At the Annual Research Forum in January, the class is invited to present their findings on various New York trends in front of Fordham professors. “It’s really great to let the students shine and having them take real ownership into their work,” Panetta added. He believes these projects lend themselves as a source of pride for the students, giving them an opportunity to include an academic achievement on their résumés.
As an authority on New York City history, Panetta is highly motivated by “backyard history,” a term that refers to the historical value of nearby sites. He has taught on-site at the Brooklyn Bridge, South Street Seaport, and the neighborhoods of Westchester, lecturing on the significance of these landmarks and relating them back to classroom discussions and assignments. Says Panetta, “Our school’s motto is ‘New York is My Campus,’ and I support that. We’re plopped right in the middle of the city here at the Lincoln Center campus. If I can get students to take a second glance at an old building and feel the layer of history embedded there, then I have done my job.” Dr. Panetta finds these field trips, which create a more eager classroom atmosphere, add depth to the students’ final web-design tasks. His combination of the hands-on approach to learning with the digital projects implemented in the students’ coursework leads to excellent results and achievement at the end of each semester.

Though some more traditionally oriented professors may snub the use of the digital media, Panetta emphasizes the many opportunities that the technological age offers. As our contemporary age moves from the printed page to the screens of laptops, smartphones, and e-readers, professors like Panetta and Hornbeck show Fordham’s commitment to embrace this evolution in academics.

Media Professor Tracks Changing Face of Investigative Reporting

by Taylor Garre, FCRH ’16

BEFORE COMMUNICATIONS AND MEDIA studies Professor Beth Knobel started teaching at Fordham in 2007, she worked as an on-air correspondent and producer for CBS News. After 20 years of work in the field, she chose to become a professor in order to “take a step back” and look at the current state of journalism. Along with a team of graduate and undergraduate students, she is doing research on watchdog reporting, which is the active investigation of news stories pertaining to illegal practices such as political corruption or financial wrongdoing.

According to Knobel, watchdog journalism, otherwise known as investigative journalism is “reporting that applies scrutiny to government actions.” Her research students try to differentiate “deep reporting” from news reporting, which does not require an extensive amount of investigation. Deep reporting describes a type of journalism that reveals things that
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are otherwise difficult to find without dedicating weeks to intense research and investigation. Knobel uses journalism around Watergate, the famous political scandal under the Nixon administration, as an example of deep reporting. Washington Post reporters Bob Woodward and Carl Bernstein spent about two years investigating the break-in of the Democratic National Convention.

Watergate, however, took place more than 40 years ago, and the frequency of investigative reports has been on the decline ever since. Knobel claims the lack of deep reporting is a result of the world financial crisis and a shrinking market for journalists. Watchdog journalism requires a massive amount of resources for a thorough investigation, much more than daily reporting for a news organization, because it entails a five to six month research project. It becomes “a really easy thing to cut when money is tight or there are not enough people working for you,” said Knobel.

Knobel’s preliminary research on this topic has shown that some of the larger news publications, such as The New York Times, are cutting back on watchdog journalism. These popular newspapers, Knobel theorizes, already have a large and dedicated readership who will continue to read the issue despite the absence of investigative articles. In an interesting contrast, some medium-sized regional papers are starting to spend their limited resources on deep reporting. “In a world where people have to be convinced to spend their money on a newspaper, they have to get something that they can’t get anywhere else,” said Knobel, “and that is watchdog reporting.”

Knobel is financing part of the project herself and part with aid from such sources as Fordham’s undergraduate research grants program. She also received one of four national Emerging Scholars Grants for 2013 from the Association for Education in Journalism and Mass Communication, one of the professional organizations in her discipline. Her team examines the front pages of widely circulated papers to look for cases of watchdog journalism. The research will be conducted on seven papers, one network television news program, and Time and The Atlantic magazines. The team will soon start to examine news sources online as well. The data used dates back 20 years, starting in 1991, and will be employed to try to create “a 20–year portrait on how media have done their reporting on government and policy,” said Knobel. The students analyze the length of the articles, the people interviewed, and the issues discussed in order to make comparisons between publications and time periods.

Dr. Knobel was one of the three professors awarded the inaugural FURJ Faculty Research Mentor Award in April 2012 for working on research with students. She enjoys overseeing the research process with students, which involves getting students excited about investigation and encouraging them to implement their new analytical skills in other classes. Donavan Longo (FCRH ’13), a student on Knobel’s research team since the project’s inception in 2011, explains that Knobel “has become a mentor to me. I have learned better ways to organize myself, how to study for exams more effectively, and to produce more professional and efficient work.” The research will continue over a three-year time span and Knobel has already been contacted to write a book on her findings.

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News Staff Bios

Lauren Kawulicz is from Brookfield, CT, and is interested in environmental policy. Her interest in the relationship between policy and science led her to learn more about the Bronx Science Consortium, an initiative that formally began in May 2012. She plans to continue her studies at Fordham and remain open to the university’s many opportunities.

Taylor Garre is a native of Connecticut and a communications major. Her time on the Freshman Year Research Experience inspired her to join FURJ and discover the many research opportunities at Fordham. She plans to continue writing and researching throughout her Fordham career.

Sara DeSimine is a native of West Windsor, NJ, and is a communications and media studies major. She is currently interning at a food and wine public relations company and aspires to work with food and beverage related media and writing after graduation.

Megan Cattel is from Tampa, FL. She is double majoring in English and international studies. Megan also does internal public relations for the Asian Cultural Exchange and is very interested in diversity issues.
“The Right to Bare Arms”
Implications of Feminist-Humanitarian Justifications for War

Rebecca M. Lindner, FCRH ’13

Dr. Orit Avishai, Department of Sociology & Anthropology
Faculty Advisor

Rebecca Lindner, FCRH ’13, is originally from Morrison, CO, and is a sociology major with a double minor in philosophy and Spanish. Her research into the Western feminist and humanitarian aspects of war propaganda following 9/11 began as a part of her Senior Thesis in the Rose Hill Honors Program.
CAN WAR BE HUMANITARIAN, noble, or feminist? Any war entails a loss of civilian life, making it counter-humanitarian in that it cannot prevent the suffering of a large number of innocent people, but can only add to it in the short-run. The very principles of feminism—in its most basic form as protecting the rights of women—seem to contradict war; “in any war it is the women who pay the maximum price. War affects all, but it affects women much more intimately...war ignores women's voices” (Forum, 2002, p. 96). For centuries, war has been considered to be a militarized display of virile masculinity, and, though it may be rhetorically depicted as fought for the sake of women, the women have no say in the war itself. These contradictions between the principles of feminism/humanitarianism and war do not mean, however, that proponents do not use these ideas to justify war, especially in the contemporary era.

This paper investigates one of the most dramatic instances in which supporters of war co-opted Western feminist sensibilities and ideas: the United States’ war in Afghanistan. Particularly in 2001 and 2002, pro-war rhetoric and propaganda drew attention to the “plight of Afghan women” under the Taliban in order to publicly justify entering into a military conflict. This paper examines how Western feminist ideas were proposed to be universal concepts in order to achieve a moral pretext for war in the Middle East, with severe consequences for the perception of women both in the United States (“here”) and in Afghanistan (“there”). The concepts of rights, self-determination, and agency vouchsafed by Western feminism provide a method to distinguish “liberated” women from those in need of salvation and aid. In fact, neo-liberal ideologies, such as those depicted in Samuel Huntington’s Clash of Civilizations thesis, require a distinction to be drawn between presumably Muslim women in Afghanistan and presumably Christian women in the U.S. in order to intensify and explicate the inherent differences between the two societies. The media, along with others, create and augment this separation, simultaneously reinforcing the freedom and rights of “liberated” American women and establishing a humanitarian-feminist pretense for colonialist and imperialist state action abroad.

At this point, it is crucial to establish several key distinctions at play in this paper. Most importantly, it must be understood that the religion of Islam and the Taliban are not to be seen as one and the same. The Taliban is an Islamist regime that took the most extreme view of the principles of Islam and co-opted them in order to create a totalitarian regime over the Afghan people. Gross generalizations should not be made about Islam itself: Islam is a major world religion with a wide variety of sects, much like any other religion. Two huge issues with the pro-war campaign that this paper discusses are the oversimplification of Islam as innately oppressive to women, and the conflation of Islam and the Taliban which has led to an increase in Islamophobia in the United States. Another key point concerns the use of the term “feminism.” When speaking of how feminist ideas were used in the pro-war propaganda campaign, this paper refers exclusively to Western feminist principles that were incorrectly universalized. In the conclusion, the paper discusses feminism as a multicultural concept and the possibility of this usage.

A “Noble and Feminist War:” The Contradictions of the (Feminist)-Military-Humanitarian Complex and the Clash of Civilizations

In the wake of September 11, 2001, the United States government expressed a deep sense of grief and
deep-seated fear, which were quickly subsumed by furious anger. President George W. Bush summarized these emotions, stating: “thousands of lives were suddenly ended by evil, despicable acts of terror. The pictures of airplanes flying into buildings, fires burning, huge structures collapsing, have filled us with disbelief, terrible sadness, and a quiet, unyielding anger” (Bush G., 2001a). Soon after, the target of this anger was specified: Al Qaeda, and, more broadly, the Taliban in Afghanistan. With a target in mind, the U.S. began a propaganda campaign to justify an imperialist and neo-colonialist war in Afghanistan as a humanitarian and feminist conflict with a so-called evil Islamic “Other.” This campaign forcefully portrayed the civilians, particularly females, of Afghanistan as helplessly suffering under an Islamist totalitarian regime and in need of Western humanitarian salvation.

Historically, humanitarianism, even purportedly non-violent non-humanitarianism, has carried connotations of imperialism and colonialism. The rhetoric of humanitarian action calls upon developed (rich, Western) countries to provide aid to Third World (poor, non-Western) countries, with the assumption that “we” (the First World) are qualified to help “them” (those poor, starving African children, or, in this case, those poor oppressed Afghan women). We are obligated, then, to choose those who “deserve” our aid. If another group is oppressing these “deserving innocents,” says the pro-humanitarian discourse, the West must provide military support to remove the oppressive despotism from power. President Bush explained the U.S. government’s iteration of this ideology in September, 2001: “the United States respects the people of Afghanistan—after all, we are currently its largest source of humanitarian aid—but we condemn the Taliban regime” (Bush G., 2001a).

Bush differentiates the innocent Afghan citizen from the terrorist, explaining how the U.S. must use violence against an entire region for the betterment of “respectable” Afghanis.

At play in the defense of the War in Afghanistan, the selective “military-humanitarian” complex thoroughly masks modern-day imperialism. Though with purportedly noble motivations, imperialism is precisely the action of the military-humanitarian complex: fighting for control in another area for the good of its people and of the world. Advocates of such policies take the stance that “imperialism did not stop being necessary just because it became politically incorrect” (Ignatieff 2002). Fitting imperialism within the framework of humanitarianism, this specific moral justification for the war holds that imperialism’s negative connotations stem only from its controversial history and not from the cultural hegemony implied by the policy. This ethnocentric humanitarian-imperialist rhetoric sets progress—Westernization and democracy—as the goal for the Third World, treating these so-called backwards civilizations as “contemporary ancestors of the West” (Oliver 2007). In such a system, the West has nothing to learn from its contemporaries; rather, the obligation falls to the West to bring “our way of life” across the globe.

Such a distinction between developed and undeveloped societies is inextricably linked to the place of women in a society; hence, 2001 pro-war rhetoric drew on specifically Western feminist ideas and sensibilities. In so doing, the campaign inaccurately attempted to universalize Western feminist ideas, presuming that all women throughout the world share the same desires. In order to mobilize support for the conflict, the U.S. highlighted the Taliban’s violations of “women’s rights” to employment, education, equality, liberation, political voice, and freedom of dress and movement—utilizing the oppression of women to mark the regime as “evil.” First Lady Laura Bush, in November of 2001, became the first woman in the history of the U.S. presidency to give a Presidential Radio Address, and her emotionally-vested speech focused exclusively on the deplorable situation for women in Afghanistan and the humanitarian necessity of U.S. intervention in the region. Terming a devastating military campaign to be “fighting brutality against women,” she claimed that this war “is not the expression of a specific culture. It’s the acceptance of our common humanity, a commitment shared by people of good will on every continent” (Bush L., 2001). In an attempt to discourage labeling the war in Afghanistan as culturally imperialistic, she puts it instead as a Western feminist-justified imperialism of civilization over savagery, good over evil.

This “justified” imperialist action finds its roots in Samuel Huntington’s 1996 thesis, “The Clash of Civilizations,” which again depends upon the treatment of women as a cultural signifier. His theory holds primarily that civilizations—which he defines as groups bounded by a shared cultural identity or religion—rather than races or nation states have been and will continue to be the driving force in global politics at the dawn of the 21st century. The two main entities in conflict are the West, seen as secular, democratic, and capitalist, and Islam, which Huntington depicts
as a civilization of theocracy and dictatorship. He does not distinguish between Islam as a religion and, as he terms it, a civilization—though this should be a crucial distinction. In his widely accepted rhetoric, these two sides hold mutually exclusive worldviews: Islam is a civilization “whose people are convinced of the superiority of their culture,” and in the West we are “convinced of the universality of [our] culture” (Huntington, 1996, p. 217-218). However, for Huntington, the problem has little to do with this universalist and culturally imperialist Western ideology, but “so long as Islam remains Islam…this fundamental conflict between two great civilizations and ways of life will continue to define their relations” (Huntington, 1996 p. 212). The thinly-veiled implication of this argument is that Islamic societies, and the world as a whole, would be better off if “they” were to adopt “our” way of life—a similar claim to that of the “contemporary ancestors” rhetoric of ethnocentric development.

As I mentioned earlier, both of these discourses leave no possibility for dialogue or exchange between Islam, an insufficiently developed civilization and the West, the universal frame of reference. President Bush intensified this system, in reference to its iteration in the War on Terror: “this struggle has been called a clash of civilizations. In truth, it is a struggle for civilization. The terrorists fear freedom as much as they do our firepower” (Bush G., 2006). Freedom is on the side of the U.S.—the civilized—while fear and backwardness characterize what President Bush over-simplifies to be Islam; however, Bush differs from the “Clash of Civilizations” ideology in the thoroughness of his degradation of the Taliban and other Islamic terrorist groups: Islam is not even worthy to be termed a civilization. The president’s constant talk of “bringing civilization and democracy” to the Middle East by toppling governments and bombing the countryside can be traced to the concept of humanitarian war, with its implicit ties to Western feminism and women’s rights.

Colonialism and the History of Islamic Fundamentalism in the Middle East

The economic, political, and religious history of Western selective humanitarian intervention, paternalism, and colonialism in the Middle East is, in part, what led to the rise to power of Islamic fundamentalism—the inherent irony in the “Clash of Civilizations.” Looking only at the recent past, the U.S. used Afghanistan as a base from which to fight Communist Russia during the Cold War after ousting the region’s Soviet occupiers. This self-serving pseudo-humanitarian engagement in the region required the U.S. to fund Gulbiddin Hekmatyar’s Party of God—one of the most extreme, conservative, and radical Islamic groups in Afghanistan. Leaving after the war, taking the “humanitarian aid” with “us,” the West stood back years later, publicly wondering how the region was overrun by so-called radical Islamic fundamentalists. However, the U.S. had good economic reasons to empower totalitarian and despotic regimes, rather than democratic governments: it is significantly simpler to get oil from one family or group than to deal with a complex governmental system. This type of political Islamic fundamentalism—much like Christian fundamentalism—depends upon misogynistic ideas.

Even before the Cold War, the history of colonialism in the Middle East had given rise to a particularly conservative form of Islamism, especially in regards to women. From the Middle Ages, the West over-sexualized the “Oriental woman” as the erotic “other” in art and in media depictions. The masculine “other” intimidated through his foreign cultural practices, while the feminine “other” enticed with her beguiling exoticism. As relations between the two civilizations developed, the body of the Muslim woman came to be “an object of global exchange” between Western patriarchy and an increasingly extremist Islamist patriarchy (Zayzafoon, 2005, p. 189). Western cultural, political, and religious impositions brought about the codification of Shari’a courts and the placement of greater restrictions on women’s freedom of movement and dress. Pushing back against all forms of Western influence, Islamic fundamentalism augmented its focus on women as markers of moral and cultural superiority—symbolized through hijab—in opposition to the “corruption” viewed in women’s (sexual) liberation. The societies of the Middle East employed centuries-long cultural practices to differentiate themselves from the West, leading to a counter-reaction: perceiving these practices as demeaning and oppressive to Muslim women, “we” took it upon ourselves to bring modernity and freedom to the region, particularly Afghanistan, in which “our” intervention had created and intensified the repressive nature of these conventions.

In the discourse surrounding the post-9/11 world, the pro-war agenda selected elements highlighting the religious oppression of women from this complex and violent history. The media utilized visual and verbal depictions of a woman’s life from within the “tent-like burqa” (Department of State, 2001)
under the Taliban to construct the Muslim Afghan woman as faceless, voiceless, and helpless, horrifically oppressed by “brutal” foreign men. As such, the Western agenda appeared fascinated with the “desire of Afghan men [in the Taliban] to treat women like dirt,” drawing on the presumed religious ties to Islam rather than the social, economic, and political context (Haddad, 2007; Kolhatkar, 2001). By emphasizing oppressive sexism as an exclusively Middle Eastern and Islamic phenomenon, even when this was not the case, and underscoring religious practices, the propaganda campaign precluded the possibility of recognition of the nagging similarities between the treatment of women in the West, especially in fundamentalist Christian communities, and in Afghanistan.

The menace posed by Islamic fundamentalism to “our way of life” serves to conceal the far more real threat of extreme social conservatism and right-wing Christian fundamentalism. By portraying Islamic religious practices as violent and oppressive, the rhetoric comes to portray Christian fundamentalism as “the familiar backdrop to normal political and social relations, particularly the role of women and sexual relations; its violence is pure and good while the other violence is impure and evil” (Oliver, 2007, p. 50). The restrictions on women as “moral children who need to be kept in line sexually by fear” found at the basis of Christianity become invisible when placed in opposition to the anti-feminist practices made so clearly visible through their foreignness in the Taliban and Islamism (Pollitt, 2005). Both fundamentalist sects are inherently misogynistic, yet, by comparison, the “other” tradition appears as somehow worse for women. The result of such a contrast is that even moderate and liberal iterations of Islam are referred to as fighting against women’s rights, while liberal Christianity is relatively unaffected by the stigma against Christian fundamentalism.

In addition to these hidden radical religious affinities at play between the West and the Middle East, the attempts made to pose the Taliban as the cultural opposite of the U.S., constructing our identity through its negation, ironically drew out implicit similarities regarding the treatment of women. With Afghanistan portrayed as the land of silence and repressive theocracy, horrifically fighting against freedom and women’s rights, the U.S. necessarily became the champion of democracy, the home of freedom, and the vanquisher of sexism and inequality. Women in the U.S. have the best possible situation, as they are not in thrall to a backwards religion but rather reap the benefits of sexual liberation—and “we” are obligated, in both humanitarian and Western feminist discourse, to give these same benefits to the less fortunate women in Afghanistan. By exploiting and displaying the misogynistic tendencies in the Middle East, the propaganda campaign partially blinded American society to the fact that women make, on average, 70% of a man’s salary; after all, American women in the U.S. are allowed to work outside the home, drive cars, choose their own clothing, vote, and run in elections.

However, in the U.S. and under the Taliban, there exists an “implicit ideological affinity” which takes the form of murderous religious fanaticism, extremely high rates of sexual violence, and lucrative sex industries (Franks, 2003, p. 142). The associations between the two cultures both allowed the United States to ignore the Taliban’s violations of human rights until it was in “our” best interests to acknowledge them, condemn them, and, after drawing these abuses into the public eye, to conceal our own versions of women’s oppression. Under the guise of respect for women, though still maintaining an extremely high number of brothels and other such establishments, the Taliban literally and figuratively hid away actual women’s bodies, thoughts, and actions. Under the guise of sexual liberation, the U.S. pushes aside real women’s concerns about their place in society, allowing them to “freely choose” to be ever available sexual beings (Franks, 2003). The Madonna/whore dichotomy and an iteration of rape culture reign supreme in both cultures: the law of the Taliban can be understood as the “obscene underside” of the culture of the U.S.—the most extreme and explicit form of our victim-blaming society. In order to justify a humanitarian war, while maintaining the U.S. place as exclusively on the side of “good,” it is imperative that “we” make invisible both these parallels and the Western-influenced history of the Middle East.

It must be understood here, however, that this paper is in no way trying to downplay the horrors faced by women under the Taliban, or claim that women in the United States face exactly the same type of oppression. Rather, it is attempting to point out the underlying cultural similarities that are so often ignored, particularly by the pro-war propaganda campaign.

Silencing Voices through Selective Imagery
Both components of the pro-war discourse, the
that contradicted either aspect of the pro-war dis-
in Afghanistan took precedence over photographs
that contradicted either aspect of the pro-war disc-
course by reversing the characteristics applied to
men and women. Simultaneously advocating for hu-
mumanitarian action for these women and military ac-
tion against their “evil oppressors,” the photograph
of the anonymous covered woman induces a strange
combination of pity, righteous anger, fear, and an
almost-smug satisfaction that “we” have been fortu-
nate and strong enough to avoid her fate. The im-
age also “robs us of the alibi of ignorance” (Linfield,
2010, 46); thus, depictions of the burqa-covered
woman in Afghanistan entered the media’s rhetoric
only when it was in the best interests of the United
States to draw attention to this “deplorable situation”
(Bush, G. 2001b).

The choice to show the burqa can be understood
both in terms of its significance to humanitarian
justifications and through the lens of the multiple
meanings of veiling itself in post-9/11 popular dis-
course. From the general category of hijab (literally
translated as separation, partition, or veil, though it
can be understood as referring to the loose head-
carf worn over the hair) to the burqa (the full body
covering enforced by the Taliban with thick mesh
over the eyes), all Islamic practices of women’s mod-
esty were termed “veiling.” The exact understanding
of “veiling” in the Western feminist pro-war rhetoric
consists in an intermingling of practices under
one heading: oppression and restriction of women
through the signifier of dress. When women are
represented under the veil, this marks them as con-
trolled by “evil,” or radical, Muslims—a consistent
aspect in the colonial history of the Middle East.
Despite Afghan women’s efforts to ignite discussion
and change around the categorical significance of
the veil, the uneasy Western associations with “fun-
damentalism, the subjugation of women, social con-
servatism, reactionary atavism, [and] cultural back-
These connections were only intensified by the use
made of the veil in the Clash of Civilizations, which
eclipsed any understanding of hijab through the lens
of Islamic, rather than Western, feminist thought.

