TRANSACTIONS
of the
Society of Fellows
of Dyson College

Volume 22
2022
DYSON COLLEGE OF ARTS AND SCIENCES

The Dyson College of Arts and Sciences offers a robust and innovative liberal arts education distinguished by its emphasis on faculty mentoring, experiential learning, and small classes. Through instruction in over fifty majors and minors across the disciplines of the arts and sciences, Dyson College prepares its students for graduate and professional schools, and the twenty-first-century workforce. Students develop their potential for achievement through both academic and co-curricular programs and activities, and outstanding among these is the Society of Fellows of Dyson College.

SOCIETY OF FELLOWS OF DYSON COLLEGE

HISTORY

The Society of Fellows began in the fall of 1980 with a weekend seminar devoted to questions in applied ethics. The first class of members inducted at the formal inauguration of the society in December 1981 was named after distinguished philosopher and Pace faculty member William Barrett. Since then, a new class is inducted annually and named after a fellow who has made a significant contribution to the ideals of the Society of Fellows. To date, more than 700 students, faculty, and alumni hold the distinction of being a fellow, and the Society of Fellows has become the premier honors organization in Dyson College.

FOUNDING CHARTER


Being bound by ties of friendship and dedication to the ideals of liberal education, do hereby constitute themselves and their successors, forever, as fellows of the Dyson College with the duty of promoting undergraduate scholarship among the members of said college and admitting into its society and fellowship only those students, faculty, alumni, staff and friends of the Dyson College who advance in a noteworthy and exemplary fashion the purposes of the society as expressed in its constitution.

MEMBERSHIP

Membership is open to students, faculty, and alumni of Dyson College who meet eligibility requirements and contribute to the goals of the Society of Fellows.
Enrolled students of Pace University who demonstrate excellence in scholarship or in artistic creativity will be invited to become fellows if they meet the following criteria:

1. Minimum 3.3 QPA (cumulative quality point average); exceptions will be considered on a case-by-case basis.

2. Participation in at least two Society of Fellows-sponsored events; one of these events must be presentation of research or artistic projects at the annual meeting.

3. Submission of an outstanding signature work of scholarship or creative expression; to fulfill this requirement, the candidate may use a full-length paper or artistic project submitted for the annual meeting.

4. Letter of recommendation from a faculty member attesting in detail to the quality of the academic work and achievements that are being submitted for the candidate’s advancement to fellow.

5. Attendance at the initiation ceremony held annually during the spring semester.

All completed applications meeting eligibility requirements will be reviewed and voted on by the Faculty Executive Board of the Society of Fellows of Dyson College.

Faculty qualify to become fellows when they serve two or more times as mentors of research papers or artistic projects presented at the annual meeting. Faculty also are recognized for sponsoring student works accepted for publication in Transactions, and for serving as weekend seminar leaders. Faculty and alumni of Dyson College who share and further the aims of the society in other outstanding ways also may become fellows.

ACTIVITIES

The annual signature activities of the fellows are the weekend seminar, the annual meeting, and the initiation ceremony. The weekend seminar provides opportunities for students, faculty, and alumni to discuss issues of contemporary significance under the leadership of teacher-scholars. The annual meeting is a one-day student conference where undergraduate students present their research or artistic projects completed under the supervision of faculty mentors. The event also is open to graduate students, several of whom annually apply to participate. At the initiation ceremony, qualified applicants are recognized as fulfilling the eligibility criteria and are inducted as fellows. Transactions of the Society of Fellows of Dyson College is the official journal of the society. Peer-reviewed by Dyson faculty, the journal publishes the work of Pace University undergraduate students completed under the sponsorship of faculty, who often are fellows.

GOVERNANCE

A faculty executive board that reports to the Dyson College dean governs the Society of Fellows of Dyson College. The board facilitates the achievement of the society’s goals by planning activities, organizing seminars, and overseeing special recognitions and awards.