Through media portrayals and the preclusive rhet-
oric of imagery, Afghan women were categorically
silenced as individuals—and any woman that spoke
up against the U.S. preoccupation with unveiling as
emblematic of the “success of democracy” could be
written off as operating under a Marxist false con-
sciousness, naively unaware of what the West knew
was best for her.

By calling upon the West to witness the reprehensible
status of Afghan women, photographs of the ubiquitous blue burqa evoked a necessarily paternalistic stance toward the region and supported feminist military-humanitarianism, which has been mentioned previously. These images apparently empowered the U.S. citizen to make an informed de-
cision to support the war, but in actuality enabled
them “to passively support state violence and the
selective (and non-existent) commitment of hu-
mumanitarian aid” (Rentschler, 2004, p. 301). Inher-
ently couched in the impulse reaction of the viewer,
visual depictions exhort the privileged viewer to pity
the needy and objectified subject. They intensify the
distinctions between “us” (those who purportedly
have the power to make visible human rights abuses
and the knowledge to—often violently—fix the situ-
ations which bring them about) and “them” (the
“other” whose existence is exclusively passive—they
are abused, they are oppressed, they are victimized,
and they are photographed). Again, this fits into the
rhetoric of bringing civilization, a concept exclusive
to the West, to our “contemporary ancestors” in
the Third World; “we” can be content with our own
society, almost too happy to provide humanitarian
aid to these feminine victims and vanquish their savage oppressors. As seen from a theoretical per-
spective in the previous section, it is made to seem
as though there is no possibility of overlap between
the two characters at play in this war: even the ima-
gery avoids all implication of cultural similarity in
terms of gender, race, or ideology. Throughout the
discourse of pro-war images, women (without West-
ern aid to unveil them) “shuffle around silently in
burqas” (Abu-Lughod, 2002, p. 784), in Afghanistan
while in the U.S. First Ladies make speeches, women
hold executive positions, and Miss America pageants
are won by women of every skin color and religion.

As discussed earlier, the problematic, purported he-
geemony of Western feminist thought allowed for it
to be co-opted by the pro-war discourse in the case
of Afghanistan. It was assumed that Afghan women
desired a form of liberation that would make them
“like us.” Thus, the abuses of their rights by the Tal-
iban formed a basis for a justified American military

The Possibility of Dialogue and Multi-
cultural Feminism

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geemony of Western feminist thought allowed for it
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of Afghanistan. It was assumed that Afghan women
desired a form of liberation that would make them
“like us.” Thus, the abuses of their rights by the Tal-
iban formed a basis for a justified American military
intervention. Though members of a different culture and different religion, Afghan women were treated as “if they were simply variations on a basic theme defined by white, Western, middle-class experience” (Hirschmann, 1998, p. 347). The media and the economy of images, preferring to utilize a prototype of the Muslim woman as opposed and in need of Western salvation, prevented real Muslim, Afghan women from speaking their desires vis-à-vis liberation. No stage was given to concerns that the history of Western feminism in the Middle East—tinged by the legacies of colonialism and imperialism—might have made it an inappropriate frame in which to place Afghan women.

By drawing attention to Islam’s supposedly inherent gender inequality, Western voices delegitimized and deconstructed Islamic feminism, the logical alternative for this region, with groups such as the Feminist Majority taking a paternalistic stance toward Afghan women’s activism by the Revolutionary Association of the Women of Afghanistan (RAWA). This universalist perception of Western feminism acted as an imperialism of ideas, justified by the created “humanitarian emergency” of women’s rights in Afghanistan, and eclipsed the possibility of dialogue drawing attention to abuses against women in Western society from the viewpoint of Islamic feminists. In the eyes of Islamic feminism, neoliberal views are liberal only in that they allow for the marketing and sexualization of women’s bodies—stripping them of agency as surely as a proscription of the burqa. Even this simple, passing glance at a reversal of the lens to focus in on liberalism from the perspective of Middle Eastern feminism brings a bitter irony to Western feminism’s public obsession with the Afghan burqa as the epitome of oppression, and it calls for a dialogue between the two cultures in order to determine if any form of hijab is more or less oppressive than Western clothing trends.11

The realities of this preclusive discursive relationship between feminism and its theoretical possibilities are best exemplified through communication between RAWA and the Feminist Majority. Because RAWA opposed U.S. humanitarian-military intervention and its Western feminist justifications, the American government refused to acknowledge or finance the organization, which had worked for the rights of Afghan women and change in the country since 1977. Instead, the United States backed the Campaign for Afghan Women and Girls, run through the American, neoliberal group the Feminist Majority. Launched only in 1997, the Campaign had historical or cultural ties to activism in Afghanistan or the Middle East. Such a choice maintained the mainstream images of helpless Afghan women, assisted by Western feminists in speaking out for their rights. Sonali Kolhatkar, the co-director of the Afghan Women’s Mission, a U.S.-based non-profit working with RAWA, stated angrily when confronted with the propaganda imagery for the War on Terror:

What good is it to flaunt images of Afghan women marching militantly with fists in the air, carrying banners about freedom, democracy and secular government? Those women wouldn’t need saving as much as the burqa clad women seem to. We may realize that Afghan women are perfectly capable of helping themselves if only our governments would stop arming and empowering the most violent sections of society (Kolhatkar 2001).

Her caustic indictment of the case of Afghanistan draws together the entangled threads of historical, imperialist, colonialist, feminist, humanitarian, and cultural motivations for both the depiction of justifications of the war in Afghanistan and the resulting implications for both the West and the “other.”

References
had taken 125 years of the U.S. presidency for a woman to give a Radio
that women under the Taliban did not need sexual
deviation from the norms (Vecsey, 2011, p. 181).
3 It is interesting to note here that the Western news media tended to
depict Sharia’s law as flexible and providing for justice and women’s
rights in the 1990s, an apparent reversal of the antagonism between
the two cultures in favor of pseudo-relativism. However, over the weekend
of October 6, 2001 (the beginning of American military action in
Afghanistan), the journalistic focus shifted to a more critical view of
Islam, highlighting the oppression of women and the punishment of
deviation from the norms (Vecsey, 2011, p. 181).
4 Advocates of humanitarian military action referred to the situation in
Afghanistan as “gender apartheid”—bringing to mind the horrors of
South Africa under racial apartheid and strengthening the perception
that intervention was absolutely necessary. There are interesting
parallels here between the U.S’s condemnation of the situation vis-à-vis
racism in South Africa while it simultaneously refused to acknowledge the
prevalence of racism in American society and decried sexism abroad
while doing little to remedy it domestically.
5 One additional critique of the humanitarian aspect of the war in
Afghanistan was that women under the Taliban did not need sexual
freedom and liberation or a token place in a puppet “democratic”
government but rather food, homes, and safe places to raise their
children.
6 Focusing instead on the content of the address (women’s oppression
in Afghanistan), the media paid little to no attention to the fact that it
had taken 125 years of the U.S. presidency for a woman to give a Radio
Address.
7 Feminist scholarship argues that the media and popular culture in the
United States encourage sexual abuse through their portrayals of women as
sexually available and “real men” as willing to take advantage of them.
This culture of rape, along with the Madonna/whore dichotomy, seems
to state “good girls don’t but real boys do”—meaning that women can
be seen in the eyes of the law as “asking for it” through their behavior
or dress.
8 For instance, it would have been crucial to complicating this one-sided
Western discussion to note that the veil was not universally opposed
by Afghan feminists who fought both before and during the Taliban
regime for rights to political participation, education, and employment
for women (Najmabadi, 2006).
9 In 2010, Rima Fakih became the first Muslim woman to win a
Miss America pageant, which has been touted as indicative of the
socioeconomic success of Muslims in America and the possibility of
assimilation for Muslim women—if only they conform to Western
beauty standards and the requirement of self-objectification (Ghosh,
2010).
10 This section only discusses the possibilities of dialogue between
Western feminism and Islamic feminism, but there is a parallel argument
in black feminism regarding the issue of the hegemony of feminism
geard toward the needs and liberation of white, liberal, middle-class
women.
11 For a discussion of Moroccan feminist sociological perceptions of the
tyranny of fashion in the West, see “Size 6: The Western Woman’s Harem”
in Fatema Mernissi’s book entitled Scheherazade Goes West (2001). The
chapter looks at the author’s experience of trying to find clothing in an
American department store, and being told that “her size” was not
Zayzafoon, Lamia Ben Youssef. 2005. The Production of the Muslim
Books.

Endnotes
1 The FBI reported a 1700% increase in hate crimes against Muslim
Americans from 2000 to 2001—and this number actually has increased
in the past two years (2010-2012) (Khan & Ecklund, 2012).
2 In blatant contradiction of the purportedly humanitarian motives,
the head of programs in the Afghanistan for the U.S. Agency for
International Development was quoted in 2002 as bluntly stating, “We’re
not here because of the drought and the famine and the condition of
women. We’re here because of 9/11. We’re here because of Osama bin
Laden” (Ignatieff, 2002).
3 It is interesting to note here that the Western news media tended to
depict Sharia’s law as flexible and providing for justice and women’s
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Yoshitomo Nara and Child as Hero

Isabella Bustamante, FCLC ’12

Dr. Nina Rowe, Department of Art History & Music
Faculty Advisor

Isabella Bustamante, FCLC ’12, is currently pursuing a master’s degree in the history of art at the Courtauld Institute of Art in London. She is studying “Aestheticising Politics? Globalised and Contemporary Art” under Professor Julian Stallabrass. While at Fordham, Isabella won both the John Marion Scholarship and the Vasari Lecturer award. Her work in this publication has been accepted by the Aomori Museum of Art in Japan to be preserved for their archives on Yoshitomo Nara.

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**Abstract:**

Japan’s post World War II generation’s preoccupation with the heroism of children is evident in Japanese pop–culture. This sociological phenomenon intersects with the work of Japan’s contemporary artists. Through an examination of Japanese contemporary artist Yoshitomo Nara, whose subjects mainly consist of children, I explore the allure of embracing your childhood self in contemporary Japanese culture and how Nara himself manipulates the model of the heroic child in his artwork. Through analyzing Nara’s work within the social and historical context of contemporary Japan, as well as performing an in–depth visual analysis of his painting Too Young to Die, I argue that Nara’s paintings of wide–eyed children, rather than drowning the viewer in sentimentality, or exploiting the viewer’s feelings about childhood, empower the viewer. I contend that Nara induces self–reflection and introspection, and promotes social rebellion rather than overwhelming the viewer with nostalgia and fantasies of childhood, thus creating a new heroic child model for Japanese culture.

THE HEROISM OF CHILDREN, which pervades Japanese pop culture, is a sociological phenomenon deeply rooted in the Japanese citizen’s struggle for self–definition. The glorified attributes of purity and innocence that children often symbolize are ideologies that have governed the adult population of Japanese society since the end of the Second World War. Artist Yoshitomo Nara (b. 1959), a product of the post–World War II generation who holds rock star status in Japan, creates paintings of children heavily derived from his own personal history of isolation and listlessness. Nara’s preoccupation with memory and nostalgia illustrates his compulsion to recreate his childhood self. His attachment and love for his childhood self, generated through reliving the memories of his youth, has forced Nara to designate his ultimate hero and subject as child.

Nara’s apparent obsession with the childhood self, its desirable unconscious freedom but also its defiant commitment to self–indulgence, generates paintings that reveal a longing to recreate the past, through welcoming the deceptive embrace of nostalgia. Rather than drowning the viewer in sentimentality or exploiting his or her feelings about childhood, Nara’s paintings of wide–eyed children empower the viewer. Nara’s figures of children are meant to induce self–reflection and promote self–discovery by exemplifying independence, individuality, and spiritual maturation. Consequently, we should view Nara’s children as embodying the heroism or the idealized qualities of goodness and virtue desired by adults, instead of assuming that the “cuteness” of Nara’s aesthetic merely seduces viewers into buying his popular merchandise through preying on their weakness for saccharine imagery.

Through an examination of Nara’s painting Too Young to Die (Figure 1) from 2001, we can attempt to decipher why Nara’s oeuvre consists predominantly of pre–pubescent youngsters. This particular painting was created during a period of Nara’s life when he produced relatively cynical pieces, a consequence, it appears, of working mainly in solitude. Nara’s work seems to reflect two types of children: passive or introverted children, who seem to be in deep contemplation and mentally engaged with the viewer but remain motionless, and active or performing children, who are caught in an act of rebellion and thrive on transparent expression. In Too Young to Die, the child is smoking; therefore, she is active.

Though the title of the painting references death, this is not an anti–smoking ad. Smoking is a widespread practice among adults in Japan and is not perceived negatively, as it is in the United States. Smoking bans in Japan are much less restrictive than they are in the US, allowing one to smoke in many public places including nearly all restaurants. In Japan, one can even buy cigarettes from vending machines on the street. These conditions suggest that Nara is more interested in the dynamic of a child engaging in an adult practice than in the harms of smoking.

Children acting like adults or possessing adult qualities has been a dominant theme of Japanese pop culture and subculture since the end of World War II. The psychological trauma brought on by the bombings of Hiroshima and Nagasaki, combined with Japan’s surrender, which ended the Pacific War, left Japanese citizens demoralized and humiliated. According to Takashi Murakami and other scholars, the Japanese, devastated by their loss and the subsequent US military occupation, sought solace in
the fantasies of popular cartoons. Anime (Japanese animation) and manga (Japanese comics) emerged as alternatives to the horrific imagery of the war that flooded the media. After the war, the success of beloved Japanese comics, such as Astroboy in 1952, which featured a friendly and courageous robot boy, confirmed that anime, manga, and the heroic child type were here to stay. A heroic child, defined by bravery, amicability, and moral integrity, was a character abstracted from the depraved adult world and immune to the sins of humanity, consequently a representation worth idolizing. Through immersing themselves in fantasy, the Japanese people were able to construct a new, positive reality, where the devastation of warfare was not a prominent fixture of their minds. Entitled to relive a different childhood through new characters, they were now able to envision different pasts. This allowed the Japanese to vicariously regain a portion of the innocence the war had denied them. However, the heroic child dually functioned to encourage the beginnings of a prolific kawaii culture.

Nearly sixty years later, kawaii culture is ubiquitous in Japan and inseparable from its visual culture. Operating as the means to disguise the darkness and harsh realities present in everyday life, indulging in the kawaii promotes an exchange of capital for cozy consolation. Kawaii, the Japanese word for “cute” or “cuteness,” became a prominent feature of contemporary Japanese visual culture in the 1970s, evolving from the cultivation of adorably ornate schoolgirl handwriting. Japan’s infatuation with kawaii images, embraced for their sweet, harmless, friendly, and lovable nature, was concurrent with Japan’s anti-violence, pro-peace mentality. The invention of Hello Kitty in the 1974 by Sanrio dominated the market for kawaii items, feeding the appetites of buyers during Japan’s burgeoning economic growth. The emergence of kawaii icons led to a severe infantalization of Japanese culture. In the exhibition catalogue Bye Bye Kitty!!!: between Heaven and Hell in Contemporary Japanese Art, David Elliot elaborates on the subject, “The appetite for the vacuously cute seemed boundless. People of all ages responded to a tsunami of kitschy cartoonlike creatures that existed both on paper and as popular commercial goods.” Thus, companies capitalized on consumers’ enthusiasm for youthful imagery, and kawaii culture prospered due its homogenous appeal.

The desperation with which Japanese consumers engaged in juvenile representations began to be subjected to social and political commentary by young Japanese artists in the 1990s. Takashi Murakami was the leading figure from this group of artists and the first to call attention to World War II’s influence on what he perceived to be the shallow trajectory of Japanese culture. He called this movement Superflat. Murakami defines Superflat as the two-dimensional and flattened appearances of anime, manga, graphic images, and pop art combined with the superficial consumerism of Japanese contemporary society. In the exhibition catalogue Little Boy, Murakami synthesizes this explanation, “Japan may be the future of the world. And now, Japan is Superflat. From social mores to art and culture everything is super two-dimensional.” Murakami is a firm believer that Japan’s emasculation, in the aftermath of World War II, has stunted the country’s social and cultural growth. He believes this emasculation led to Japanese identification with all things childlike. The passionate discourse of Murakami addresses the trend of the child as hero as well. He speaks of examples of heroic children in Japanese popular culture, but also the ways in which Japanese people emulate the same desires of these children. “All are children who want to stay children against the will of society. How are they to maintain their worlds...Thought stops and the child never grows up. Sucked in by kawaii, you lose initiative...” The denial of maturation, according to Murakami, allows for an escape far away from the burdens of adulthood. Therefore, Superflat art can sometimes provoke the same reaction from
viewers as kawaii images, one of drowning oneself in the pleasures of nostalgia. Although Murakami makes an astute observation that the void of kawaii can be debilitating to the viewer, his conceptualization of the viewer as passive, and thus powerless, is not entirely valid in the case of Nara’s art. Nara’s children, who to the casual observer can be perceived as the epitome of kawaii imagery, do not obstruct the viewer’s path to maturation but rather rehabilitate his or her delusional conceptions of childhood.

Scholar Midori Matsui, one of Nara’s greatest advocates, regards Nara as a revolutionary within contemporary art because he returned to figurative painting at a time when avant-garde art was confined to the realm of non-representation and abstraction. She exemplifies the position of many scholars who assert that Nara’s artwork embodies the soul of the descendant and alienated adolescent. Matsui’s distinction from Murakami is that she examines Japanese contemporary art through more of a biographical rather than a sociological lens. Her book The Age of Micropop: The New Generation of Japanese Artists explores the evolution and expansion of Japanese contemporary art and Nara’s crucial part in it, “...[A]part from the distinctive charm of his dreamlike deformations of everyday figures, [Nara’s] paintings expressed the paradoxical strength of children’s innocence and vulnerability as well as the fairy-tale world in which the boundary between human and nonhuman realms break down...”7 Although Matsui contends that there is a transcendental element to Nara’s work, evident in his depictions of a fantastical childhood, her conception of the figures’ paradoxical qualities as innocence juxtaposed with vulnerability is far too limited. Rather, the figures’ battle for maturity, exacerbated by the confines of their infantile bodies, reflects the Japanese individuals’ struggle to distance themselves from the temptations of pre-adolescence.

The best way to begin to understand Nara’s figures and Too Young to Die is through the initial connection made between the viewer and subject: the gaze. The large pupils of the child, imprisoned within slanted eyes that reach from hidden ears, almost to collide with a shapeless nose, fixate on the viewer with an unwavering glower. The eyes of the figure are fixed, not transient. Narrowed in self-defense, the sloping lids are the weapons of mass destruction, not the burning cigarette in the figure’s mouth. This child’s eyes are not timid or afraid. Each pupil’s placement is specifically directed, not wavering or dumb in its stare. This child knows what she’s looking at; she has a focus.

The figure in this painting is not intimidated by what she sees; rather, the power of her gaze and its pointedness are startling at first. She is not one of the fatuous kawaii creatures with vacant eyes. In her essay “The Art of Cute Little Things: Nara Yoshitomo’s Parapolitics,” Marilyn Ivy sees the gaze as bearing a different direction, “…the little child figures—glaring out into the distance but not composed to intersect with the gaze of the viewer—seem to reveal a traumatic encounter with the Real...”8 While Nara’s figures do glare, Ivy too quickly dismisses the idea that the figures are looking at the viewer, and instead supposes their attention is focused on an enlightening encounter with some ambiguous form of reality. However, I find this highly unlikely in the case of Too Young to Die due to the pronounced squinting of the girl’s eyelids, which taper upward in judgment. This child’s eyes are not relaxed and open. The concentration of the figure’s brow, almost appearing knitted by the heavy descent of her angled eyes, indicates that she is trying to identify something. This child knows exactly at what she is looking, and her body language supports this.

The cigarette, which hangs from the child’s compressed line of a mouth, does not droop or sag. It is held firm by her jaw muscles, clenched to prevent it from dropping below. Held parallel with the ground, the cigarette does not dangle precariously, but is pressed rigid by unseen, flattened lips. Nara’s subject is not staring dreamily into a void of nothingness; she is alert enough to balance her cigarette without the help of her hands. Indeed, she is also able to blow an impressively robust cloud of smoke from the cigarette. To support the cigarette without hands and to produce its fumes, she must be mentally focused. Consequently, her eyes appear to be sizing-up the viewer, wisely and in calculation. Her heroism is her confidence. Thus, Nara’s viewers can learn from this sagacious child, who is not victimized by, cowering from, or oblivious to her viewers, but is assertive enough to blatantly assess them.

Nara’s kids are punks. They do ugly things. They are Japan’s wake up call from the teeth rotting sugary sweetness imbedded in kawaii images. In his book Lullaby Supermarket, Steven Trescher confirms, “This attitude of refusal, the rebellious aura surrounding Nara’s figures, has something to do with the punk attitude the artist so often claims for himself and his children...[a] rejection of every kind of conformity.”9 Nara’s work comments on the angst of
Japanese youth and gives expression to their frustration in a society that favors group over individual needs. His children are exemplars of independence and are free spirits, undaunted by rules or regulations. Nara's call for individualism is not only evident in the solitary figure occupying the space of Too Young to Die but also in Nara's entire oeuvre which rarely features more than one figure on the canvas. These kids are solo performers and not frightened by the spotlight.

Nara's girl in Too Young to Die is not only independent; she is impolite, and in Japanese society, politeness is a requirement. Such fierce gazing in Japan would be offensive and a sign of rudeness. Yet this child stares and she smokes, untroubled by potential punishment or reprimands; she is committed to her shameless attitude. This kid is sticking it to the man. Here, Nara's rascal seems to encourage her viewers to question social conventions, not to suppress the urge to rebel. The famous Japanese proverb “The nail that sticks out gets hammered down” is absurd to her. This little subject not only breaks the rules by performing underage smoking but is not dependent on adults or anyone else. She does not desire any companions. Her thick legs are rooted to the ground, her large head firmly balanced on her swollen torso. She is hardly in motion, and she is not searching for friends. The dreamy baby blue color of the background with the golden sun of the child's yellow dress mimics the sky, contributing to the hypnotic effect of the work. This disk–like canvas thrusts the child into a timeless realm that she is not intent on leaving. The circular canvas, unlike the rigid viewing of a rectangular canvas, cements the viewer's immersion in a society that favors group over individual needs. His children are exemplars of independence and are free spirits, undaunted by rules or regulations. Nara’s call for individualism is not only evident in the solitary figure occupying the space of Too Young to Die but also in Nara’s entire oeuvre which rarely features more than one figure on the canvas. These kids are solo performers and not frightened by the spotlight.

The undulating fleshy pastels beneath her skin, veiny blues, lavenders, pinks, and pea greens emphasize her terrestrial and simultaneously tangible existence. Though her body is torqued in slight profile, she does not seem to be going anywhere. Her yellow dress seems heavy, the weight of it increasing towards the hem, making her shoulders slump. Her bare feet are planted flat on the floor. She is certainly comfortable. In this statement, Ivy brings an essential point to the forefront, “To paint a child as a subject is to suspend or stop time at a moment when the body–being is at its most transformative; the child virtually embodies the principles of change and metamorphosis.” Consequently, Nara paints a child who will never reach adulthood or at least an adult body. Instead, he gives her adult qualities incorporating the best of both worlds. She possesses the self–assurance of an adult and eternal youth. The cigarette is symbolic of an already attained maturity without the process of external growth. This girl becomes a model hero for the viewer; she looks like a child and so connects viewers to delights of their childhood selves but also has the capacity to act like an adult. Thus, she does not burden the viewer with irrepressible nostalgia but takes their desire for the past and morphs it into an image of the future.

The old saying that youth is wasted on the young is appropriate for Nara’s figure. She is a prefect mesh of the liberties of uninhibited pre–pubescence and the maturity of real world knowledge attained through years of struggle. This is why Nara’s images are so empowering: They represent a vision of self where the pleasures of adulthood, like cigarettes, can be enjoyed, but without addiction or self–destruction.

Born in Hirosaki, Japan, Nara grew up in the northern part of the country in a rural town, isolated from city conveniences. Both of Nara’s parents worked long hours, and his brothers were nine and ten years older than he, so he was very much alone, often spending hours with no one but his own imagination. He explains that he felt his physical world was very limiting, but also that he suffered from acute loneliness. Like most children Nara explains he was very self–absorbed in his own internal and external environment, which he replicates in the cloistered settings of his paintings, whose figures are companionless. He presents his subjects as self–sufficient, something he had to be at a young age as well. Isolated from the influences of the European old masters, Nara cites manga, but also illustrated Western fairy–tale stories and picture books, as his main visual influences.

The influence of fairy–tales at an early stage of his artistic and emotional development makes plain that Nara’s work is rooted in his own past. In an interview with Melissa Chiu from Nobody’s Fool, an exhibition catalogue of his first major retrospective, Nara states: …it’s quite twisted, but I was a rebellious, adult–like child. The time when I was depicting children in a lot of my work was probably a period when I was trying to regain something childlike. Well, I still do depict children but the images that people generally associate with me are from that time when I was trying to take back my childhood.
Nara's assertion that he was attempting to “take back” his childhood, can be interpreted as his need to cement a definite past. Referring to himself as an “adult–like child,” Nara recognizes his precocious younger self was a combination of child and adult, echoed in the characterizations of the children in his paintings. Fusing the adult and child produces the global ideology of prodigy or genius. Children who possess the intellect or abilities that most do not cultivate until adulthood are perceived as magical, or wunderkinds: those who inspire awe.

The magic of Nara’s children is not only rooted in their adult like capabilities and confidence but in their androgyny. His children, though in some paintings more than others may appear gendered, are still essentially gender–neutral, because their gender is never important. Their message is universal. Though the child in Too Young to Die can most certainly be assumed to be a girl because of her dress and haircut, her gender identity is irrelevant. When the emphasis on gender can be thoroughly eliminated from a painting, such as in Too Young to Die, it is no longer exploited, and thus Nara’s figures of children, I contend, are not sexualized or objects of sexual desire, even though they may act like adults. Midori Matsui concurs with this observation and mentions her take on androgyny in an interview about her own reaction to Nara’s work. “The gender ambiguity of Nara’s imagination...made me rethink the significance of androgyny and the undifferentiated sexuality of the adolescent.”15 This view of the undifferentiated sexuality of the adolescent likens to the universal appeal of the heroic child because of its gender–neutralit. So, Nara’s child in Too Young to Die, though she is a girl, can be emulated or admired by any gender because she has not reached the age of maturation. It is conspicuous that Nara has intentionally neutered his children because he wants their connection to the viewer to be transcendent of gender or sexual attraction.

If we look at one of Nara’s most celebrated paintings, Harmless Kitty (Figure 2) from 1994, one can perceive how gender is not part of the equation. The child, who moments before appears to have been enjoying riding on the yellow duck, lifts its chin, its action interrupted, as if it has suddenly become aware of the viewer’s presence. Its calculating green eyes narrow, showing interest in its onlookers. The smudge of purple paint on the pale, peach skin of the right cheek makes the child seem dirty, as if it was engaged in rowdy playing beforehand. Yet now the subject wears a face of complete composure. Its body wears a costume; it masquerades with gender obscured. Whether the figure masquerades as adult, child, or animal is up to the viewer to decide.

Yoshitomo Nara’s fans may have established the most devoted following an artist could hope to have in the contemporary era. During his solo show Nobody’s Fool in 2010 at the Asia Society in New York City, the museum recorded fans’ reactions to Nara’s artwork on their website. One enthusiast stated, “With Nara’s work, it’s amazing the human connection you can feel through a figure that’s not painted realistically.”16 The cartoon–like imagery is not unfeeling or just plain kawaii to fans. The humanity of Nara’s children and the connection his viewers feel to them is what is most evident. In her exhibition review of Nara’s show Nobody’s Fool, “Cuddling With Little Girls, Dogs And Music,” Roberta Smith describes what it is like to see a Nara painting in person, “Childhood emotions and memories and their persistence through life—the children we once were, the children we remain—are primary among Mr. Nara’s subjects.”17 Nara’s children, for art critics and fans alike, encompass versatile dimensions of childhood. Adults can see many facets of themselves in the round faces of Nara’s figures. The satisfaction that viewers gain from this experience is telling.

In the documentary Traveling with Yoshitomo Nara, hordes of Japanese fans are seen coming to Nara’s shows, sending him letters, and speaking about the
emotional draw of his work. Nara is portrayed in the film as rather reclusive and timorous, rejecting or playing down all the attention he receives. Whether or not the artist wants to be thought of as humble, he is frequently quoted saying, “I still don't consider myself an artist.” Rather than be irritated by his refusal to label himself as an artist we can assume that this is all part of Nara's rebellion. He does not want to be the sage, savior, or hero for the young adult viewers who look up to him; that is what his art is for.

He also prefers his fans to speak for themselves. When asked how he thinks his viewers see his work Nara responds, ”Maybe you should interview them. Everybody looks at my work differently.” Nara’s efforts to dismiss the notion that he is an artist, and to deny that he is capable of speaking for his viewers establishes the basic foundation of my argument. Nara liberates his viewers by letting them come to their own conclusions without contaminating or manipulating their opinions with his own thoughts. His statement also suggests that in order to learn from the girl in Nara’s Too Young to Die, not to be devoured by his personal nostalgia and emotional memories, viewers must derive their own meaning from his work. Nara’s subjects are not just kawaii images—baby faces whose senses are dulled to reality. When asked about his philosophical view of his work Nara confirms, “…if you look only at the surface, my work will not reveal itself to you.” Nara’s work reflects his own struggle to not dismiss the childhood self as an emblem of tender age, but to see his figures as former selves and as teachers.

So what does Too Young to Die tell us about the heroic child in contemporary Japanese society? Fundamentally, it communicates that images of children in pop art do not have to be characterizations of witless fluff whose only purpose is to propagate escapism and sell merchandise. On the contrary, Nara’s work demonstrates that images of children and the heroic child can have profound depth. The title Too Young to Die, as previously mentioned, has nothing to do with the harmful effects of smoking; it is a wake-up call for the viewer. Nara’s little girl, whose eyes twist to protect her individuality, defiant action, and private space, communicates to the viewer, Japanese society, and Nara himself that their own individuality, freedom to rebel, and independence is at risk without self-reflection. Nara’s children promote self-reliance, self-criticism, and introspection. So if the viewers are passive when seeing Too Young to Die, then they are not really seeing it. Perhaps Nara poses that when we gaze upon this adult-like child, we are gazing at smaller, more precious, ideal versions of ourselves. Nara’s little girl is not too young to lose her life; she is too young to lose her soul.

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Endnotes
4 Ibid.
5 Murakami, “Earth in,” 100.
6 Ibid., 148.
13 Ibid., 174–175.
14 Ibid., 173.
15 Matsui, Age of Micropop, 243.
18 Koji, “Traveling with Yoshitomo Nara.”
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Probing the Formation of Ferulic Acid Derived Nanoconjugates as Building Blocks for Antioxidant Applications

**Princess U. Chukwuneke, FCRH ’15**

*Dr. Ipsita A. Banerjee, Department of Chemistry*  
Faculty Advisor

Princess Chukwuneke, FCRH ’15, was born in Nigeria and is a pre-med environmental science major. She has a strong passion for chemistry and loves to study its influence on biological processes as well as its contributions toward elucidation of biomedical problems. She has been conducting research in the department of chemistry under the mentorship of Dr. Ipsita Banerjee since the beginning of her sophomore year. Her research experience working in the field of bionanotechnology has further augmented her interest in manipulating nanoscale materials for numerous medical and environmental applications. After graduation, she plans to pursue an MD/PhD program, conducting research geared towards her future career as a plastic surgeon.

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Abstract:
The development of potent antioxidant and antitumor materials for drug delivery at the nanoscale is biomedically significant. Ferulic acid (FA) is a naturally occurring phytochemical that possesses antimutagenic, antioxidant, and anti-inflammatory properties. In this work, a new family of highly potent nanoscale antioxidants was developed by conjugating FA with the neurotransmitter dopamine (3-hydroxy tyramine), which also displays strong antioxidant behavior and has several biological implications. The growth and formation of the assemblies were found to be pH-dependent, with optimal growth of nanofibers found in the pH range of 4 to 7. The utility of the nanofibers as effective antioxidants was explored through conducting free radical scavenging assays. The nanofibers can function such that the nanocarrier itself works as the drug, eliminating additional steps of encapsulation. Further, nanofibers may be potentially useful for a range of applications, such as anticarcinogenic and antioxidant materials.

Introduction
Nanotechnology has made a tremendous impact on the development of devices for energy, medicine, and environmental applications (Lee et al. 2010). In particular, the advancement of nanomaterials for water treatment, solar cells, cosmetics, nanoelectronics, and biomedical applications such as drug delivery, gene therapy, molecular imaging, biosensors, and biocatalysts has attracted remarkable attention (Gao et al. 2009; Berry 2005). For example, quantum dots have been used effectively as bioimaging tools and advanced catalysts due to their high photoluminescence properties (Huo 2007). Various synthetic organic/inorganic hybrid materials generally have been used to design nanomaterials (Sanchez et al. 2010). Furthermore, nanomaterials such as peptide nanofibers, hydrogels, and peptide nano- and microtubes formed directly from biological precursors have been of particular interest due to their biocompatibility, specific targeting ability, and, in some cases, biomineralization capability (De La Rica et al. 2011). For example, aspartic acid clusters have been found to promote biomineralization of highly organized morphology-controlled calcite crystals (Addadi and Weiner 1985). Plant-based resources have also acquired scientific interest because of their facile self-assembly, natural availability, ability to be functionalized, and biocompatibility (Rotello and Thayumanavan 2008). For instance, plant products such as artemisinins have been found to have antimalarial activity (Janse et al. 1994) and may have significance in drug delivery when combined with nanoparticles. In a separate study, gibberellic acid derivatives formed from plant phytohormones were found to act as templates for the growth of gold nanoparticles (Smoak et al. 2009).

For the formation of nanomaterials, self-assembly is often utilized as a practical strategy (Whitesides and Grzybowski 2002). Self-assembly is essentially the autonomous organization of building block components into patterns or structures; it is a highly appealing process because tailored functional molecular systems can be formed in a more well-defined manner. Furthermore, information regarding surface characteristics of the individual components can also be obtained. Molecular self-assembly generally involves non-covalent interactions such as van der Waals forces, electrostatic and hydrophobic interactions, and hydrogen bonds (Ciesielski et al. 2010; Bishop et al. 2009). This work describes the synthesis of a new biomaterial by conjugating two highly abundant naturally occurring materials: ferulic acid (FA) and 3-hydroxytyramine (HT) (Matthew and Abraham 2006; Kanazawa and Sakakibara 2000). The conjugated product was then self-assembled for the growth of nanoarchitectures. Generally FA, a type of hydroxycinnamic acid, is a plant phenol found in vegetables such as tomatoes, some fruits, and grains (Manach et al. 2005). In plant cell walls, FA cross-links vicinal pentosan chains of arabinoxylans and hemicellulose in cell walls which affect the cessation of cell wall expansion; FA also helps in creating barriers against pathogens (Bourne and Rice-Evans 1998). In humans, hydroxycinnamates have been reported to possess antimicrobial, antiallergic, and anti-inflammatory activities as well as antimutagenic properties (Karasawa and Otani 2012). Polymers of FA have been found to have an inhibitory effect on tumorigenesis in mice (Asanome et al. 1994). Additionally, hydroxycinnamic acids prevent peroxidation of low-density lipoprotein (LDL) mediated by heme-proteins, and FA specifically has been shown to protect α-1-antiproteinase against...
inactivation by hypochlorous acid (Pannala et al. 1998). Phytochemicals like FA, though not essential to growth and development, play a vital role in maintenance of body functions and health throughout adult phases of life and, thus, are sometimes referred to as “lifespan essentials” (Holst and Williamson 2008). Oxidative damage is usually associated with early stages of aging and of diseases such as cancer; hence, research over the past two decades in antioxidant studies has focused on the beneficial role that phytochemicals play as antioxidants by reducing unwanted and uncontrolled production of reactive oxygen species that could lead to oxidative stress (Tiwari 2004). On the other hand, dopamine, chemically known as 3-Hydroxytyramine (HT), is a monoamine oxidase inhibitor-based antidepressant found abundantly in beans, bananas, cheese, chocolate, coffee, and wine, among other things (McCabe-Sellers et al. 2006). Clinically significant drug-nutrient interactions have been described for tyramine which, like FA, possesses strong antioxidant properties (Yen and Hsieh 1997). Additionally, low levels of dopamine have been implicated in Parkinson’s disease as well as in the growth of tumors (Höglinger et al. 2004; Basu et al. 1995). It also has been shown that tumor growth in ovarian cancer may be reversed by administering dopamine (Moreno-Smith et al. 2011).

The goal of this work was to create a highly effective antioxidant/anticancer nanovehicle by combining FA and HT into a single system. By creating nanomaterials of such conjugates from natural products, we not only ensure biocompatibility and lower dosage but also high efficacy due to a greater surface-to-volume ratio. This paper explores the efficacy of the formed materials as antioxidants by conducting radical scavenging DPPH assays (Floegel et al. 2011). Further studies will involve examining antitumorigenic studies in the presence of specifically targeted cancer cells in vitro and will be reported separately. The growth of the nanomaterials was probed under aqueous conditions at varying pH values and analyzed by electron microscopic and spectroscopic methods. Thus, we have created a new biomaterial with a high-antioxidant capacity which has potential biomedical applications for preventing cell damage.

**Experimental**

**Materials**

3-Hydroxytyramine hydrochloride (HT) (99%), trans-Ferulic acid (FA) (99%), N-(3-dimethylaminopropyl)-N’-ethylcarbodiimide hydrochloride (EDAC), N-Hydroxy-succinimide sodium salt (NHS) (98%), and N,N-Dimethylformaldehyde (DMF), methanol, and 1,1-diphenyl-2-picrylhydrazyl (DPPH) were purchased from Sigma-Aldrich. The buffer solutions of different pH values were purchased from Fisher Scientific. All chemicals were used as received.

**Methods**

**Synthesis of HT-FA conjugates**

Initially, 0.19g of FA was added to 50 mL of DMF in a round bottom flask. To the solution, 10 mL of NHS (0.020 M) and 10 mL of EDAC (0.015 M) were added to activate the carboxyl group of FA. After 25 minutes of stirring, 0.19 g of HT was added. The solution was allowed to stir overnight at room temperature. After the reaction was complete, the solvent was rotary-evaporated and the product was re-crystallized from methanol. The formation of the product was confirmed by 1H NMR spectroscopy as well as FTIR spectroscopy. The 1H NMR spectra were recorded using a Varian VXR 4000, 400 MHz NMR spectrometer. The 1H NMR DMSO-d6 spectrum showed peaks at δ 2.8 (t, 2H), 3.65 (t, 2H), 3.92 (s, 3H), 5.4 (s, 3H), 6.4 (d, 2H), 6.8 (m, 4H), 7.1 (s, 1H), 7.4 (s, 1H), 8.1 (s, 1H).

**Self-assembly of HT-FA conjugates**

The HT-FA conjugate was allowed to assemble at a pH range from 4 to 9 over a period of 2 weeks to 5 weeks. The growth was monitored by electron microscopy after different periods of development. The formed assemblies were then mixed vigorously using a vortex, centrifuged, and washed thrice with deionized water before further analysis.

**DPPH Radical Scavenging Assays**

To examine the antioxidant activity, the samples which were grown at pH values of 4, 7, and 9 were selected. The assemblies were washed and centrifuged thrice with distilled water. For the assay, DPPH (2 mM) was prepared. The volume of the assemblies added was varied between 100 µL and 400 µL while the DPPH volume was kept constant at 200 µL. Studies were carried out at a pH range of 4 to 9. The total volume of the solution was maintained at 1 mL for each assay by water dilution. Immediately after the DPPH stock solution was added, absorbance spectroscopy readings were taken every 2 minutes for the 30 minutes and every 15 minutes for the next 3 hours. Readings were also taken after 24 hours. The DPPH free radical scavenging activity (%) was calculated from the absorption monitored at 513 nm according to the following equation:
[(A_initial – A_sample at specific time)/ A_{initial}] \times 100.

**Characterization**

**Fourier Transform Infared Spectroscopy**
Analyses were performed using Matteson Infinity IR equipped with DIGILAB, Excalibur HE Series FTS 3100 software. The washed samples were vacuum dried, mixed, and ground with KBr to make stable pellets before being analyzed. All spectra were taken at 4 cm\(^{-1}\) resolution with 100 scans each for averaging purposes. Sample measurements were carried out between 400 cm\(^{-1}\) and 4000 cm\(^{-1}\).

**Absorbance Spectroscopy**
Absorbance spectroscopy was carried out using a Thermo Scientific NanoDrop 2000. Readings were taken at a wavelength range of 190–600 nm. Samples were diluted with appropriate amounts of respective buffers solutions before analysis.

**Zeta Potential Measurement**
A PSS NICOMP 380 ZLS zeta potential/particle sizer system (Santa Barbara, USA) was used to determine the effect of pH on the nanostructures. Measurements of ζ-potential were carried out at 25 °C at pH 4, 7, and 9.

**Fluorescence Spectroscopy**
Analyses were performed using a Jobin Yvon Fluoromax-3 fluorimeter. The samples were diluted with deionized water and transferred to quartz cuvettes. The samples were excited at a wavelength of 350 nm. The emission spectra were collected in the range of 365 nm to 600 nm.

**Transmission electron microscopy**
Samples were washed twice with distilled water and air-dried onto carbon-coated copper grids for characterization by transmission electron microscopy (JEOL 1200 EX) operated at 90 kV.

**Results and Discussion**
The chemical structure of the formed conjugate is shown in Figure 1. As shown in the figure, the amide conjugate contains two phenolic ring systems connected by a hydrophobic aliphatic tail amidst the amide linkage. The presence of the phenolic –OH groups renders the conjugate a hydrophilic character, while the aromatic ring system and aliphatic chain impart a hydrophobic character to the material. Thus, the material formed is structurally similar to peptide-based bolaamphiphilic structures (Menzenski and Banerjee 2007). The self-assembly of the conjugates was examined over a period of 2 to 5 weeks at varying pH values. In all cases, the formation of nanofibers was observed (figure 2). In general, higher yields of nanofibers (>75%) (as analyzed by TEM) were obtained under acidic to mildly acidic conditions (pH 4–6). Under neutral to basic conditions (pH 7–9), relatively lower yields of nanofibers were formed (~50%). No significant difference in the morphologies in the pH range studied was noted, as indicated in Figure 2, except that the nanofibers formed under acidic conditions were relatively smaller in diameter. This is most likely because under those conditions, the assemblies are relatively more protonated, leading to stronger hydrogen bonding interactions and tighter clustering of the molecules. The pKa value of the hydroxyl groups for 3-hydroxy tyramine is ~ 8.9 (Borštnar et al. 2012) and that of the hydroxyl group of FA is 9.4 (Ragnar et al. 2000). Therefore, complete deprotonation of the phenolic hydroxyl groups occurred near a pH value near or greater than 9. This explains why no significant change in morphology was observed un-
der the conditions studied. The particular pH ranges chosen in this study were those suitable for biomedical application, so extremely acidic or basic pH values were not studied. The effect of pH was studied by zeta-potential analysis. A decrease zeta-potential values was observed as the pH was increased (from 0.01 at pH 4 to -0.03 at pH 9), indicating that gradual deprotonation occurs as the pH value is increased. In general, both stacking interactions between the aromatic ring systems and intra- and intermolecular hydrogen bonding interactions between the moieties appear to aid in the formation of HT-FA conjugated nanoassemblies. A proposed model for the formation of the assemblies is shown in Figure 3, illustrating inter- as well as intramolecular hydrogen bonding interactions and stacking interactions between the aromatic ring systems.