INFORMATION FOR TRANSACTIONS CONTRIBUTORS

Papers published in Transactions are the work of Pace University undergraduate students under the sponsorship of Dyson College faculty members or faculty fellows of the society. Student submissions originate as faculty-sponsored papers or artistic projects that have been presented at an annual meeting of the society. Recent alumni of Dyson College also may submit a paper or a revision of a paper that was presented at an annual meeting. The call for proposals for submission to Transactions is announced in the spring at the annual meeting. Papers or correspondence may be submitted at that time to the editor by e-mail to softransactions@pace.edu. Each submission will be refereed and considered for inclusion by the editor and associate editors. Papers must be submitted as a Microsoft Word document using 12-point font and double-spaced, with a maximum length of twenty pages. The citation style of a submission’s discipline must be followed with respect to endnotes and references. For general guidance on the preparation of submissions, consult the Society of Fellows pages on the Pace website.

Judi Pajo, Ph.D.
Associate Professor of Anthropology
Chair of Society of Fellows
Dyson College of Arts and Sciences
Pace University
jpajo@pace.edu
FROM THE EDITOR

After two-and-a-half years of pandemic disruption, we are pleased and proud to publish this long-awaited Volume 22 of Transactions. It is a triple issue that features original research and creative works submitted by undergraduate students in 2019, 2020, and 2021.

We have had leadership transitions: our college has a new dean, our society has a new chair, our journal has a new editor. Yet we also have continuation. As both the new chair and the new editor, I am proud to continue the tradition of curating and publishing some of the very best of student work across the arts and sciences; we continue to encourage our students both to excel in their chosen fields and to converse across disciplinary boundaries.

The contributions in this volume include poetry, photography, art, philosophy, religious studies, history, film studies, science, economics, peace and justice studies; the QR code technology has allowed us to include even performance video. We hope that this immense breadth may spark many conversations: speculations about humans in space from a science perspective and also from an economics perspective, conversations about race relations in historical and also in contemporary societies. And many more.

Given the volume of submissions that had accumulated, I had to be very selective. It was also challenging to trace back the authors: most students had graduated, some faculty had retired. Starting a working career after graduation often moves you to a new place; the pandemic may have amplified that scattering. While some of the authors featured here remain in New York, others now work and live in California or in Hawaii. Finding someone after graduation is not easy, even when that person turns out to live literally across the street from Pace.

In the process I also took in a few happy personal stories. Some of our former students now work in their same study fields: a stage management major had become a stage manager. Others had changed fields: a humanities major was preparing to enter medical school. I feel that the Society of Fellows may have something to do with how those paths had evolved.

Last but not least, I want to thank Dean Tresmaine Grimes and Associate Dean Charlotte Becket for their support of the Society of Fellows, as well as Dr. Maria Iacullo-Bird, Assistant Provost for Undergraduate Research, for her mentorship this past year. I also thank Norma Quiridumbay, former staff assistant, and Kevin Schaefer, new staff assistant.

We all hope you enjoy this new issue of Transactions!

Dr. Judi Pajo

May 2022
Fine & Performing Arts
All I took with me
were
memories of yellow walls,
all the ways I learned to cry,
the ways I learned not to cry,
and the nail that used to hold up
my parents’ favorite painting.
My mother threw away the nail
with all the other lint,
and notes,
and forgotten things
in pant leg pockets.
This is not to say I forgot
but only I lost you for a moment,
only I never told anyone
how often I reached into my pocket
to feel you there
or all the times after
I forgot you were gone.
This place was once mine
and now it is not.
The following series of images document the Northwest corridor of Baltimore, Maryland during the months of June and July in 2019. This collection of street photography is the product of several long walks in the neighborhoods of Lower Park Heights, Edmonson Village, and Sandtown, as well as specific spaces, conversations, and events that took place in Baltimore. The various landscapes and portraits offer an intimate documentation of black life and urban morphology in an area whose reputation as an American hyper-ghetto has historically ostracized this community’s culture and beauty from mainstream American thought. The photographs depict views of parks, streets, open spaces, as well as friends, family, and people that serve as a documentation of life and the now within these communities. Furthermore, these images of community occupation of, and within, these spaces act as symbols of a history of community effort against discriminatory urban planning, and the future growth and trajectory of Black Baltimore via community.
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Video Art Project: Self-Portrait