To confirm the role of hydrogen bonding interac-

tions in the formation of the assemblies, FTIR analyses were carried out. Figure 4 shows a comparison of FTIR spectrum of the assemblies formed at pH 7 and that of the synthesized sample. It should be noted that similar changes in spectra were observed in the case of assemblies formed under both acidic and basic conditions (data not shown). Non-hydrogen bonded hydroxyl groups, as in the case of the synthesized conjugate, peaked at 3464 cm⁻¹, while the stretching vibrations of the assemblies showed a shift to 3383 cm⁻¹ upon formation of assemblies. Such shifts are similar to those seen in polyvinyl phenols upon H-bonding (Coleman and Painter 1984). Furthermore, it has been reported that when polystyrene and polyvinyl phenols are blended with polyethers, it is likely that the hydroxyl hydrogens can form intermolecular interactions with the ethereal oxygen as well (Radmard and Dadmun 2001). Such interactions were confirmed as indicated by a shift observed in the C-O group region of the methoxy group from 1211 cm⁻¹ to 1276 cm⁻¹ for the assemblies. Further, upon formation of the assemblies, the –OH peak was significantly broadened, corroborating the involvement of hydrogen bonding interactions due to the hydroxyl group. A shift in the C=O peak from 1695 cm⁻¹ to 1668 cm⁻¹ upon formation of the assemblies was also observed.
The amide II peak was observed at 1587 cm⁻¹ for the as-synthesized product, which was shifted to 1592 cm⁻¹ upon formation of the assemblies. Because the carbonyl group is not directly conjugated to the benzene cores, it is likely that the stacking interactions may result in an orientation that promotes hydrogen bonding (Herrikhuyzen et al. 2006).

Absorption spectroscopy was also carried out in order to decipher the interactions involved in the formation of the assemblies. Multiple peaks were observed in the region between 220 nm to 350 nm due to the presence of the aromatic ring systems. As seen in Figure 5a, the UV-Vis absorption spectra showed a hypsochromic shift upon formation of assemblies. Shifts were observed from 333 to 312 nm, 295 to 283 nm, and 248 to 218 nm. Although Figure 5a illustrates data obtained at pH 4, similar blue shifts were observed under neutral and basic conditions (data not shown). Such blue shifted spectra in the pi-pi transition band commonly indicates the formation of H-aggregates, as in the case of coumarins (Verma and Pal 2012; Bairi et al. 2010). The formation of H-aggregates is likely due to the formation of dimers and polymeric species, as in the assemblies. Further studies involving the mechanism of formation of these aggregates is ongoing. In order to examine the luminescent properties, fluorescence spectroscopy was performed (Figure 5b). In general, pi-conjugated systems form molecular aggregates that are lower-energy species in which the excitation energy of the highly luminescent excimers get trapped during the radiative process (Huang et al. 2001). Therefore, the fluorescence properties of HT-FA assemblies were found to be relatively weakly emissive due to molecular aggregation (Chen et al. 2004). Red shifts were observed as the pH was increased from 4 to 9. Additionally, the fluorescence of assemblies formed at pH 4 was quenched compared to those formed at higher pH values, indicating that higher aggregation is correlated with lower pH (which corroborates the results obtained by TEM). The red-shift from 450 nm to 454 nm at the higher pH is most likely due to the larger sizes of the nanoassemblies formed at the higher pH. Because the p-conjugated materials possessed hydroxyl groups, pH has been employed as an external stimulus to study the role in formation of the assemblies.

**Antioxidant Studies**

The 1,1-diphenyl-2-picryl hydrazyl (DPPH) radical assay is commonly used as a model system to exam-
ine the radical scavenging activity of compounds such as phenolic extracts from plants (Mon et al. 2011). DPPH radical is scavenged by proton donation, forming reduced DPPH. This reaction triggers a change in color from purple to light pink or yellow after reduction, which is quantified by a decrease in the corresponding absorbance value. For our studies, the absorbance at 513 nm was monitored. The percentage radical scavenging activity was found to be higher as the concentration of the assemblies used was increased. This is most likely because at higher concentrations of the nanoassemblies, there are more sites available for the DPPH to react and subsequently to undergo reduction. The results shown in figure 6 are for those obtained after 30 minutes of treatment with DPPH at pH 7 using three different concentrations of the formed assemblies. Measurements were also carried out up to 24 hours of incubation, and no significant change was observed in the absorbance spectrum. Hence the results obtained after 30 minutes are shown. Thus, a new family of nanoassemblies which shows antioxidant activity has been prepared. Future studies will involve lipid peroxidation studies as well as treatment with tumorogenic cells, to examine the activity of the assemblies as anticancer agents.

CONCLUSIONS

This report details the design, synthesis, and assembly of a new biomaterial prepared using the highly abundant and naturally available phytochemicals hydroxytyramine and ferulic acid. The materials obtained self-assembled under aqueous conditions to form nanofibers, which showed potent antioxidant ac-

Figure 5. (a) Comparison of UV-vis spectra of assemblies formed at pH 4 after different periods of growth; (b) Comparison of fluorescence spectra of assemblies formed at pH 4 and pH 9 after three weeks of growth.
The formation of the assemblies was probed by various spectroscopic and electron microscopic methods. The nanoassemblies formed were also found to have unique spectroscopic properties and may potentially be useful as biosensors, in addition to anticarcinogenic and antioxidant materials.

Figure 6. Comparison of percentage radical scavenging activity of DPPH in the presence of varying concentrations of nanoassemblies of HT-FA formed at pH 7.

References
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Attraction and Education: Whether Intellectual Indicators of Future Success Make Men More Attractive to Women in a Period of Mating Optimism

Jordan Davidson, FCRH ’13

Sumi Raghavan, Department of Psychology
Faculty Advisor

Jordan Davidson, FCLC ’13, graduated early this past February with her bachelor’s degree in psychology. Her interest in evolutionary genetics and interpersonal psychology inspired her research on undergraduate dating preferences, conducted over the Fall 2011 semester. She is currently active as a writer and advocate in the reproductive health and wellness community.

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Abstract:
According to evolutionary studies, women seek out ‘breadwinning’ males to ensure the safety of their future offspring. A period of mating optimism paired with evolutionary theory suggests that women, regardless of their own potential, will consider a male's earning potential if given the opportunity when judging the attractiveness of a particular male. In this study, 66 heterosexual undergraduate females were asked to rate photographs of 8 men to see if intellectual indicators of future success impacted the perceived attractiveness of the men pictured. It was hypothesized that the women would find pictures of men with descriptions of strong intellectual indicators more attractive than if they viewed the same pictures with no descriptions. The hypothesis was confirmed by independent samples testing. This research suggests that despite an assumed self efficacy in undergraduate women, there is still an underlying drive that values ‘provider’ traits in prospective mates.

WHAT DO WOMEN WANT? It is the age-old question to which dated stereotypes have sought to answer by propelling the notion that women want a good ‘breadwinning’ man. While this might have been true in the past when women were not afforded the educational and vocational opportunities available to them today, young women, more specifically college-age women in pursuit of higher educational and career goals, should no longer primarily seek mates based on their high earning potential or their ability to provide (Cashdan, 1996). Women comprise 47% of the United States’ labor force and young women (ages 16 to 24) earn 95% of what young men earn. In terms of higher educational goals, 29.6% of women aged 25 and older—as compared to 30.4% of men—have attained a bachelor’s degree or higher (US Department of Labor, 2010). Therefore, based on the educational opportunities available to women today and their ability to earn a salary comparable to their male counterparts, young women should not value earning potential when evaluating the attractiveness of a prospective mate. However, evolutionary studies have found that this is not the case, thereby supporting the notion that women, regardless of their own status, seek out ‘breadwinning males’ to secure the safety of their future offspring (Eastwick & Finkel, 2008). While the workforce statistics suggest that young women can be independent of men, women between the ages of sixteen and twenty-four are in a period of mating optimism, with their reproductive value and ability to secure high status mates at their peaks (Cashdan, 1996). This period of mating optimism, paired with evolutionary theory, suggests that women, regardless of their own earning potential, will consider a male’s potential if given the opportunity while also judging his attractiveness. This study seeks to determine whether modern young women, ranging from 18 to 24 years old, who have high potential to succeed, are immune to the biological imperatives (i.e. finding a mate with the best ability to provide for future offspring) which evolutionary theories impose on them. Despite modern women's abilities to care for themselves, it is highly likely that they would be more attracted to men who display a higher potential for economic security. This is because women are required to provide substantial pre- and postnatal resources to their offspring, thereby presenting much higher costs (Li & Kenrick, 2006). This explains why older men with high status are the most successful at attracting women in their peak fertility, whereas very few teenage boys and only 5% of men above the age of 40 are able to marry women in their peak fertile years (Buunk, Dijkstra, Kenrick, & Warntjes, 2001). Therefore, an attractive partner would be someone with substantial financial means who is mature, but no more than 10 to 15 years older than the female. This would be a time in which the father's physical contribution in rearing the child and providing monetary care outside of the home will be maximized. In this economy where jobs and financial resources are at a minimum, rearing a child as a single parent, regardless of the parent's gender, is financially challenging. According to sexual strategy theories, women should favor criteria that maximize long-term priorities (e.g. good health, high earning potential) and treat physical attractiveness as more of a luxury (Li & Kenrick, 2006). Therefore, it is hypothesized that women will consider the earning potential, as illustrated by choice of major/education or vocational goals, of a male when rating his attractiveness. Males with higher earning potentials will be rated as being more attractive with their descriptive qualities than without their descriptive
qualities; whereas men who might have been rated highly attractive when only their photo was viewed will be rated as being less attractive when given educational/vocational goals that have a lower earning potential.

There are three theories dedicated to understanding mating strategies. The first is the Parental Investment Theory (PIT), which states that women prefer long-term partners that have the capacity and willingness to invest in a family. This preference results from sex differences in nurturing, which have led women to develop different mating strategies than men (Trivers, 1972). The next theory, developed by Buss and Schmitt, is the Sexual Strategies Theory (SST). This theory adds to PIT by stating that women will pursue a short-term relationship if the benefits of doing so will outweigh the costs. However, even SST focuses on women's preferences for long-term mates since the main reason that a woman would pursue a short-term relationship would be to evaluate that partner as a prospective long-term partner (Buss & Schmitt, 1993). SST was spawned from Buss's research of mate preferences in 1989. Buss surveyed over 10,000 participants from 37 different cultures and found that cross-culturally, men value physical attractiveness in a mate because a woman's physical attractiveness confers information about her reproductive value. Women value earning potential in a mate because a woman's offspring are more likely to survive if a man has a high economic contribution. These preferences continue to exist today because of the reproductive success of ancestral humans who functioned under these premises (Buss, 1989). The last theory, Strategic Pluralism Theory (SPT), states that there are two types of benefits that men can offer females partners. The first benefit is good genes to ensure offspring fitness, and the second benefit is the ability to be a ‘good provider’ by having the time and resources to invest in future offspring. SPT, along with SST, places importance on a woman's preference for long-term mates and her sensitivity to cues regarding the types of benefits a potential mate might have (Gangestad & Simpson, 2000). Physical appearance is one of the cues that signify what type of reproductive fitness a mate might have. People often seek to further interact with someone whom they view as having a pleasant physical appearance. (Cashdan, 1996) Evolutionary biology supports the idea that many male physical features can indicate to women that they have high potential to be a good provider (Buunk, Dijkstra, Kenrick, & Warntjes, 2001). Maturity is cross-culturally viewed as an indicator of higher status and dominance. This is why women generally prefer older and taller men. Facial features can also indicate maturity. Features such as a prominent jaw, bushy eyebrows, small eyes, and thin lips are viewed as being both dominant and more attractive physical features (Cashdan, 1996).

Given the time and energy a woman invests during pregnancy, it is logical that she would select a stable mate. For a self-sufficient woman, the quality of a potential mate's stability should be less important than other factors. Someone with a bachelor’s degree can earn up to 84% more than someone with only a high school diploma. Therefore, a bachelor's degree alone offers substantial financial stability. However, studies have found that at the extreme, the median highest earning majors can earn up to 314% more than the median lowest-earning majors (Carnevale, Strohl, & Melton, 2011). This should not matter for a woman who also has a bachelor's degree and can provide substantial resources for herself and potential offspring. Wilbur and Campbell studied women of different sociosexual orientations and found that women who were not restricted, in that they could provide for themselves, were primarily focused on the attractiveness of a potential dating partner, regardless of short-term or long-term dating. A partner's ambition was rated secondary to their attractiveness. Meanwhile, women who were restricted (unable to provide for themselves or others under their care) did not cite a potential partner's attractiveness as a major factor in either long or short term dating (Wilbur & Campbell, 2010).

Interpersonal relationships are hard to study due to their multi-factorial nature. Mate preferences are usually assessed when a participant is in a state of cool rationality. However, when truly attracted to someone, often a state of cool rationality does not exist (Eastwick & Finkel, 2008). For example, when asked in a controlled setting if a college degree is necessary in a potential mate, a woman may answer yes; however, in the midst of a passionate moment with a new potential interest who is only a high school graduate, such degrees may no longer matter. This change in perspective is known as a cold-to-hot prospective empathy gap (Loewenstein, 1996). Despite what gaps may exist, the consistency between ratings of attractiveness has been thoroughly studied. Research has shown that raters can and do agree about who is and is not attractive, both within and across cultures. In addition, attractive adults are judged more positively than unattractive adults (Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000).
Method

Participants
A total sample of 66 undergraduate heterosexual females was obtained from a convenience sample at Fordham University in New York City. Participants ranged from 18 to 24 years old and were either freshmen, sophomores, juniors, or seniors. 31 of the participants were placed in the control group, while the other 35 participants were part of the experimental group. Participants in the control group were 19.1 years old on average (SD = 1.2 years); 35.5% were freshmen, 22.6% were sophomores, 25.8% were juniors, and 16.1% were seniors. While participants in the experimental group were 20.2 years old on average (SD = 1.2 years); 22.9% were freshmen, 14.3% were sophomores, 40.0% were juniors, and 22.9% were seniors. The racial breakdown for the entire sample is as follows: 68.2% Caucasian, 4.5% African American, 18.2% Asian, and 9.1% Hispanic.

Procedure
Two surveys were created for the purpose of this study. Both surveys began with basic demographic questions such as age, race, graduation year, program of study, and sexual orientation. These questions were necessary in order to screen the participants for any differences that may exclude them from the study. The first survey (the control survey) featured pictures of eight different men whose levels of attractiveness ranged from slightly less attractive than average to more attractive than average. The photos were acquired from a basic Google image search in order to decrease the likelihood of participants knowing the males pictured. The photos were all relatively similar in size, and all of the men featured were smiling and facing forward. It was important that the pictures had consistency in the facial expression displayed in order to eliminate bias (e.g. if one male was rated higher because he was smiling and therefore, looked less hostile than a man who was not smiling). The background of all of the photos was white, so that the participants were forced to focus solely on the face. Next to each male’s photo was a Likert scale ranging from 1 to 10, with 10 being the most attractive and 1 being the least attractive.

The second survey (the experimental survey) featured the same eight photos and Likert scales. However, this survey also included descriptions of the types of educational institutions and choices of major or career that each male ascribed to. The educational institutions ranged from high school to community college to Ivy League universities. Majors and career paths were also ascribed to the men pictured. The majors selected were taken from a study done by Carnevale, Strohl, and Melton that assessed the average earning potential for a number of majors (2011). Some men were assigned majors with high earning potentials, while others were assigned majors with lower earning potentials. In addition, some men were also assigned concentrations (i.e. pre-law or pre-med) in order to bolster their perceived potential for success. The descriptions also featured a favorite color, in order to disguise what the survey was measuring.

The descriptions for each male in the experimental group were planned out in accordance with the hypothesis. Male A was an average looking Indian, enrolled at an Ivy League university, studying philosophy. According to the Carnevale, Strohl, and Melton study, a philosophy major makes a median of $50,000 and falls in the middle of the salary spectrum for bachelor degrees (Carnevale, Strohl, & Melton, 2011). Male B was an average looking Caucasian and a high school graduate in the Marine Corps. Since Male B did not have a bachelor’s degree and had a military career, he earned at the lower end of the spectrum. Male C was slightly below average looking, ethnically ambiguous, and was pre-med and studying chemistry on a full ride at a top-tier school. This was an attractive set-up because he would graduate presumably with no debt and go on to receive a graduate degree which would guarantee a higher paycheck than a bachelor’s degree would. Even if he did not go on to medical school, chemistry majors earn on the higher end of the spectrum with a median salary of $59,000 dollars (Carnevale, Strohl, & Melton, 2011). Male D was highly attractive, Caucasian, and an education major at a state university. Education majors earn on the higher end of the spectrum with a mean salary of $42,000 (Carnevale, Strohl, & Melton, 2011). Male E was less attractive, Caucasian, and was pre-law and a history major at an Ivy League university. This puts Male E at the average earning potential for a number of majors (Carnevale, Strohl, & Melton, 2011). Male F was an average looking African American who was an engineering major at a technical school. Engineering majors with lower earning potentials, while others were assigned majors with lower earning potentials. In addition, some men were also assigned concentrations (i.e. pre-law or pre-med) in order to bolster their perceived potential for success. The descriptions also featured a favorite color, in order to disguise what the survey was measuring.

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studied computer science in an Honors program at an unspecified university. Computer science is the second highest paying major with a median salary of $70,000 (Carnevale, Strohl, & Melton, 2011).

Both surveys were distributed in undergraduate classrooms, and only the experimental survey was offered online to Fordham students. The same type of survey was distributed to all of the participants in a given class (e.g. all females in one undergraduate psychology class were given the same control survey) in order to eliminate suspicion as to what the survey was measuring. Before distributing the surveys, the purpose of the study was described in simple and uninformative terms. Those participating were told that the surveyors were studying undergraduates and attraction, and that after providing consent, those participating should rate the pictures based on how attractive the males pictured are. Once turned in to the experimenter, the surveys that were distributed during class were shuffled and assigned random numbers to ensure anonymity in later analysis. Surveys completed online were done via an independent survey website which allowed for anonymity. Those surveys were also given random numbers for analysis. After the surveys were collected, they were screened in order to exclude anyone who did not fit the study's criteria. Those who were selected for the study were heterosexual females, ages 18 to 24 (the period of mating optimism).

The 66 surveys that met the inclusion criteria were then analyzed. Using the random numbers previously assigned to each survey, the ratings given for the eight males pictured, the age, year in college, and ethnicity of each participant were all entered into SPSS. Once all of the data was entered into SPSS, descriptive statistics and independent samples tests were run.

RESULTS

For the purposes of this study, the analyses focused on the differences between ratings of the control and experimental groups. Independent t-tests were used to determine whether the two groups differed on their ratings of each male. Results revealed that significant differences in ratings of Male A (t = 3.550, df = 64, p = .001), Male C (t = 4.636, df = 64, p = .000), Male E (t = 3.729, df = 64, p = .000) and Male F (t = 4.564, df = 64, p = .000). There was a trend towards significance for Males G (t = -1.740, df = 64, p = .087) and H (t = 1.807, df = 64, p = .075). The difference in the ratings of total attraction (the sum of all the male's scores per participant) was also analyzed between the groups. The mean total attraction for the control was 40.6 versus a score of 47.5 for the experimental group. There was a significance in the difference between those ratings as well (t = 3.457, df = 64, p = .001). The results of the independent samples test can be seen in Table I. The significant

![Figure 1. mean ratings for all 8 men](image)
findings correlate with the changes in means from the control group to the experimental group. The means of the significant changes are as follows: Male A: M= 3.97 to M=5.51, Male C: M=3.90 to M=5.77, Male E: M= 4.90 to M= 6.94 and Male F: M= 3.52 to M= 5.51. The rest of the mean scores can be seen in Figure I. No analyses could be done in regards to ethnicity of the women raters and the scores due to the small minority sample sizes.

**Discussion**

The results support the research hypothesis, showing a significant relationship between intellectual indicators of success and bolstered attraction. Previous research explains the discrepancies in Males B and D's ratings, which had no significant change. In the study by Wilbur and Campbell, unrestricted women valued attraction above ambition (2010). The level of restriction for women still in college is hard to gauge; especially since they have not entered the working world. Therefore, in order for attraction to come before ambition in women whose restriction levels are unknown, the male must be extremely attractive. This was the case for Male D, who had a mean rating of 8 for both the experimental and control groups. Male B posed problems due to his lack of degree and lower paying job. However, Male B was employed in a very masculine, military job. Based on the posits of evolutionary theories, a very masculine career, which signifies a mate capable of protecting future offspring, may be enough to override a low paying job or a lack of degree (Cashdan, 1996). This same idea may also explain why Male G, an attractive male (M = 7.71) suffered a lower rating once given a dance major (M = 6.89). If women are looking for key indicators of masculinity as indicated by Cashdan, a career associated more with women (such as dance) might be off-putting. The most interesting results came from Males A, C, E, and F. All four of these males had the highest indicators of future success, from Male C, a potential doctor, to Male F, a potential engineer. Meanwhile, Male F had the highest salary listed, and Male A (along with Male E) attended an Ivy League School. All four of these men were given the highest indicators of success, and all four had the most significance in their mean rating changes from the control group to the experimental group.

While all of the non-Caucasian men received increases in their ratings once given descriptions, their average ratings were lower than those of the Caucasian men. This can be explained by homophily, the idea that people like people similar to themselves. Since Caucasian women composed 68.2% of the sample, it is understandable that Caucasian men were rated higher. Homophily can also explain why intellectual indicators of success increased attractiveness ratings; educated women like educated men because they relate to them more easily. Another explanation that can account for the differences in ratings is the basic idea of intimacy; people feel more attached to others that they know something about. A picture with a description is more human than a picture without a description. This explains why the ratings of total attraction (the sum of all the males’ scores per person) differed from the control group to the experimental group.

Future studies would include running this study again with a larger and more representative sample size. There would also be a pre-testing phase where people would rate a myriad of photos in order to ensure a more representative range of male attractiveness. In addition to what looks attractive, a better consensus must be reached between the participants as to what type of attractiveness they are judging. People define attractiveness differently; where one person might think a rating of 1 just means unattractive, another person might take a rating of 1 to mean repulsive. To protect against such a discrepancy, the 1 value should be more clearly defined as hideous and the 10 value as stunning. There may also be a discrepancy in the type of attraction (i.e. general versus personal). How generally attractive a person is can be very different than how person-

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*Note. Equal variances assumed*

Table I t-test for equality of means in male ratings between groups, N = 66.
ally attractive a person is. For example a participant may rate an attractive male as less attractive simply because she dislikes his brown hair. She is capable of calling him attractive in general, but she is not attracted personally. A clearer distinction on whether to judge based on personal or general attractiveness needs to be made in the instructions.

In a consumer driven age such as this one, the general public is constantly bombarded by attractive images, in order to promote the purchase of a product. Internet dating websites function similarly by marketing people based on their user identification photos. Yet more than a photo is needed to make a meaningful connection. For men, physical attraction is more important, but for women there needs to be a level of ambition and potentiality. Many dating websites aimed towards younger users focus more on trivial details, but studies have shown that women require indicators of success even for short-term relationships. This study shows that, in as early as the 18- to 24-year-old female demographic, there exists a bias favoring men with higher indicators of success. Therefore, on dating sites, including those meant for younger users, along with showing the user’s photo, it would be beneficial to include a section that breaks down more serious topics and ambitions of the potential date in question. Just because women are waiting to get married until later in life does not mean they ignore the key indicators of mating success in those they choose to date before getting married.

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Reclaiming a Cultural Identity: Ghanaian Hip-Life and the Bronx

Stephen Erdman, FCRH

Dr. Mark Naison, Departments of History and African & African American Studies
Faculty Advisor

Stephen Erdman, FCRH ’13, is originally from Allentown, PA. Stephen learned about the Bronx’s growing Ghanaian population through his coursework in Fordham’s urban studies program. During the Spring 2012 semester, he studied abroad in the Dominican Republic, where he further developed an interest in cultures of the African diaspora. He plans to pursue a master’s degree in urban planning after graduating from Fordham.

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Abstract:
Since emerging from the South Bronx three decades ago, the American hip-hop movement has developed an international following. While contributing to cultural homogenization, the dissemination of American hip-hop has also spawned new genres abroad that showcase local musical styles. The creation of the hip-life movement in Ghana illustrates this phenomenon. This essay examines the exportation of American hip-hop to Africa and the ways that musicians integrated hip-hop with indigenous styles to create “hip-life.” Furthermore, the essay evaluates how trends in African immigration to the Bronx have allowed hip-life to establish itself in the United States. The author employs news articles and interviews with a Ghanaian-American music producer and DJ in the Bronx to help reveal the ways in which popular culture is transmuted between two different societies. This analysis demonstrates local music’s importance to Ghanaian and Ghanaian-American identities and suggests local cultures’ resiliency to the forces of globalization.
University of British Columbia, even goes so far as to argue that the global presence of American hip-hop and its English lyrics has helped to perpetuate neocolonial influences in Africa by subverting indigenous languages. Yet, as the genre has spread beyond the United States and reached young ears across the globe, local musicians have resisted these consequences by infusing their own cultural flavor into homegrown hip-hop movements. Tony Mitchell, cultural studies professor at the University of Technology, Sydney, explains that today, “Hip-hop and rap cannot be viewed simply as an expression of African American culture; it has become a vehicle for global youth affiliations and a tool for reworking local identity all over the world.”

Tara Jabbaar-Gyambrah, professor of African American studies at Niagara University, deems this phenomenon the “indigenization” of hip-hop, where cultures across the globe have adorned the musical framework American hip-hop established with their own artistic tastes.

Recent popular music trends in Ghana help illustrate how indigenization has produced a new hip-hop style in West Africa. Together with hip-hop, highlife music, a traditionally popular genre in Ghana, has shaped the Ghanaian popular music scene during the past two decades. Highlife developed in Ghana during the early twentieth century, growing out of a combination of indigenous music and foreign influences that European sailors had introduced to towns along the West African coast. Until the 1970s, highlife music monopolized Ghanaian dance floors, and today it remains one of the country’s most popular music forms. In the mid-1990s, American hip-hop and Ghanaian highlife merged to produce a new hybrid musical form: hip-life. Much like the American hip-hop pioneers of the 1970s and 1980s, young Ghanaian musicians began experimenting with “rapping, electronic beats, and sampling,” drawing upon elements of both hip-hop and highlife. In 1994, Reggie Rockstone, a Ghanaian rapper who originally performed American-style hip-hop songs in English, made the breakthrough decision to rap in Twi (a language indigenous to Ghana) over hip-hop beats. Many artists followed Rockstone’s model, laying a foundation for what has become the most popular musical form in Ghana today.

Hip-life is varied in its use of hip-hop and highlife elements; Rockstone’s early hip-life music and many modern hip-life songs combine American hip-hop beats with rapping in native tongues, such as Twi, Fante, Ga, and Ewe Hausa. Hip-life can also result from the combination of indigenous African beats, such as those found in highlife, and rapping in English or Pidgin English. Jabbaar-Gyambrah’s experience at “The Next Stop,” a Ghanaian club, helps illustrate the integration of American and African influences typical of hip-life music. She writes, “The nightclub music was sung in English and Twi with an echoing sound of drums beating in the background. Many people dressed casually in American styles or wore traditional Ghanaian clothing.” She further explains that hip-life music may include “a combination of local rhythms like the Adowa, instruments such as Kpanlogo drums, xylophones, flutes, thumb pianos, and samples of highlife favorites.” Thus, while the American hip-hop model is inextricable from hip-life, just as American influences are pervasive in Ghanaian culture, hip-life’s use of native languages, beats, and instruments is not insignificant. This syncretism worked against Americanization by functionally disrupting the replacement of Ghanaian highlife with a purely American hip-hop imported directly from music studios in the United States. The emergence of the hip-life movement has ensured that Ghana’s most popular music is produced in Ghana, by Ghanaians, and through a Ghanaian cultural lens.

Furthermore, hip-life’s success in Ghana largely is due to it deliberately distancing itself from American hip-hop. Although early hip-life music mimicked hip-hop’s rebellious tone, which resonated with Ghanaian youths but bred resentment among adults, hip-life artists soon departed from the abrasive themes that defined American hip-hop, such as drugs, misogyny, and violence. Rockstone sums up the rationale for this development: “Africans celebrate life and music. They don’t want to hear songs that make them sad and play the war gangster.” While this sweeping claim portrays the diverse peoples of Africa as one homogenous unit, it conveys the significance of negative responses to hip-hop that encouraged Rockstone to reshape the music according to Ghanaian standards. By producing music that was more light-hearted than American hip-hop, Rockstone helped distinguish hip-life as its own musical genre. Still, it was only after well-known highlife musicians collaborated with hip-life artists during the mid-2000s that the general public viewed the new genre as unthreatening. Widely beloved highlife musicians provided a seal of approval that granted hip-life universal appeal in Ghana.

Even before it fully established itself in Ghana, hip-life began to develop an audience in the United
States. Specifically, steady immigration from Ghana to the Bronx provided a fan-base open to the importation of hip-life. According to the United States Census Bureau, there were twenty-five thousand African immigrants in the Bronx in 2000 and more than forty thousand in 2008. Jane Kani Edwards, director of African Immigration Research at Fordham University and author of Fordham’s Bronx African American History Project (BAAHP) argues that there may be well over one hundred thousand African immigrants and their children in the Bronx, many of whom did not participate in census reporting because of language barriers or fear of deportation (for those immigrants lacking proper documentation). This deems the Bronx “the site of the largest concentration of African immigrants in New York City and possibly in the entire Western Hemisphere.”

Edwards explains that affordable housing in the borough—especially in comparison to increasingly gentrified neighborhoods in Harlem and Brooklyn—and African immigrants’ desire to live near each other has contributed to this phenomenon. Within the borough, certain neighborhoods possess particularly high concentrations of Africans, “such as Morrisania, Morris Heights, Highbridge, South Fordham, and Tremont, among others.”

Of all African groups, Ghanaians have the strongest presence in the Bronx. As a result, Ghanaian culture has become an integral part of the Bronx’s social fabric. For instance, University Heights in the Bronx has been nicknamed “Little Accra.” Ghanaian groups have also organized annual National Ghana parades and Ghana Independence Day celebrations, and Ghanaians choose a representative of the Ashanti Queen and King in the Bronx. Additionally, among the many languages spoken in Ghana, Twi, Fanti, and Ga have made their way to the Bronx. There is also evidence that Ghanaian-Americans maintain firm ties with family and friends in Ghana. Most of the Africans that Edwards and other contributors to the BAAHP interview confirmed that they regularly send money to their relations across the Atlantic. Ghanaians also frequently expressed a desire to return to Ghana when they retire. These cultural connections between Ghana and the Bronx created an environment conducive to the introduction of hip-life music to New York City. Kojo Ampah, a Fordham University student from Ghana, explains, “Drive on Fordham Road and chances are you’ll hear hip-life playing from a car.” According to Edwards, Kontihene, “the most powerful hip-life artist in Ghana,” now resides in the Bronx.

Still, while large Ghanaian populations in the Bronx made it possible for hip-life to enter the United States, the cultural exchange would not have occurred, at least to the extent it has, if it were not for the efforts of Felix Sarpong, a Bronx music producer who specializes in hip-life and other African popular music. During the fall of 2011, I contacted Sarpong and conducted several interviews with him over the phone and in his home in the north central Bronx. He was very enthusiastic about the interviews, perceiving my familiarity with hip-life, as a white, college student, as evidence of hip-life’s ability to enter the American mainstream. Since 2003, Sarpong, under the name ‘Phil Black,’ has managed hip-life artists’ careers in the United States. He has organized concerts in the Bronx, promoted local record sales, and encouraged media coverage to help establish the genre outside of Ghana.

The producer is a first-generation Ghanaian-American and believes his cultural roots have served him well; born and raised in the United States to Ghanaian parents, Sarpong characterizes himself as a “bridge-kid” with the ability to span cultural gaps in his personal life and career. However, Sarpong has not always viewed his cultural identity favorably. Growing up, he felt that that he was neither fully American nor fully Ghanaian because of his multicultural status. He recalls that his parents strived to preserve Ghanaian values and customs within their home to counteract the influences of American cultural norms they believed to be immoral and free-willed. Sarpong resisted his parents’ traditionalism, seeking to attenuate his ethnic identity to conform to what he perceived to be normal. In this mindset, Sarpong developed an interest in American hip-hop. As Sarpong matured, his love of hip-hop evolved into a passion for hip-life, a transition that, in part, enabled him to better embrace his identity. Today, Sarpong characterizes himself as “an American fully aware of [his] Ghanaian heritage.” He values both his American accent and understanding of Ghanaian society, a combination that has allowed him to network significantly in two countries.

Sarpong recalls that when he first encountered hip-life music during his travels to Ghana in the late 1990s, he thought it was very “corny.” He believes that early hip-life music such as Rockstone’s tried and failed to emulate American hip-hop. Rockstone, perhaps surprisingly, agrees with Sarpong. In a 2003 BBC article he admits, “The music I make here, if I played to some of my peoples in New York or London they would think it was corny.” He as-
serts, however, that young people gravitated towards his music nonetheless, mirroring American urban youth enthusiasm for hip-hop in the 1980s. According to Sarpong, hip-life production and beats improved over time. He credits rapper Morris Baby Face for creating rhythms in 2001–2002 that propelled hip-life forward and have since inspired about ten beats that are used repeatedly in other hip-life songs. Additionally, Sarpong views Hammer of the Last Two and Zapp Mallet as the first composers of quality party and dance beats that greatly contributed to hip-life's marketability in Ghana.30

Just as hip-life had encountered resistance from adults in Ghana, early hip-life imported to or produced in the Bronx elicited similar reactions from older African immigrants. Sarpong says that when hip-life emerged in the borough about seven years ago, Ghanaian-American adults thought the rapping promoted a negative agenda of violence and immorality. He explains that at the time, many American Ghanaians were involved in gang activity because they were looking to be accepted in any way they could within their new society. These experiences helped define hip-life as music of and for “the riff-raff.” “It was young people going through a stage in the 90s,” Sarpong says. In the same spirit as Rock-stone, Sarpong cooperated with other hip-life leaders to encourage hip-life artists to produce more “socially responsible music” that is, to showcase themes that appealed to the conservative consciousness of many Ghanaian Americans. Largely as a result of his guidance, hip-life production shifted away from gang culture and instead emphasized themes of love and partying. This helped improve adult perception of the genre; today, both youths and adults in the Bronx listen to hip-life, Sarpong claims.

This success has encouraged the producer to try to further develop hip-life's identity as socially responsible music.31 One of his most recent projects has been the establishment of 'Youth Icons,’ a non-profit organization that seeks to empower young people in Ghana through music.32 The project encourages cultural celebrities to serve as positive role models for Ghana's rising generations. Currently, Ghanaian hip-life sensation OBOUR serves as an “executive icon.” OBOUR is one of the most visible hip-life artists in Ghana and was elected president of the Musicians Union of Ghana in August of 2011.33 His involvement with Youth Icons has helped Sarpong maintain hip-life's appeal among conservative and socially conscious Ghanaians in Africa and in the Bronx. Hip-life's success in the Bronx has required other calculated efforts as well. Sarpong believes that his networking abilities have been critical for nurturing hip-life's presence in the United States. He maintains connections to music producers, DJs, artists, and financiers in the Bronx and Africa, as well as politicians and government officials in Ghana — and he is sometimes surprised by how these relationships have supported his goals. For instance, in 2010, Sarpong was visiting Oze Tavern, an African bar and club at 3rd Avenue and 138th Street in the Bronx, when the owner introduced him to DJ Kool Herc, the hip-hop pioneer largely responsible for the genre's earliest developments.34 Later that year, when DJ Kool Herc was performing at the City Parks Foundation's Summer on Stage performance in Crotona Park, he announced in front of the audience of 2,500 that he wanted to send a shout-out to hip-life, a new genre of hip-hop. “‘Let's support our brothers,’ he cheered,” recalls Sarpong. “It was the greatest endorsement I ever received,” he says. Similarly, Sarpong identifies a 2010 article in the New York Daily News documenting his efforts to bring hip-life to the Bronx and his relationship with Dr. Mark Naison, professor of African and African American History at Fordham University, as other key networking successes.35

While Sarpong has led hip-life's importation to the United States, he has not stood alone in his advancement of the genre abroad. During one of my interviews with Sarpong, he introduced me to Collins Owusu, a Bronx hip-life DJ known as DJ 14K. Owusu has complemented Sarpong's efforts through his own work in New York City's music industry during the past decade. Much like Sarpong, Owusu was excited that I felt hip-life's presence in the Bronx was worth studying. Owusu was born in Ghana and immigrated to America when he was six. Growing up in the United States, he found himself disconnected from his African roots as he tried to blend into the American mainstream. But when he fell in love with African music, this all changed. Today, hip-life and other African genres have reconnected Owusu with his heritage. He plays African music to predominantly African crowds throughout the Bronx and New York City.36

Owusu emphasizes his forays into multimedia as the key to his success. In addition to utilizing Twitter, Facebook, and other social media outlets, Owusu recently established the website, afrispot.com, an Internet hub of African music intended to promote music from a variety of African countries. With a similarly international focus, Owusu is cur-
rently producing a showcase of African music that will air in the Bronx, Brooklyn, and Manhattan via Bronxnet, a local nonprofit cable television station. Owusu believes that this televised music festival will “help the movement come out—at least until we get into mainstream TV.” In an effort to further diversify his publicizing strategies, Owusu recently partnered with African actor Koby Maxwell to produce a promotional video for the 2011 romantic mystery film starring Van Vicker titled *Paparazzi: Eye in the Dark*. Owusu used hip-life songs as the soundtrack for the video and the film itself will also incorporate hip-life music. Owusu believes that this project is an example of how, like hip-hop, hip-life is “a way of life.”

Despite these successes, some critics doubt hip-life’s marketability. John Collins, a musician, journalist, and professor in Ghana, argues that hip-life fails to satisfy Ghanaians’ penchant for dancing. He writes,

> Hip-life singers mime onstage to prerecorded backing tracks and their shows have practically done away with dancing audiences as well. The audience rather prefers to watch the onstage gyrations and antics of the macho rapper pop star and his dancers…If a person wants to enjoy a popular dance music session in Ghana today, it is better to attend a church service than to visit a commercial hip-life show.

Owusu contests this characterization, emphasizing that the primary reason hip-life is so appealing is because of its dance beats. “The music is all about rhythm. In many ways, the words are not what matters” he argues. Owusu explains that in response to his audiences’ love for dancing to hip-life music, he compressed forty songs into a single track of about twenty-five minutes. This type of mixing gives his audience heightened dance experiences consisting of many different hip-life rhythms played in rapid succession. In his DJ mix, “Red Rooster,” he combines three of these tracks, explaining that his audiences will dance for hours to the blended rhythms. Owusu also points to Azonto, a new hip-life dance craze based on an African beat-type found in many highlife songs, as further evidence of hip-life’s dance-oriented identity. Although originating in Ghana, Azonto has become a global fad that has enjoyed widespread publicity through YouTube videos and celebrity endorsements. In the Bronx, Owusu claims that each night, “I have to play at least three Azonto songs now, otherwise DJs ask ‘what’s up?’”

To some, Owusu and Sarpong’s quest to validate hip-life’s appeal outside of Ghanaian and Ghanaian-American circles may suggest that the genre has done less to affirm the resiliency of local cultures and more to bolster the standards of mainstream American entertainment. Their insistence on breaking into the American music industry may indicate that they view local dissemination as a somehow deficient venue for the genre. Likewise, some of their perspectives, such as the value Sarpong places on his American accent and American cultural literacy, may substantiate the notion that deemphasizing ethnic heritage is necessary for acceptance within the ever-crucial mainstream.

Yet, Owusu and Sarpong’s understanding of hip-life’s place within the international music scene does not easily conform to this cynical perception of their cultural self-awareness. For example, Owusu is concerned that many African artists, such as Young Ice, belittle their roots as they navigate foreign music markets. In his opinion, this only hurts African music industries—especially those like hip-life—that are trying to establish themselves abroad. Both men agree that the next hurdle for hip-life and other African music to overcome is the lack of recognition among African artists of their heritage. Sarpong thinks progress is already being made. For example, D-Black, the first hip-life artist to be nominated for BET’s Best International Rapper Award, celebrates his African heritage as part of his image. Owusu and Sarpong believe that the industry needs more artists like D-Black to give African music the exposure and credit it both deserves and needs to thrive. Sarpong states that “paying homage to Africa” is at the forefront of his agenda as he extends his networks and increases the number of artists he manages in the United States. While Owusu’s and Sarpong’s commitment to ‘all of Africa’ may unjustly mythologize the continent, it also suggests that not only are they unwilling to sacrifice acknowledging hip-life’s African heritage as they promote the genre, but they view its cultural roots as something that must be capitalized upon to further the music’s success. In this way, Owusu and Sarpong’s perspectives support hip-life’s cultural autonomy and ability to succeed within the mainstream without conforming to other cultural ideals.

On a more personal level, Owusu and Sarpong’s desire for their musical peers to embrace their identities through hip-life is evidence of the intimate influence the music has exerted upon their self-awareness as Ghanaian-Americans. Both individuals recall feeling disconnected from their families’ heritages as youths, and they both claim that hip-life...
helped them overcome their own self-imposed suppression of their African identities. Rockstone professes similar sentiments. In his reflection on leaving the American-style rap tradition to explore the musical potential of Ghana’s native languages, he states, “We weren’t being ourselves back then. But now it feels like we’re all coming back home.”

Thus, while the worldwide dissemination of American hip-hop may be critiqued as a homogenization of non-American local cultures, indigenization movements such as hip-life illustrate the ability of said cultures to reclaim their identities. The movement’s emergence in the Bronx perhaps even demonstrates the potential for Ghana to invert the process of Americanization by exerting its own cultural influence upon the United States. Hip-life’s introduction of indigenous lyrics, conservative content, and African beats to the Bronx may signal a gradual infusion of Ghanaian styles and values into mainstream American culture. While it is unknown how much hip-life will actually bear upon the culture of the United States, especially given the immense difficulty foreign-language artists face in finding favor among English-speaking audiences, Sarpong and Owusu are optimistic. Owusu asserts that hip-life is among the most marketable music genres today. “We can compete with rap, we can compete with R&B, and we can compete with hip-hop—because we have the material,” he claims. Considering the growing trend of African immigration to the United States, the wide appeal of hip-life across various age groups within Ghanaian culture, and the burgeoning international Azonto craze, Owusu’s optimism may be warranted. Like hip-hop, hip-life may soon emerge from its humble beginnings to leave an indelible mark on cultures beyond its own.

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**Awards and Recognitions**

Jeffrey Lockhart (FCRH ’13) was awarded the Student Travel Award, AAAI Fall Symposium: Artificial Intelligence for Gerontechnology, 2012, Funded by the National Science Foundation (mentor: Gary Weiss, Computer and Information Science).
“She wept for him”
Sympathy and Male Power in *Sense and Sensibility*

*Rachael A. Prensner, FCRH ’14*

*Dr. Susan C. Greenfield, Department of English*
*Faculty Advisor*

Rachael Prensner, FCRH ’14, is an English major and also writes for the *Fordham Ram*. She is involved in University Choir and *The Ampersand*, Fordham’s student-run literary magazine. Rachael first discovered Jane Austen’s novels in high school. Studying these works under Dr. Susan C. Greenfield has helped her to develop a feminist interpretation of her own.

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Abstract:

Elinor Dashwood, the heroine of Jane Austen’s Sense and Sensibility, is known for being introverted and level-headed, but she isn’t universally anti-emotion. Though she consciously suppresses her own emotions and encourages her sister, Marianne, to do the same, Elinor is eager to sympathize with the male characters in the novel. Through her judgments about who may and may not express emotion, Elinor inflicts an emotional disinheritance on herself and her sister which mirrors their financial disinheritance through the system of primogeniture. When Austen wrote Sense and Sensibility, the debate over inheritance was still brewing between Edmund Burke and Thomas Paine, and she presents the workings of Elinor’s mind as one casualty of the system.

A SCENE IN JANE AUSTEN’S Sense and Sensibility that encapsulates the opposing temperaments of Elinor and Marianne Dashwood better than any other is when they get news that the man Marianne loves is ending things with her. Free and effusive in emotional expression, Marianne weeps in her bed, his letter still in hand. (Kate Winslet’s performance as Marianne in this scene is probably what won her an Oscar in the 1996 film adaptation of the book). Elinor initially joins in, her grief for her sister certainly compounded by her own recent heartbreak. But then Elinor draws back, and with the detached acuity of an outside observer, “watched by” and “knew that such grief, shocking as it was to witness it, must have its course.” This kind of extreme detachment—and nearly superhuman self-possession—characterizes Elinor throughout the novel. When Elinor experiences things of emotional importance, she deals with them internally. Her reticence can be frustrating, so at times we might want to say along with Marianne, “Cold-hearted Elinor! Oh! worse than cold-hearted! Ashamed of being otherwise?” In fact, Elinor is not cold-hearted, but seems to wish she could be. She feels deeply but unwillingly, and she hides her emotions with a self-composure her sister cannot begin to understand. Though Elinor actively suppresses her own emotions and exhorts her sister to do the same, she tolerates feelings in the men around her. She sympathizes strongly with both Edward and Willoughby even though they have done plenty to deserve her censure. Elinor’s judgments regarding who may and may not express emotion reflect an internalization of male-dominated authority structures. In the same way Elinor, her mother, and sisters are financially victimized by the system of primogeniture, Elinor inflicts an emotional oppression on herself and Marianne as if they are not entitled to feelings of their own.

At the beginning of the novel, Elinor’s father dies and, according to the system of primogeniture, the family estate is passed in its entirety to her half-brother, John. Her father laments this reality on his deathbed, and he asks John to remember the financial situation of the Dashwood women. In a darkly comic scene, John and his wife, Fanny, discuss what is their duty by his half-sisters. They consider and reject several different schemes as too costly, and by the end talk themselves down to giving the women gifts of food from time to time. Fanny dismisses the idea of paying Mrs. Dashwood a yearly sum because “people always live for ever [sic] when there is an annuity to be paid them.” John and Fanny’s maneuverings bring satirical humor to the situation, but the predicament of the Dashwood women resonates with debates over inheritance in Austen’s day.

The law of primogeniture was a long-established convention that was key to the stability of the landowning upper class. In Austen’s day, the law came under attack from populist writers like Thomas Paine, probably most well-known today for his pro-revolutionary pamphlet, “Common Sense.” Paine appealed to democratic principles to undermine the validity of a system that kept the distribution of property so consolidated and so stagnant: “In a family of six children, five are exposed. Aristocracy has never but one child. The rest are begotten to be devoured.” (Paine was not one to slight on pathos in his rhetoric.) Paine claimed that the system was bad for the inheritor as well as the disinherited, specifically that being given property for nothing—and with it the necessity of social status and power over others—appealed to tyrannical impulses, the very instincts the Enlightenment theoretically endeavored to counteract. A century and a half earlier, John Locke had established owning property as a
necessary component of intellectual freedom with his metaphor of the mind as a compartment—or room—to be furnished with ideas over a lifetime. With such a discourse already in place, the way was clear for Paine to paint the system of primogeniture as at odds with human dignity, calling into question individualism. Aligning himself with a long English tradition of aristocracy, Edmund Burke nevertheless gives his primogeniture a democratic spin: “It has been the uniform policy of our constitution to claim and assert our liberties as an entailed inheritance derived to us from our forefathers, and to be transmitted to our posterity.” Burke’s argument is a balancing act that defends civil liberties, while painting them as an “entailed inheritance” that demands the respect of ages past. He raised questions about what should happen to civil order should the constraints of primogeniture be removed, drawing parallels to France, where the Revolution was underway. Burke and Paine exemplify the poles of the debate over primogeniture, and Elinor exemplifies those the system disenfranchises.

Elinor’s central problem throughout the novel is being disinherited, and the plot’s tension comes not from how she overcomes this problem—we know she will be married—but from how she comes to terms with her place in society and maintains her integrity as an individual. Early on, Elinor falls in love with her brother-in-law, Edward, though she talks about her feelings with such caution it sounds like she is on the witness stand as a criminal defendant. When her sister, Marianne, tries to get her to confess her love for him, Elinor responds, “I do not attempt to deny that I think very highly of him—that I greatly esteem, that I like him.” Disgusted with Elinor’s reserve, Marianne presses her on the point, and the crux of Elinor’s response is, “I am by no means assured of his regard for me.” Elinor’s unwillingness to acknowledge her feelings here, even in a private conversation with her sister, provides a template for her conduct throughout Sense and Sensibility. As the plot is set in motion, Austen highlights Elinor’s aversion to emotion in the way she interacts with other characters, particularly according to their varying social statuses.

Edward is the beneficiary of primogeniture, the system that has disinherited Elinor and the other Dashwood women. Despite his privilege, when he visits them at Barton, he spends his time brooding on the limitations of his financial situation as well as on his engagement to Lucy Steele, which he hides from Elinor. Edward complains of his financial state: “[It] probably will always be a heavy misfortune to me, that I have had… no profession to give me employment, or afford me anything like independence.” Edward’s complaint about his situation is two-fold: it makes him feel useless, and it constrains him because he cannot choose his own path. Edward’s psychic pain, which today we might diagnose as depression, resonates with Paine’s argument about the toll of primogeniture on the ruling class, but his feelings of limitation strike a false note since his inheritance grants him financial independence. A page later, Edward blames his aristocratic upbringing for his character defects as well. “Unfortunately my own nicety, and the nicety of my friends, have made me what I am, an idle, helpless being.” Elinor should pick up on the flimsiness of this excuse; Edward seems to think he’s a victim of his privilege, but she has less agency—and is not less “helpless”—because she has no inheritance to speak of. Furthermore, her situation is doubly precarious because being a woman disqualifies her from working. Instead, she silently gives him sympathy, and continues to fixate on what Edward has said after he leaves: “A subject so interesting, must be before her, must force her attention, and engross her memory, her reflection, and her fancy.” Elinor is unable to choose whether or not to think about Edward; he is an obsession that forcibly overrides her free will.

Soon after Edward leaves Barton, Elinor finds out about his engagement to Lucy. Given her identification with Edward’s feelings, we do not expect Elinor to follow the archetype of a jilted woman, that is, to dismiss Edward as good-for-nothing and forget about him for good. Instead, she actively suppresses her own emotions and doubles her obsession with Edwards. When Lucy shows her Edward’s letters, this proof of their engagement “for a short time made her feel only for herself,” but “she struggled... resolutely against the oppression of her feelings,” and almost immediately sidelines her own emotions to consider Edward’s. “If he had injured her, how much more had he injured himself; if her case were pitiable, his was hopeless.” She estimates his pain above her own and states his injuries against her in the conditional. A page later, “She wept for him more than for herself.” When her emotional accounting is done, Elinor believes, in matter-of-fact terms, that Edward is worse off and more deserving of her tears than she is. Throughout this process, Elinor maintains belief in Edward’s constant feelings for her. “His affection was all her own.” His feelings are much more improper than hers, since he is the one engaged to someone else, but Elinor voices them more openly in
her mind. She only mentions her feelings in resolving “to combat her own affection for [him].”

If Elinor is surprisingly lenient toward Edward, she is extraordinarily harsh toward Lucy. “Could he ever be tolerably happy with Lucy Steele...illiterate, artful, and selfish?” While Elinor’s criticism is apt, Lucy is in a situation very similar to hers; both women are dependent on marriage for financial security. “Self-interest alone could induce a woman to keep a man to an engagement, of which she seemed so thoroughly aware that he was weary.” Elinor can criticize Lucy’s concern with money, but marrying someone financially independent, like Edward, is the only realistic path Elinor herself has to stability. Any self-interest Lucy has follows from a real, not perceived, need. It is abundantly clear that Edward is the one who has wronged Elinor by encouraging her to develop feelings for him that he cannot fulfill. Elinor is so entangled in Edward’s emotions, however, that she is unable to acknowledge that he has done anything wrong and instead insists that Lucy has duped him. Despite her tortured logic, Elinor’s thought process seems so equitable and clear-minded that her self-deception is rarely obvious. One tell-tale clue is when she refers to Edward’s engagement with Lucy as a “youthful infatuation of nineteen,” which is Elinor’s own age during the action of the novel. She would never suggest that she, or Marianne, is too young to make a decision about marriage or to know what her feelings are—even though she does not give them value.

We can understand that Elinor’s eagerness to forgive Edward flows from her love for him, but her acquittal of Willoughby requires more explanation. When he thinks Marianne is on her deathbed and comes to state his case before Elinor, she initially tries to throw him out. She voices steady opposition nearly all the way through his appeal, but, as he draws to a close, she starts to frame justifications for his conduct. As earlier with Edward, Elinor’s thoughts are “fixed” on Willoughby’s words. Echoing Edward’s earlier justifications, Elinor supplies Willoughby’s defense for him and sympathizes with the injury that “too early an independence and its consequent habits of idleness, dissipation and luxury, had made in the mind, the character, the happiness, of [Willoughby].” She concludes that “the world had made him extravagant and vain,” settling on his environment as responsible for his character as well as his actions. When he asks Elinor if she thinks better of him, “Elinor assured him that she did; —that she forgave, pitied, wished him well—was even interested in his happiness.” Elinor gives him more grace than he asks for. In the days after their meeting, “Willoughby, ‘poor Willoughby,’ as she now allowed herself to call him, was constantly in her thoughts.” Elinor has no peace from him, but “remained too much oppressed by a crowd of ideas.” Perhaps the peak of her empathy is when she “for a moment wished Willoughby a widower.” She certainly is not thinking of how his wife might feel about this.

Elinor’s acquittals of Edward and Willoughby are, in one sense, an echo of her emotional suppression; reflecting her feelings off of them eases the toll their betrayals take on her. There is something far less defeated in her own and Marianne’s heartbreak if Edward and Willoughby have ultimately done right by them. Her leniency speaks to other facets of Elinor’s way of relating to male authority. Elinor, her mother, and her sisters have all been disinherited by the system of primogeniture. We might expect that Edward and Willoughby’s privileged upbringings should bias Elinor against them, but this is not how she sees things. Rather, she sympathizes with them for the “misfortunes” their backgrounds have levied on them and adds emotional privilege to their financial privilege.

Elinor shows this same deference toward Colonel Brandon; she views her own and Marianne’s unrequited love as damning, but his as a virtue. Col. Brandon is deserving of her respect, but she grants him privileges that exceed his merits. While her sister recovers, for instance, she reflects on Col. Brandon: “to his sufferings and his constancy...the reward of her sister was due.” Elinor certainly never claims that she deserves Edward because of her constancy. As long as he is engaged to Lucy, she tries to keep her feelings as secret as possible. Internally, she speculates that he would be happier with her, and, therefore, she would make a better match. More-

Through her rejection of emotion, Elinor defies eighteenth century stereotypes about women who are too sensitive to think straight.
over, Elinor objectifies Marianne as a “reward” to be won by Brandon. Her thinking mirrors that of John and Fanny’s when they fix a price on the Dashwood women in the second chapter of the novel. While they view Mrs. Dashwood as a dangerous liability who might “live for ever [sic]” Elinor refers to her sister as compensation for Brandon’s devotion (and implicitly as a valuable asset that may pay the dividends of Col. Brandon’s living for years to come). What she knows of Col. Brandon bodes well for his treatment of Marianne, but she makes no mention of her sister’s feelings here.

In Elinor’s mind, the right to emotion flows from legal rights; men, with the advantages of property and inheritance, are able to bring their feelings to fruition. Women, lacking these privileges, can only express themselves with futility. When it comes to characters who do not take part in the romance plot, Elinor is harder on women than men. She criticizes Fanny, Lady Middleton, Miss Steele, and, occasionally, Mrs. Jennings far more harshly than she does her brother, Sir John, and Mr. Palmer. In Elinor’s world, it is impossible for a woman of small fortune to make a man an “offer” or to support him, so in that sense her feelings have no economic reality.

Through her rejection of emotion, Elinor defies eighteenth century stereotypes about women who are too sensitive to think straight. In her Vindication of the Rights of Women, Mary Wollstonecraft criticizes female education and her fellow women as “vain and helpless,” occupied with trivial matters, whose “thoughts turn on things calculated to excite emotion.” These things Elinor certainly is not; in fact, she takes on a masculine role at certain points in the novel. With her father dead, Elinor takes over as the head of her family, keeps the books so her mother and sisters can live within their means, and presents Edward with the offer of Col. Brandon’s living (even though this will enable him to marry Lucy and virtually seal her own unhappiness). Still, Austen makes clear that, as capable and resilient as Elinor may be, her emotional self-deprivation is not a practice to be admired. If Elinor is ever to make sense of her position in society—and its inherent injustices—she needs to stand behind her own experience as valid. Through Elinor, Austen takes a step toward expanding the concept of Enlightenment individualism, showing that it is not purely an abstract or intellectual concept, but something that is actively worked out by regular men and women.

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**Endnotes**

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Making Midtown
Brandon Pietras, FCLC ’12

Brandon Pietras, FCLC ’12, studied Middle Eastern history before developing a passion for design. During his senior year, Brandon conducted research and developed architectural designs as part of an ambitious effort to rebrand Manhattan’s Garment Center. He received the Susan Lipani Award for Excellence in Visual Arts upon graduation. Brandon currently works at Kiss+Cathcart Architects and as a freelance conceptual designer and architectural renderer. He will be pursuing a master’s degree in architecture in the fall.

Acknowledgment: Thank you to Colin Cathcart for his mentorship and for giving me the opportunity to work on Making Midtown. Also, to the Design Trust for Public Space, the CFDA and Making Midtown’s project fellows for making this project a reality.

Abstract
In 2009, the Council of Fashion Designers of America reached out to an independent nonprofit organization, the Design Trust for Public Space (DTfPS), to conduct a multidisciplinary study of New York City’s Garment Center. The Garment Center had, since the 1950s, been struggling to keep manufacturing afloat in the face of rising dependence on foreign labor. The DTfPS has conducted its research in two phases. The first, Made in Midtown, proved that the Garment Center remains an essential creative incubator and resource for high fashion not only within New York City, but in the entirety of the fashion industry. In the current phase, Making Midtown, the DTfPS has hired a fellowship of professionals to create a proposal to redesign, rezone, and rebrand the Garment Center to reflect its purpose and spirit while providing a twenty-four-hour-use district for visitors to enjoy. It is their hope that this transformation will help turn the tide of job loss in the manufacturing center and spur further investment and expansion. As an intern to Colin Cathcart, a fellow of the current phase, professor at Fordham University, and co-founder of Kiss+Cathcart Architects, I have conducted research into street-level use of space throughout the Special Garment Center District. My focus has been primarily in research and analysis of the Garment Center’s public spaces, and how both industry workers and pedestrians utilize these spaces. My research has informed several key aspects of Making Midtown’s design proposals. With those findings, we have prepared a series of design proposals to improve accessibility, streetscape conditions, and economic efficiency in the Garment Center. The DTfPS will publish these proposals with those of the other fellows within the coming months, presenting the city government and stakeholders with a comprehensive vision for the Garment Center’s future.

Introduction
Between 1870–1900, New York’s Theatre District became increasingly popular among the poor and misfortunate of Manhattan. With little oversight from authorities, the bawdy Theatre District provided the perfect locale for prostitution and gambling to establish themselves. As the character of the district began to spoil, wealthier tenants began to leave, accelerating the District’s decline. The “Tenderloin,” as the District became to be known, was the center of Manhattan’s illegal sex trade into the twentieth century. Meanwhile, on Fifth Avenue, hordes of immigrant workers flooded the streets. Worried that the immigrants would interfere with their plans for an internationally renowned boulevard, the Fifth Avenue Association (FAA) displaced them. The newly jobless and homeless immigrants settled where no one else would—the Theatre District. The Theatre District, ripe with squalor and underdevelopment, was full of opportunities for its thousands of new residents, and by the twentieth century, it became the fastest growing site of development in Manhattan.

Garment production before the Garment Center
New York City was an important link in the chain of garment production long before the inception of the Garment Center. Until the invention of the sewing machine in 1828, New York City was the world’s center for textile storage. With its enormous stores of material resources and social capital, it was only logical that New York would become the center for garment production as well as storage.

A match made in Midtown
In the early twentieth century, a massive influx of immigration brought a large Eastern European, Jewish community to Manhattan at nearly the same time as the garment industry boomed in the city. By 1910,
garment manufacturing employed as much as 47% of New York’s workforce, nearly doubling its presence on Fifth Avenue. This marked the first of two important changes in New York that would transform Midtown into the district we know today. The second was the growth of the women’s labor movements in New York. By 1909, women’s working conditions within the garment industry had become deplorable, prompting the growth of a garment labor movement against harassment and exploitation in the workplace. By 1911, tenement conditions had worsened to the point where a new building typology, the loft factory, was invented to satisfy the needs of garment production. The loft factory was intended to improve conditions, but only led to new methods of worker exploitation, which culminated in the disastrous Triangle Shirtwaist Fire on March 25th.

The 1916 Zoning Resolution
By 1915 the rapid influx of Jewish immigrants to the Fifth Avenue garment factories began to make the FAA unhappy. As spokesperson for the FAA, Robert Griar Cooke “announced ambitious plans to transform Fifth Avenue into a thoroughfare that would compare with ‘London’s Bond Street…the Rue de la Paix of Paris…or the Unter den Linden of Berlin.’” Needless to say, the hordes of tenement workers had no place in his vision. Coupled with boycotts and throttling by lenders, the “Save New York Campaign” effectively forced garment manufacturing out of Fifth Avenue through new zoning resolutions prohibiting loft construction on the Avenue. The 1916 Zoning Resolution was cited as “the most important step in the development of New York City since the construction of the subways.”

Quarantine and the new Garment Center
The site that the FAA and the city chose to quarantine the displaced Fifth Avenue workers is where the Garment Center remains today—bordered east and west by Broadway and Fifth Avenue, and north and south by 34th and 42nd Streets. A new cooperative of Garment Center workers formed and their new buildings and loft conversions quickly eradicated the bordellos and prostitution in the district was wiped out by 1919.

The Metropolis of Tomorrow
The 1916 Zoning Resolution, besides helping transform Fifth Avenue into Cooke’s boulevard, forever changed the aesthetics of Manhattan’s architecture. The resolution imagined an invisible envelope (not to be confused with a building envelope—a very real structural skin used in modern construction) surrounding each building plot. This envelope restricted the height of newly constructed buildings to some given multiplier (1x, 1.25x, 1.5x etc.) of the width of the street. Multipliers varied by districts defined in the resolution. For example, a building in a 1.25x district with 50’ streets could only rise to a height of 72.5’.

Limiting the heights of buildings by district was hardly unique, but the 1916 resolution allowed “for each one foot that the building or a portion of it sets back from the street line, n feet shall be added to the height limit of such building or such portion thereof.” In simpler terms, a building could rise higher than its district’s height limit so long as it is “set back” further from the street. This was implemented to ensure that streets were allowed sufficient sunlight. As steel construction became the norm, developers in New York could build ever higher. After a certain height, rectilinear buildings begin to reduce the amount of sunlight penetrating to street level. The setback-height restrictions enacted in 1916 effectively eliminated this problem.

A new architecture for a new district
The new setback-height restrictions created some debate among New York City officials. How would these reforms affect new architecture? To help clarify the resolution’s effects on the built form, the city
hired Hugh Ferriss to complete a series of renderings. Architects like Ralph Walker and Ely Jacques Kahn used these new regulations to construct the forms we now associate with Art Deco architecture in Manhattan. Architect Ely Jacques Kahn was best known for using the new forms to create an “essentially American” style of architecture, utilizing contrasting light and dark planes combined with an ornamentation that “sloughs off” at higher elevations. The scale of ornamentation grew from detailing elements to the entire building’s façade. No district was more widely affected by these changes than the Garment Center. Kahn built ten total buildings in the Garment Center, and by 1926, the Garment Center was the fastest site of development and construction in New York.4

FASHION IN THE POST-WAR ERA

By the end of World War II, Paris was replaced by New York as the fashion capital of the world. To solidify its new status, the garment industry quickly set about creating institutions to promote fashion and foster creativity within the District. The New York Dress Institute was in charge of “[promoting] the city as the premier site for fashion design and [bolstering] production and sales.” The Fashion Institute of Technology (FIT) was founded in 1944 and has since become a household name because of its influence in both the fashion and education industries.

Unfortunately, the rapid rise of New York’s garment industry began to work against itself. Between 1947 and 1956, the Garment Center lost twenty thousand jobs to foreign labor. This was a direct result of the invention of modern sportswear that became popular by the early 1950s. New York’s garment industry was the center of sportswear production—the “quintessential work of the contemporary American designer”—but the demand for mix and match separates quickly outgrew the Garment Center’s production capabilities. The sportswear boom required larger manufacturing and warehouse spaces and cheaper labor. Skilled tailors, the acquisition and production of which made the New York Garment Center so popular, were no longer needed. Desperate to meet demand, suppliers began looking farther and farther from union control for work—even overseas. Between 1958 and 1977 manufacturing production in the Garment Center was cut in half. By 1980, imports accounted for more than half of the goods sold in the Garment Center.

The Special Garment Center District (SGCD) and the Fashion BID. In 1987, a section of the Garment Center, roughly between 35th and 39th Streets, was rezoned as the Special Garment Center District (SGCD) in an attempt to preserve manufacturing space. Under SGCD Zoning, building owners must set aside at least fifty percent of side street properties for manufacturing.7 Although largely unenforced, the SGCD helped keep rents stable and preserved eight million square feet as manufacturing space, curtailing loft conversions. Unfortunately, lack of enforcement and oversight has allowed numerous illegal conversions to go unreported.

MADE IN MIDTOWN8

By 2007, the job losses in garment industry manufacturing showed no signs of reversing. While apparel manufacturing had remained one of the largest manufacturing industries in Manhattan, the Bloomberg administration struggled to maintain its success in the face of such a rapid decline. In 2007, discussion began about changing zoning in the district from manufacturing space to commercial and residential spaces. After two years of discussion, there was no consensus. Yeohlee Teng, a fashion designer working in the Garment Center and General Secretary of the Council of Fashion Designers of America (CFDA), decided to prove to the Bloomberg administration that the Garment Center remained an important contribution to the City. The CFDA joined forces with the Design Trust for Public Space to conduct a two-phase multidisciplinary study of New York’s Fashion District with the express goal of proposing a large-scale transformation of the Fashion District’s urban environment.

In its nascent publication, Made in Midtown?, the Design Trust consolidated their findings into four reasons why New York’s Fashion District remains an essential creative incubator and resource for high fashion both in New York City and worldwide. The Garment Center is a research-and-development hub for the fashion industry, the fashion start-up capital of the world, a center for innovation, and a vital economic engine for the city.9 Perhaps the most important finding of these studies is that the Garment Center operates as a vertically integrated center of design and production. The Garment Center should be thought of not as a collection of independent and competing businesses, but as a network of cooperative services that work together towards the common goal of innovation and design excellence. This in turn sheds light on one of the Garment Centers biggest problems: the shifting of manufacturing and production to locations outside of the District.
The close proximity of each stage of garment production in the Garment Center is what enables designers to have a level of control over the production of their garments, which is impossible in other fashion centers. Nowhere else can a designer walk across the street or take an elevator to see their garment in every stage of production. This proximity enables an incredibly fast turnaround of garments as well and allows for unprecedented quality control. Over the last few decades, a vicious cocktail of rising rent prices, illegal space conversions, rising demand and shorter production cycles has pushed many manufacturers out of the Garment Center. The level of production demanded by the Garment Center's twenty-first century manufacturing center is crippled by the inefficiencies of a nineteenth-century built environment. Once manufacturers begin to disengage from the integrated circuit of the Garment Center, they quickly find themselves without clients and out of work. As increasing numbers of cutters, sewers and pattern makers go out of business, it becomes more difficult for both emerging and established designers to produce garments, stifling innovation in turn. In response to these findings, New York City pulled its rezoning proposal. The Design Trust's success was without doubt due to its rebranding the garment center as "a thriving and hugely productive research-and-development hub for high-end fashion" and an incubator for talent instead of the crumbling "relic of a bygone age" that it was previously considered, in cooperation with a new understanding of the impact of space on productivity.10

**Making Midtown**

Making Midtown, the second phase of the Design Trust's initiative, was announced on June 22, 2011, in a brief media alert. The alert summarized Making Midtown's goals as to “deliver actionable recommendations to the Bloomberg administration to sustain the creative production made possible by garment factories and suppliers, while addressing the Garment Center's economic realities, physical environment, and quality of life.” Colin Cathcart, my advisor, a professor at Fordham University, and co-founder of Kiss+Cathcart Architects, was hired as a fellow.

**The Public Realm**

The Made in Midtown phase discovered that many of the Garment Center's problems were caused by the restrictions that aging spaces put on manufacturing, but before redesigning the Garment Center could begin, we needed to understand why those spaces reduced creativity and bred inefficiency. The natural first step was to start with the big picture and then, after we understood the operation of the Garment Center as an entity, to pick apart its shortcomings to inform specialized solutions.

My first major assignment was to conduct a survey of the Garment Center's streetscape and the use of the public realm. My initial research was limited to the Special Garment Center District, created by a 1987 zoning resolution with the intention of preserving manufacturing space.

The SGCD sits roughly between 9th Avenue and Broadway, between 34th and 40th Streets. Excluding buildings on each Avenue, the SGCD is divided into two preservation zones: P-1 and P-2. The P-1 preservation zone, located between 7th Avenue and Broadway, allows showroom, manufacturing, and retail spaces but prohibits other uses unless through a legal conversion. Conversions to office spaces are allowed so long as the building owner preserves manufacturing space of square footage equal to the conversion. The P-2 zones between 9th and 7th Avenues allow for conversions to residential and hotel uses. Buildings under 70,000 square feet are exempt from zoning restrictions.12 My survey resulted in two diagrams showing a bird's-eye snapshot of street-level activity within the district. Details such as relative traffic speed, density, pedestrian “bunching” at street corners, and types of vehicles utilizing loading zones gave insight into the needs and shortcomings of the Garment Center's streetscape, and directly inspired or influenced design considerations.

Additionally, one diagram summarizes data captured in the day, the other at night. The difference between the two is remarkable. Many who work within the Garment Center have complained about its character at night. They describe it as dirty, shady and even threatening. How can streets bustling with activity in the day change so drastically when the sun sets? My diagrams show that the traffic of pedestrians shifts almost completely to the avenues at night, leaving very few people on the side streets. Vehicular traffic thins after the shops close. The Garment Center, which benefits greatly from its position in the daytime, becomes a barren no-man's-land acting as a thoroughfare between the tourist-packed Hell's Kitchen and the Theatre District. One of our goals is to transform the Garment Center into a twenty-four-hour use district with a multitude of uses beyond manufacturing. The findings inspired by my diagrams represent only a small fraction of new...
designs and proposals for the new Garment Center. Skyline parks, new retail spaces, runway lighting on 7th Avenue, new zoning regulations, and façade improvements are all a part of the proposed master plan for the new Garment Center.

References

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12 Building Zone Resolution, Article XII, Chapter 1.
Directive Effects of Aromatic Nitration Based upon Differing Experimental Conditions

Kelsey Topa, FCRH ’14
Dr. Amy M. Balija, Chemistry

Kelsey Topa, FCRH ’14, is a native of Gainesville, GA, and is majoring in biology. Under the tutelage of Dr. Amy Balija, she was inspired to study nitration reactions in depth, going beyond the initial intent of improving the method for student use. After graduation, she plans to attend medical school.

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Introduction
The nitration reaction of mono-substituted aromatic compounds is employed in organic chemistry laboratory courses due to its relatively low cost and high pedagogical value (Gilbert and Martin 2002; Pavia et al. 1998). Typically, the nitration substrates commonly used in laboratory courses are restricted to benzene derivatives possessing electron withdrawing substituents (Treadwell and Lin 2008; McElveen et al. 1999; Clennan M and Clennan E 2007). Mono-nitration of aromatic substrates possessing electron-donating substituents or halogens is difficult to complete in a four hour laboratory period due to the reactivity of the substrates. The highly reactive nature of the substrates requires slow addition of the reactants to ensure safety and the formation of the desired products, which usually exceeds four hours due to the difficulty of reaching a baseline temperature after addition of substrate. Therefore, new procedures are needed to synthesize mono-nitrated products appropriate for an undergraduate laboratory (McElveen et al. 1999; Paul 1958; Fitch 1955). We hypothesized that these conditions could be modified for an introductory organic chemistry laboratory experiment with the following goals: (1) mono-nitration of electron-rich substrates, (2) isolation of the desired product by vacuum filtration, (3) purification of the product through recrystallization, and (4) completion of the experiment in four hours. Several electron-rich and halogenated substrates were employed in the aromatic nitration reaction attempted, and the reaction conditions of the desired products were optimized. The results of this study and experimental procedures are presented herein.

General Experimental Procedure
The reactions were performed under atmospheric conditions. All reactions were carried out in a hood. Solvents and reagents were purchased and used without further purification. Reactions were monitored by thin layer chromatography (TLC) using 60 F254 silica gel glass plates, and the TLC bands were visualized by ultraviolet light. 1H nuclear magnetic resonance (NMR) spectra data were recorded at 300 megahertz (MHz), and 13C NMR spectra were recorded at 75 MHz on a Bruker Advance DPX300 Spectrometer. Chemical shifts were reported in parts per million (ppm), and coupling constants were reported in hertz (Hz). 1H NMR spectra obtained in CDCl3 were referenced to 7.26 ppm. 13C NMR spectra obtained in CDCl3 were referenced to 77.0 ppm. The melting points were determined using a Mel-Temp apparatus and are uncorrected. The characterization data obtained were similar to what had been previously reported in the literature (Cornella et al. 2010; LaPera et al. 2006; Jiao et al. 2011; Yang and Xi 2007; Fors and Buchwald 2009; Pan et al. 2009).
Various procedures were used due to the different activating groups on the benzene. The following are the experimental procedures that provided mononitrated products in high yield and with minimal purification. All of the procedures can be completed in less than four hours. Although the mono-substituted benzene substrates in this paper can undergo nitrination using any of these procedures, only the most efficient methods are described.

**Procedure A**

![nitrination conditions](image)

Glacial acetic anhydride (17.4 M, 0.5 g) was added to a mono-substituted benzene substrate (0.5 g) in a test tube. The test tube was cooled to 0 °C prior to adding 1 drop of concentrated sulfuric acid (12.5 M). After the resulting mixture cooled to 0 °C, ice-cold concentrated nitric acid (16.0 M, 1.2 mL) was added slowly dropwise, maintaining the internal temperature below 8 °C. The reaction mixture was then stirred for 10 minutes. After this time, the reaction mixture was poured into a beaker of ice and 2 solid pellets of sodium hydroxide were added. In examples where a solid precipitate formed, the product was collected using vacuum filtration and washed with ice-cold water.

**Procedure B**

Concentrated sulfuric acid (12.5 M, 3.0 mL) was added to a mono-substituted benzene derivative (0.5 g) in a test tube. The resulting mixture was cooled to approximately 0 °C using an ice bath. Ice-cold concentrated nitric acid (16.0 M) was added slowly dropwise while maintaining the internal temperature below 8 °C. After 10 minutes, the reaction mixture was poured into a beaker of ice. In examples where a solid precipitate formed, this product was collected using vacuum filtration and washed with ice-cold water. In some cases, the crude product from above was triturated with ice-cold methanol in order to further purify the product.

**Procedure C**

To a test tube containing concentrated sulfuric acid (12.8 M, 3.0 mL), mono-substituted benzene (0.5 g) was added dropwise. The mixture was cooled to −2 °C in a NaCl-ice bath. Ice-cold concentrated nitric acid (16.0 M, 0.4 mL) was then added dropwise to the test tube maintaining the internal temperature below 5 °C. The reaction mixture was stirred for 30 minutes, and then poured into a beaker of ice. Concentrated ammonium hydroxide (14.8 M) was added until a precipitate formed. This precipitate was collected using vacuum filtration and was washed with ice-cold water. The liquid filtrate from above was cooled in an ice bath. Additional concentrated ammonium hydroxide (14.8 M) was added until a second precipitate formed. The second product was also collected using vacuum filtration and washed with ice-cold water.

**Results and Discussion**

Table 1 summarizes the results of nitration reactions involving several halogenated and electron rich aromatic substrates.

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Product</th>
<th>Isolated Yield</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromobenzene</td>
<td>para</td>
<td>38%</td>
<td>A</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>para</td>
<td>19%</td>
<td>A</td>
</tr>
<tr>
<td>Fluorobenzene</td>
<td>---</td>
<td>---</td>
<td>A, B</td>
</tr>
<tr>
<td>N-Methylaniline</td>
<td>para, meta/para</td>
<td>28%, 53%</td>
<td>A, B, C</td>
</tr>
<tr>
<td>N,N-Dimethylaniline</td>
<td>para, meta/para</td>
<td>49%</td>
<td>C</td>
</tr>
<tr>
<td>Anisole</td>
<td>---</td>
<td>---</td>
<td>A, B</td>
</tr>
<tr>
<td>Acetanilide</td>
<td>para</td>
<td>49%</td>
<td>C</td>
</tr>
<tr>
<td>Toluene</td>
<td>---</td>
<td>---</td>
<td>A</td>
</tr>
</tbody>
</table>

a. The Product was an oil and could not be isolated by vacuum filtration.

b. The dinitrated product was obtained.
Halogenated Substrates

Bromobenzene, chlorobenzene, and fluorobenzene were subjected to the nitration reaction conditions mediated by acetic anhydride (Paul 1958, Procedure A). Bromobenzene and chlorobenzene gave para substituted solids that were readily isolated using vacuum filtration (Cornella et al. 2010). Using Procedures B and C, bromobenzene gave either a mixture of isomers or di-nitration products (McElveen et al. 1999; Fitch 1955). Nitration of fluorobenzene afforded an oil that could not be isolated or characterized.

Electron-Rich Substrates

Nitration of toluene using Procedures A or B resulted in an oil which could not be isolated by filtration. Anisole under Procedures B and C resulted in di-nitration products. Ultimately, the mono-nitro derivative was obtained using Procedure A, but only after purification by silica gel chromatography.

The nitration of N-methyl aniline, using a slight modification of Procedure B by using only 1.25 equivalents of concentrated nitric acid, produced the para substituted isomer (LaPera et al. 2006). Yet treatment of N-methyl aniline with an excess of concentrated sulfuric and nitric acids resulted in a mixture of both the para and meta isomers with 28% and 53% yield, respectively (Jiao et al. 2011). To cleanly isolate the meta product, the para isomer first was precipitated by adding concentrated ammonium hydroxide until a pH of 4–5 was reached (Procedure C). After removal of the para isomer, the pH of the resulting filtrate was raised until the meta isomer precipitated out of solution. We proposed that both isomers prior to exposure to the nitronium ion.

In order to be applied in the teaching laboratory setting, the experimental procedures needed to meet the guidelines set previously. Mono-nitration of N,N-dimethylaniline, N,N-dimethylbenzene, and acetonilide using Procedure C was accomplished within two hours using simple laboratory techniques. Furthermore, the products were isolated without additional purification and in good yield. Mono-nitration of bromo- and chlorobenzene was more sensitive to laboratory technique and required four hours to complete. The products were isolated after addition of sodium hydroxide and did not require additional purification. However, substrates with more electron-rich substrates were too reactive under conditions available in an undergraduate setting.

Conclusion

Several procedures for nitration of halogenated and electron-rich aromatic substrates were evaluated to identify conditions which could be used in a four hour organic laboratory period. Suitable procedures were found for several substrates, including bromobenzene, chlorobenzene, N,N-dimethylaniline, and acetonilide. These substrates can be added to the repertoire of substrates for nitration of mono-substituted benzene systems. Future work will focus on identifying new reaction conditions for nitration of additional substrates.

References


Computational Studies of \( \mathfrak{sl}(2) \) Conformal Blocks

Zachery Wills FCLC ’14

Zachery Jan Wills, FCLC ’14, is a mathematics major in the 3-2 Columbia Combined Plan. This is his first research work, and he enjoyed researching something completely new in mathematics. Zachery most admires Thomas Wolfe, Neal Cassady, and Alyosha Karamozov.

Acknowledgments: This project was supported by a 2012 Student Summer Research Grant from Fordham College at Lincoln Center. I would also like to acknowledge my research mentor, Professor David Swinarski.

**Introduction**

Conformal field theory plays a key role within the study of string theory and mathematical physics. This paper investigates a class of conformal blocks, which are important in the Wess-Zumino-Witten model of conformal field theory. Conformal blocks also have useful applications in algebraic geometry because for every conformal block there is an associated polynomial map on \( M_{0,6} \), the moduli space of configurations of six points on a sphere.

A conformal block is determined by three ingredients: a Lie algebra, a positive integer called the level, and a weight vector. A conformal block is denoted as \( \mathfrak{g}(\ell, x) \), where \( \mathfrak{g} \), \( \ell \), and \( x \) are the Lie algebra, level, and weight vector, respectively. Specifically we have been investigating the behavior of conformal blocks for the Lie algebra \( \mathfrak{sl}(2) \), the set of 2x2 matrices with \( \text{trace}=0 \), with six-coordinate weight vectors while varying the level. The level, \( \ell \), within the conformal block provides the greatest possible integer value for the coordinates of the weight vector. In this way, a conformal block of level 2 can only have weight vector coordinates of 0, 1, or 2. For example, at \( \ell=2 \), one could have a weight vector \( (2, 2, 2, 1, 1, 0) \) or \( (0, 0, 0, 2, 2, 2) \), but not \( (3, 2, 2, 1, 1, 0) \), because \( 3>2=\ell \). In this way, for any fixed \( \ell \), there will be a finite number of weights. This paper does not investigate weights which have the same elements in a different order, the reason for which I stated in section 3. We may assume that the weights in the weight vector are (weakly) increasing, and so in choosing these vectors, of \( (1,1,1,1,1,2) \) and \( (2,2,1,1,1,1) \), only \( (1,1,1,1,1,2) \) will be investigated. For lower levels, these calculations can be carried out using a computer to consider all possible weights. It would be impractical to carry these calculations out by hand. However, as the level increases, the number of weight vectors becomes so large that it is not feasible to perform these calculations, even by computer. For this reason, we are using the computer for calculations up to \( \ell=10 \).

We are concerned with a characteristic of conformal blocks called the first Chern class. The first Chern class of a conformal block is a vector associated to a polynomial map from \( M_{0,6} \) to another space, and it encodes information about the curvature of the image of \( M_{0,6} \) under this polynomial map (for a more detailed treatment, see Griffiths 1994). The first Chern class of an \( \mathfrak{sl}(2) \) conformal block takes the form of a sixteen-dimensional vector, and can be calculated using Fakhruddin’s formula (Swinarski 2011a; Fakhruddin 2012, Prop. 2.5) as explained by Swinarski in Swinarski 2011a, 3-3.5. We have been employing Swinarski’s ConformalBlocks package for Macaulay2 (Swinarski 2011b; Grayson 2012) for the computation of these first Chern class vectors. The ConformalBlocks package allows us to compute large numbers of first Chern class vectors with relative ease given a specified Lie algebra, level, and weight vector.

**Fakhruddin’s Conjecture**

Fakhruddin conjectures (see Fakhruddin 2012, Section 6) that for all \( \mathfrak{sl}(2) \) \( n=6 \) conformal blocks with six weights, every first Chern class vector will fall within a specific cone, which we call the Fakhruddin cone. This cone has 192 extremal rays. The rays which generate this Fakhruddin cone are called Fakhruddin rays (for more details on the generation of this cone and more specific criteria denoting a Fakhruddin ray see (Swinarski 2011a, 4.1). A refinement of Fakhruddin’s Conjecture is to study how these first Chern class vectors land within the Fakhruddin cone. For example, although (conjecturally) they do not fall outside of the cone, some may land in the interior of the cone or on the boundary of the cone. This paper further investigates specifically where in the interior of the cone or on the boundary of the cone—either on the boundary or in the interior of the cone—these first Chern class vectors lie.

**First Chern Class Vectors in the Fakhruddin Cone**

We have calculated the first Chern class vectors for \( \mathfrak{sl}(2) \) conformal blocks for \( \ell=1, 2, \ldots, 9 \) using ConformalBlocks (Swinarski 2011b). We have also constructed the Fakhruddin cone from the Fakhruddin rays. For low levels (\( \ell=1, 2, \ldots, 9 \)) our calculations show that Fakhruddin’s Conjecture is true. We also determined exactly whether each first
Chern class vector lies on the boundary or in the interior of the Fakhruddin cone. The construction of the Fakhruddin cone was done through the program Polymake, and the determination of where the first Chern class vectors fall in the Fakhruddin cone was computed in Macaulay2 (Gawrilow 2012). It is useful to note here that, as stated above, for a given weight vector the distinguishable permutations of its coordinates are not being considered as separate cases for study. This is because the location of the first Chern class vector for a conformal block with a given weight vector in the Fakhruddin cone is preserved when the coordinates of that weight vector are permuted. In other words, if one arrangement of the coordinates of a weight vector leads that conformal block’s first Chern class vector to lie in the interior of the Fakhruddin cone, then all other arrangements of the coordinates of that weight vector will still land the first Chern class vector of that conformal block into the interior of the Fakhruddin cone. This results because Fakhruddin’s cone is preserved under permutations, so all permutations take the boundary of the cone to the boundary of the cone and likewise take the interior of the cone to the interior of the cone. For these reasons, it is unnecessary to run calculations for all permutations of weight vector coordinates; the location in the Fakhruddin cone of a first Chern class vector will be the same regardless of which permutation of the weight vector coordinates is being considered.

All first Chern class vectors of conformal blocks at \( \ell = 1 \) and \( \ell = 2 \) lie on the boundary of the Fakhruddin cone. We have found that at \( \ell = 3 \), one first Chern class vector, with weight \((1,2,2,3,3,3)\), lies in the interior of the cone, while the rest fall on the boundary. At \( \ell = 4 \), there are four first Chern class vectors and at \( \ell = 5 \) there are eight first Chern class vectors in the interior of the cone; all others lie on the boundary. For \( \ell = 4 \) and \( \ell = 5 \), the weights listed in Table 1 correspond to conformal blocks whose first Chern class vectors lie in the interior of the Fakhruddin cone.

All other first Chern class vectors for these levels lie on the boundary of the Fakhruddin cone.

We have also calculated that the first Chern classes for \( \ell = 1, 2, \ldots, 9 \) fall in the interior or on the boundary with the frequencies listed in Table 2 below.

Due to the way in which the Fakhruddin cone is constructed (see Swinarski 2011a, 4.1) it is not surprising that levels 1 and 2 have no interior first Chern class vectors. The reasons that so many first Chern class vectors lie on the boundary of the Fakhruddin cone is an area of further investigation.

<table>
<thead>
<tr>
<th>( \ell )</th>
<th>weight vector</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>( (2,2,2,2,2,2) )</td>
</tr>
<tr>
<td>4</td>
<td>( (2,2,2,2,2,4) )</td>
</tr>
<tr>
<td>4</td>
<td>( (2,2,2,2,3,3) )</td>
</tr>
<tr>
<td>4</td>
<td>( (3,3,3,3,3,3) )</td>
</tr>
<tr>
<td>5</td>
<td>( (1,3,3,3,3,3) )</td>
</tr>
<tr>
<td>5</td>
<td>( (2,3,3,3,3,3) )</td>
</tr>
<tr>
<td>5</td>
<td>( (2,3,3,3,3,4) )</td>
</tr>
<tr>
<td>5</td>
<td>( (3,3,3,3,3,3) )</td>
</tr>
<tr>
<td>5</td>
<td>( (3,3,3,3,3,5) )</td>
</tr>
<tr>
<td>5</td>
<td>( (3,3,3,3,4,4) )</td>
</tr>
<tr>
<td>5</td>
<td>( (3,3,3,3,5,5) )</td>
</tr>
<tr>
<td>5</td>
<td>( (4,4,4,4,4,4) )</td>
</tr>
</tbody>
</table>

Table 1

We do not yet know why the majority of first Chern class vectors lie on the boundary of the Fakhruddin cone. We hope to notice and prove a rule or pattern governing the location of a first Chern class vector based on the weights of the conformal block. Due to the relatively low number of interior first Chern class vectors, we are looking for a rule governing why one such vector lands within the interior. Such a rule may be useful in proving Fakhruddin’s conjecture, and it is the goal of ongoing research.

References


Swinarski, D. 2011b. “\( \text{s}_1 \) conformal block divisors and the nef cone of \( M_{0,n} \).” arxiv:1107.5331.
In the richly illustrated *Design of Cities*, Edmund Bacon makes a forceful argument for shaping cities into more aesthetically complete, lyrical, and ordered compositions that will be a “true expression of the highest aspirations of our civilization,” drawing valuable lessons from the cities of the past to do so (13). But he falters in his application of these lessons to the modern age as his obsession with traffic and circulation systems renders his design proposals disastrously beholden to the thrill of mechanical movement. Bacon believes that the urban planner’s role is to impose rational and “harmonious” order on the chaos of the city (34). The best way to do this, he contends, is to create designs powerful enough to outlive the planner who thought of them and powerful enough to shape the actions of generations of builders to come because any “really great work” is capable of “influencing subsequent development” (108). This power to sway men’s minds emerges for Bacon in the unifying pull of repetition, dynamic tension, and most importantly, the efficient and rational movement of people through space. He focuses on these three strategies as the key for creating composed and comprehensible cities.

He supports unifying the city with the rhythmic repetition of patterns and elements, using as an example the colonnades of Greek or Roman towns, which “reach out across space” to other buildings with colonnades, “creating interrelations and tensions” between them (73). Building on the theme of tension, he proposes energizing public spaces by creating relationships between buildings, landmarks, and the landscape to produce dynamic “lines of force” and “shafts of space” that clash and contend in dramatic interplay (115). This axial power is best represented for Bacon in the balanced forces of Michelangelo’s design for the Capitoline Hill in Rome, which made “space itself the subject of design” by harnessing the driving forces created by masses in opposition (118). Bacon values repetition and tension, but the fundamental tool available to the designer is movement. Because “movement through space creates a continuity of experiences derived from the nature and form of the spaces through which the movement occurs,” it follows that a movement system is a “dominant organizing force” in city design: all of urban space is experienced in motion; therefore, the ordering of that motion is the key to design (34).

Imposing rational order on the city by marshaling its circulation system into an organized and efficient expression of the area’s traffic needs and connecting its most important places, as Pope Sixtus V’s plan for the streets of Rome does, is the vital element without which city designs will fail. For Bacon, a clearly articulated system for moving people through the city is the only way to make a truly continuous and vibrant city design.

With these strategies, Bacon champions the rational organization of the city into a complete, continuous image. He seeks to achieve this goal through the recognition of the way in which city-making is a visual art; the book contains numerous drawings of cities by various artists and a generous supply of Paul Klee illustrations which contain themes he believes apply precisely to the practice of city design. Bacon believes that great urban design takes “artistic genius” (35). According to Bacon, a great city, like a great painting, must create a comprehensive and unified composition, and, like a movie, create a continuous and uninterrupted flow of experience.

Bacon’s approach has solid foundations. Aesthetics is an essential element of city-building: there is real satisfaction in the way great art makes vividly comprehensible and striking compositions. It is entirely possible to produce the same feeling of wholeness and balance from the arrangement of a city. Concentrating on the unifying rhythm formed by repeated elements and the dynamic tension formed by opposing masses across space draws attention to important elements of city structure: repetition and opposition work together to produce cities that feel whole and energetic. Focusing on traffic circulation also produces useful insights. As urban designer Kevin Lynch affirms through extensive interviews and analysis recorded his book *The Image of the City*, the average person’s perception of a city is hugely affected by the way its paths are organized.1 Making a city’s roads link up in an organized and understandable manner makes navigation immensely easier. Additionally, connecting a city’s best public spaces strengthens them all by making traveling between them more direct and pleasant. Bacon’s focus on movement, however, also produces less beneficial results, especially when he applies the lessons old cities teach about pedestrian circulation to car traffic.
Edmund Bacon was a renowned city planner, architect, and author who was famed as the major visionary for planning modern Philadelphia. His work, Design of Cities, pulls in historical city design to modern city planning and is still relevant to today’s city planning. 

Edmund Bacon was a renowned city planner, architect, and author who was famed as the major visionary for planning modern Philadelphia. His work, Design of Cities, pulls in historical city design to modern city planning and is still relevant to today’s city planning.

His prioritization of traffic over all else harms his work’s validity. The continuous movement characteristic of major cities does not make facilitating circulation the fundamental purpose of city design. Bacon fails to distinguish between human and auto movement, applying the lessons old cities teach about pedestrian circulation to car travel as though there is no difference between them, blithely ignoring the monotony, vast distances, and barriers inevitably created by facilitating fast car transport. Although our capacity for movement has increased, this does not necessarily entail that our capacity for comfort in and comprehension of space has increased along with it. And so a city design based on efficient movement loses the human scale that Bacon claims to aim for, smothering the individual in acres of concrete and tons of speeding steel. Connecting important places in the city with roads means something very different when one is connecting with expressways rather than pedestrian lanes. Furthermore, his preoccupation with multi-level circulation is based on the definitively incorrect assumption that people enjoy changes of level. Sociologist and urban theorist William H. Whyte, in his book City: Rediscovering the Center, thoroughly documents his empirical observations of the way people avoid spaces above or below grade.2

Bacon claims that the city must be built on a new scale to respond to the new needs of society, but he fails to notice that these new needs are not human: they are the operational requirements of machines. Thus he dreams of a Philadelphia built with multi-level car parks, highways, and rail lines which are all connected to the elevator shafts of buildings to make a unified whole that expresses the region’s movement system. He also praises Brasilia, the modernist capital of Brazil built with a highway as its central spine, but he forgets that these movement systems are merely an expression of machine expediency, not human need. Bacon frequently claims, with no good reason besides mechanistic determinism, that a city’s spaces must necessarily reflect its position along road and rail routes. In basing his planning ideals on this abstract plan view, he contradicts his own advice to base design on the experience of the city on foot. People see the world from five feet off the ground, not five hundred; only for birds and map-makers are the junctions in a region’s movement system a relevant consideration in the experience of space.

Edmund Bacon draws powerful advice from his examination of cities’ forms through history, making a convincing manifesto for the appraisal of the city as a sculptural feat, a piece of visual art that demands a whole composition. He is right in demanding more from cities than mere utilitarian people-storage. There is drama and staggering beauty in great city spaces, and Bacon urges that we be tireless in attempting to reclaim that legacy. Today the majority of the world’s population lives in cities, and Bacon asks if they really need to be as drab and dull as we have made them. His suggestions for fixing this fall short of the goals he set, but his lofty aspirations remain inspiring. His blindness with respect to motor vehicles, however, is valuable as a lesson for precisely what to avoid in city-building. His praise of Brasilia and his highway-filled proposal for Philadelphia serve to illustrate America’s long love affair with cars. He writes in the beginning of his book that “the form of [man’s] city always has been and always will be a pitiless indicator of the state of his civilization,” and Bacon’s brutally car-centric vision makes clear that the same is true of his city plans (13).

References


*Reviewed by Caitlin Ramiro, FCRH ’14*

Dr. Brenna Moore’s *Sacred Dread* closely examines the intellectual and theological underpinnings of Raïssa Maritain, challenging the view that Maritain was the “apolitical, silent partner of Jacques Maritain” (16). Because Maritain lived a “contemplative cloistered” life during World War II, there is a temptation to dismiss her as a “passive” and uninteresting victim of the “Shoah,” a Hebrew term that refers to the Holocaust (16–17). However, Moore argues that because Maritain’s works were “more mystical, more poetic, and certainly darker” than those of her famous husband, Maritain was uniquely influential as a political and spiritual figure (17). Through Maritain’s graphic poetry and intensive prayer life, Moore contends that Maritain exteriorized and preserved redemptive suffering, which enabled events such as the Shoah to remain present in Maritain’s life. *Sacred Dread* paints Maritain as the ideal feminine Jewish sufferer—an archetype that first drew her towards Catholicism.

Because of her husband’s fame as a public political figure, many previous works regarding the French Catholic revival do not highlight Raïssa Maritain’s influence. *Sacred Dread* serves to do just the opposite, offering this Maritain the well deserved attention of which she was once deprived. Through extensive research, Moore illustrates Maritain as a courageous and fascinating individual, though one often concealed from the public. Although Maritain was a recluse during World War II, Moore shows that the famous French intellectual engaged in active suffering through her private life and writings. Moore’s research, therefore, challenges the way one approaches the “terrain of ambiguity that exists between social forces of history and the inner life of the subject” by using sources of fantasy and devotion as legitimate analytic tools (12). These imaginative tools enable one to capture a more clear and panoramic picture of the Shoah’s reality.

According to Moore, feminine and Jewish suffering remains central to understanding the French Catholic revival, specifically Maritain’s experience as an exiled Jewish Catholic convert. Maritain draws upon these feminized and Jewish symbols of suffering in an attempt to articulate tragedies that occurred within her lifetime, especially the genocide of the Jewish people. Through careful examination of primary and secondary texts and creative analysis, Moore concludes that Catholic symbolism of women and Jews enabled Maritain to express her suffering in a way that was redemptive and holy.

In order to better understand Maritain’s attraction to Catholic suffering, Moore illustrates the context of Maritain’s conversion. Like Maritain, a number of French intellectuals sought out “Catholic theologies and practices centered on suffering… because they saw that there was something missing from the world of atheistic positivism” (21-22). In contrast to the atheistic positivism prevalent in the twentieth century, Catholicism confronted suffering, offering
Moore shows that this active engagement with suffering attracted Maritain to the Church. However, *Sacred Dread’s* view on Maritain is consistently positive, giving praise even to the way the French intellectual suffers. In doing so, Moore does not mention that Catholicism’s allure for Maritain could have been misconstrued as a more mundane attraction to sadism. Nonetheless, Moore’s approach to Maritain’s suffering is complex and interesting.

In an effort to adequately explain Maritain’s fixation on a suffering-centered Catholicism, *Sacred Dread’s* introduction elaborates on the doctrine of vicarious suffering. To illustrate, Moore refers to 1 Peter 2:24 and Romans 3:25 to show “Jesus’s death as vicarious atonement for the sin of the entire race” (5). The concept behind Christ’s ransom remains crucial to understanding the conversion of many twentieth-century French Catholics; it both intrigued and attracted many converts. Furthermore, Moore highlights Paul’s claim that “death is not complete” and that followers of Christ must also “share in [Jesus’s] sufferings” (5). Through suffering and death, then, the Christian can also participate in the expiation of sins and participation of salvation for all (5). Moore challenges traditional approaches to the doctrine of vicarious suffering, specifically Richard Burton’s, claiming it “implicitly exiles these women” into categories of the “pathetic” and “bizarre” (7). Moore asserts that one cannot adequately capture the meaning of souffrance (suffering) and douleur (pain) strictly through the doctrine of vicarious suffering. Consequently, *Sacred Dread* takes a feminist approach to suffering, using Maritain as the empowered Jewish female abject; Maritain as both an abject and a heroine is paradoxical but powerfully (and unusually) compelling.

*Sacred Dread* moves chronologically, assigning specific themes to certain periods of Maritain’s life. In the first chapter, “‘That ‘Strange Thing, So Unknown to Us—Catholicism,’” Moore investigates the reasoning behind Maritain’s Catholic conversion by exploring Maritain’s personal relationships, events, and writings. After all, the idea of a Jewish-raised atheist converting to Catholicism seems extremely unlikely in a twenty-first century setting. Moore’s careful reading of Maritain’s life identifies factors that contributed to Maritain’s conversion. Moreover, Moore reveals how the universality of Catholicism could accommodate Maritain’s Jewish identity. In other words, Maritain converted to Catholicism because it resonated with her social marginalization.

However, while Moore argues that the information gathered from Maritain’s memoirs is “reliable historical evidence,” she admits that Maritain’s memoir *Les grandes Amitiés* was more a “response to immediate crises of 1940-44” than it was an objective account of what occurred (26–27). Because of potential political intentions motivating Maritain’s memoirs, one must question Moore’s claim and ask whether or not these writings actually can be used as reliable historical evidence. This chapter flows nicely into the following, “She Who Weeps,” where Moore argues that Maritain harmonized the gap between suffering and masculinity by incorporating both mysticism and intellectual intervention into her spiritual life (62). Here, Moore further cements the image of Maritain as a captivating Catholic whose suffering enabled experiences of healing and transformation, not passive victimization.

Chapter four, “Poetry ‘in the Storm of Life,’” interestingly explores Maritain’s notion of suffering and how she translated that pain into socially-moving poetry. Moore departs from the predisposed idea that Maritain attempted to evade the reality of the *Shoah* with her poems. Using evidence of Maritain’s suffering-centered Christianity, she argues that the French intellectual’s poetry was not a “retreat from, but a witness and participant” in the cataclysm of the twentieth century (125). Her take on Maritain’s discrete but nonetheless active suffering enables one to look at grieving with a new lens. Although Maritain was nowhere near the sites of Jewish genocide, her poetic witness to the trauma of the *Shoah* is still significant. Nevertheless, one could understand why Maritain’s was seen as passively suffering; poetry is not always overt. Yet Moore contends that Maritain’s response to the *Shoah* was politically bold, though unconventional. The final chapter, “Holy Suffering and Memory,” nicely concludes the work by showing how the doctrine of vicarious suffering alone could not comfort Maritain. Through the faculty of memory, Moore argues, Maritain confounded and actively experienced the suffering of the *Shoah*. Thus, Moore shows that Maritain’s experience of suffering cannot be contained within “existing frameworks” (188). Moore claims that the lack of an interpretive framework consequently allows one to rethink preconceived notions of truth.

By investigating and analyzing the life of Maritain, Moore transforms the idea of feminine Jewish suffering by showing strength in Maritain’s grief. Moore’s illustration of Maritain as the archetypal feminine Jewish abject incites a need for political
and ethical insights; the French intellectual’s suffering evokes emotions of compassion for the victimized and the desire to prevent the another Holocaust. Moreover, Sacred Dread is radically Christian and feminist by taking one of Catholicism’s most disregarded symbols—the suffering Jewish woman—and transforming it into a source of revelation, healing, and hope. Moore succeeds in portraying the French intellectual mystic as a twentieth century theological and political heroine as well as causing the reader to reconsider the way one approaches the reality of suffering. Furthermore, although Sacred Dread looks at Maritain from a theological lens, the text pertains to all fields of study. The book encourages one to utilize imaginative tools—fantasy, devotion, memory, etc.—as legitimate resources in order to offer a more objective view. The most compelling aspect of the book is how Moore shows the strength uncovered in the rejected and suffering, using Maritain as her example. However, in doing so, perhaps Moore does not highlight the possible negative consequences attached to Maritain’s suffering; too much active engagement with the reality of suffering may actually steer one away from the needs of the present. Nevertheless, Sacred Dread, speaks to a universal audience, contributing to larger conversations concerning social justice, the marginalized, and feminism.

Select Undergraduate Research Accomplishments

Presentations

Vincent Corcoran (FCRH ’13) is a co-author on Factors protecting against non-suicidal self-injury after trauma which was presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD (mentor: Margaret Andover, Psychology).

Caitlin Nosal (FCRH ’13) is a co-author on Behavioral inhibition and behavioral activation systems in non-suicidal self-injury which was presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD (mentor: Margaret Andover, Psychology).

Margaux Bruzzese (FCRH ’12) is a co-author on Emotion dysregulation and peer victimization in non-suicidal self-injury among adolescents: A meta-analysis of risk factors which was presented at he annual meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD (mentor: Margaret Andover, Psychology).

Patrick Wester (FCRH ’12) is a co-author on Risk factors for non-suicidal self-injury in an LGB sample which was presented at he annual meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD (mentor: Margaret Andover, Psychology).

Mark Ward (FCRH ’13) is a co-author on “Calculating Minimal Energy Shapes of Fusion Pores” which will be presented at the 57th Annual Meeting of the Biophysical Society. (mentor: Rolf Ryham, Mathematics).

Jeffrey Lockhart (FCRH ’13) and Tony Pulickal (FCRH 2013) are co-authors “Applications of Mobile Activity Recognition,” which was presented at the workshop Proceedings of the ACM UbiComp International Workshop on Situation, Activity, and Goal Awareness, Pittsburgh, PA. (September 2012) (mentor: Gary Weiss, Computer and Information Science).

Jeffrey Lockhart (FCRH ’13) is a co-author on the article “Depression markers are more prevalent in obese children with non-alcoholic fatty liver disease than in those without” which was accepted for presentation with presidential Papers from the AAAI-12 Workshop on Activity Context Representation: Techniques and Languages, AAAI Technical Report WS-12-05, Toronto, Canada, 98-104. July 2012 (mentor: Gary Weiss, Computer and Information Science).


Nicole Caso (FCRH ’13) is a co-author on the article “Allocation food allergy responsibilities for children and adolescents” which will be presented at the Society of Behavioral Medicine Annual Meeting, San Francisco, CA. (mentor: Rachel Annunziato, Psychology).

Christine D’Urso (FCRH ’11) and Kelsey Van Nostrand (FCRH 2011) are co-authors on the article ”Psychosocial and treatment considerations for children with non-alcoholic fatty liver disease” which will be presented at the American Psychological Association Annual Convention, Orlando, FL. (mentor: Rachel Annunziato, Psychology).

Nicole Caso (FCRH ’13) is a co-author on the article “Do clinicians recognize anxiety in children with food allergy?” which will be presented at the American Academy for Allergy, Asthma, and Immunology Annual Meeting, San Antonio, TX. (mentor: Rachel Annunziato, Psychology).

Christine D’Urso (FCRH ’11) is a co-author on the article “Liver Transplantation for Children with Biliary Atresia at the PELD era: Analysis of the UNOS database” which will be presented at the American Transplant Congress, Boston, MA. (mentor: Rachel Annunziato, Psychology).

Nicole Caso (FCRH ’13) is a co-author on the article “The Impact of Personalization on Smartphone-Based Activity Recognition,” which was presented at the workshop

**Kelsey Van Nostrand (FCRH '11)** is a co-author on the article “Quality of life in children with NAFLD: a longitudinal study” which was accepted for presentation with presidential distinction at the American Association for the Study of Liver Diseases Annual Meeting, San Francisco, CA. (mentor: Rachel Annunziato, Psychology).

**Christine D’Urso (FCRH ’11)** is a co-author on the article “Leaving the nest: How child life specialists can aid chronically-ill adolescents in the transition to self-managed, adult oriented care” which will be presented at the National Conference in Pediatric Psychology, San Antonio, TX. (mentor: Rachel Annunziato, Psychology).

**Jordan Seidel (FCRH ’12)** is a co-author on the article “Orthotopic Liver Transplantation for Children with Primary Sclerosing Cholangitis: analysis of the UNOS database” which will be presented at the American Transplant Congress, Philadelphia, PA. (mentor: Rachel Annunziato, Psychology).

**Kristin Piering (FCRH ’10)** is a co-author on the article “Developmental and disease related influences on self-management acquisition for liver transplant recipients” which will be presented at the American Transplant Congress, Philadelphia, PA. (mentor: Rachel Annunziato, Psychology).

**Margaret Baisley (FCRH ’12)** is a co-author on the article “Strategies to improve adherence prior to transfer from pediatrics to adult-oriented services” which will be presented at the National Conference in Pediatric Psychology, San Antonio, TX. (mentor: Rachel Annunziato, Psychology).

**Christine D’Urso (FCRH ’11)** is a co-author on the article “A preliminary examination of self-management in children with a food allergy” which will be presented at the Society of Behavioral Medicine, Annual Meeting, Washington, DC. (mentor: Rachel Annunziato, Psychology).

**Christine D’Urso (FCRH ’11) and Linda Batemarco (FCRH 2010)** are co-authors on the article “Parental distress in food allergy: needs assessment for mental health (MH) referrals” which will be presented at the American Academy for Allergy, Asthma, and Immunology Annual Meeting, San Francisco, CA. (mentor: Rachel Annunziato, Psychology).

**Christine D’Urso (FCRH ’11)** is a co-author on the article “Autoimmune Hepatitis in Children: Does Cirrhosis at Presentation Affect Outcome?” which will be presented at the American Association for the Study of Liver Diseases Annual Meeting, Boston, MA. (mentor: Rachel Annunziato, Psychology).

**Kelsey Van Nostrand (FCRH ’11)** is a co-author on the article “Liver Transplantation in Children Weighing Less Than 5 kg: Analysis of the UNOS database” which will be presented at the American Transplant Congress, San Diego, CA. (mentor: Rachel Annunziato, Psychology).

**Brittany Hogan (FCRH ’10)** is a co-author on the article “The Changing Role of Liver Transplantation in Children with Tyrosinemia” which will be presented at the American Association for the Study of Liver Diseases Annual Meeting, Boston, MA. (mentor: Rachel Annunziato, Psychology).

**Brittany Hogan (FCRH ’10)** is a co-author on the article “Liver Transplantation for Patients with Maple Syrup Urine Disease: A New Indication for an Old Disease?” which will be presented at the American Association for the Study of Liver Diseases Annual Meeting, Boston, MA. (mentor: Rachel Annunziato, Psychology).

**Christine Petit (FCRH ’13), Danielle Ingram (FCRH 2011)**, and **Alyssa Cerrachio (FCRH 2012)** are co-authors on the article "Lost on campus? The Mental Health and Quality of Life of Commuter Students Relative to Peers" which will be presented at the American Psychological Association Annual Convention, Orlando, FL. (mentor: Rachel Annunziato, Psychology).

**Jose Tapia (FCRH ’12)** is a co-author on the article “Liver Transplantation for Children with Biliary Atresia in the PELD Era: Role of Ethnicity and Insurance” which will be presented at the American Transplant Congress, Boston, MA. (mentor: Rachel Annunziato, Psychology).

**Stephanie Deibert (FCRH ’10)** is a co-author on the article "Distress and Memory Change during the Transition to College" which will be presented at the American Psychological Association Annual Convention, Washington, DC. (mentor: Rachel Annunziato, Psychology).

**Christine D’Urso (FCRH ’11)** is a co-author on the article “Pilot Findings from a Cross-Age Mentoring Program to Aid Transition in Health Care Management for Pediatric Liver Patients” which will be presented at the National Conference in Pediatric Psychology, San Antonio, TX. (mentor: Rachel Annunziato, Psychology).

**Jillian Minahan (FCRH ’13)** and **Faith Forgione (FCRH 2014)** are co-authors on the article “Defining perceived support: Relationships to attachment, optimism, and social desirability” which will be presented at the annual meeting of the Association for Psychological Science, Chicago, IL. (mentor: Mary Procidano, Psychology).

**Jillian Minahan (FCRH ’13) and Faith Forgione (FCRH 2014)** are co-authors on the article “Personality and perceived support predict adjustment independently” which will be presented at the annual meeting of the Association for Psychological Science, Chicago, IL. (mentor: Mary Procidano, Psychology).

**Christina Rooney (FCRH ’13) and Harjot Nayar (FCRH 2013)** are co-authors on the article “Examining emerging adulthood through the life stories of young adult cancer survivors.” Which will be presented at the SRCD Themed Meeting: Transitions from Adolescence to Adulthood, Tampa, Florida. (mentor: Mary Procidano, Psychology).

**Christina Rooney (FCRH ’13) and Harjot Nayar (FCRH 2013)** are co-authors on the article “Predicting adjustment in young-adult cancer survivors: The roles of interpersonal and spiritual support and nonsupport, and appraisals of self-defining life events” which will be presented at the annual meeting of the Stress and Anxiety Research Society, Palma de Mallorca, Spain. (mentor: Mary Procidano, Psychology).

**Christina Rooney (FCRH ’13) and Harjot Nayar (FCRH 2013)** are co-authors on the article “Meaning structure of self-defining illness episodes in young-adult cancer survivors” which will be presented at the annual meeting of the Stress and Anxiety Research Society, Palma de Mallorca, Spain. (mentor: Mary Procidano, Psychology).
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