By JIAJIA WU
Sponsored by PROF. JILLIAN MCDONALD
Art, New York

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HUMANITIES
Descartes, Spinoza, Leibniz: Visions of God and the Universe

By LAUREN D. COTNER
Sponsored by DR. EDDIS MILLER
Philosophy and Religious Studies, New York

Analyzing the images of God’s existence from Descartes to Spinoza and to Leibniz, there is a progression of increasingly mature and robust metaphysical thought. Each philosopher envisions “God” according to unique notions of infinity and its corporeal entanglements. To Descartes, the most abstract model of the divine is that of corporeal opposition, as it seemed that contrasting the corporeal with the divine is the only way to think beyond our limitations, making God transcendent, or above the universe. To Spinoza, the highest metaphysical being is the universe because God’s existence is inseparable from reality, making him immanent to reality. (For context, the use of he/him/his pronouns for God throughout the paper is solely for continuity with the selected texts, which come from the early modern philosophical period. This choice reflects no sense of superiority or characterization of God as masculine and is rather an avoidance of grammatical confusion). Each author describes a different relationship between God’s substance and created substance, calling God transcendent or immanent to the universe based on his proximity to and involvement with substances. While Descartes distances infinite substance from created substance, Spinoza sees God and the universe as the same substance. Spinoza’s image of God and the universe demonstrates an expansion of metaphysical thought from our starting point of Descartes. However, part of discovering the infinite is exchanging notions of “here or there” with the freedoms of “here and there.” All rational and empirical binaries disintegrate at the edge of reality, as the infinite has no limit and no location, nor does it hold a definitive quantity of understanding. Infinity involves a multiplicity of natures beyond the most ultimate of qualities imaginable. To think of the infinite, we must think of that force possessing all power, knowledge, and presence whose existence has no defined construct.

This is the reason why Leibniz’s image of God as “within and without” the universe is the superior theology, as it allows God to exist transcendentally and immanently at the same time. Infinite existence necessitates both essences, because God’s strict transcendence or immanence defines him as limited to one nature. Leibniz’s union of the two reflects the full implications of infinity without limitation, and we will assess how profoundly each philosopher imagines the infinite according to three criteria—omnipotence, omniscience, and omnipresence, which all refer to the farthest extent of being and most ultimate of all natures. These three components must always be present at the same time to
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The ancient Daoist text Zhuangzi aims to unveil the manner in which the binaries and logics present in language serve to perpetuate a dualistic approach to perceiving the world, one which notably alienates us from the essence of nature, or The Way. In this paper, I will call on several philosophic theories—those of Deleuze, Heidegger, Frege, and Derrida—to better understand how the paradoxical, and often enigmatic text of Zhuangzi demonstrates our ability to be in touch with the essence of the world. In doing so these texts reveal a proposed ethics for existence, through self-contradictions and the deconstruction of linguistic binaries.

Perhaps the central question in the philosophy of language is one which concerns the relationship between words or sentences and the reality to which they refer. In his paper On Sense and Reference, Gottlob Frege attempts to address these concerns with his theory of mediated reference. He begins his exploration of language and reference with the statement “Equality gives rise to challenging questions which are not altogether easy to answer. Is it a relation? Relation between objects, or between names or signs of objects?” and begins to tackle these questions by establishing that there is a fundamental difference between the sense of a word and its reference (Frege 1948: 36-37). Whereas the reference of a sign, word, or statement is the object which exists undeniably in reality, the sense is “wherein the mode of presentation is contained.” (Frege 1948: 37). The sense of words and statements is communicated, as well as understood, through both the common connotations which give words in a given language subjective meaning, as well as an individual’s personal beliefs and perceptions regarding the objects to which one refers (Frege 1948: 38).

The sense, for Frege, is not just a concept, but is the framework by which the very nature of the referent is determined through modes of cognition (Frege 1948: 39). In other words, the subjects’ very capability of deciphering the world and its metaphysical structure is credited entirely to the individual beliefs and experiences which they hold and inadvertently relate to language. This presents a critical problem for
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what we’re not supposed to do; commit to a system of thought which rationalizes (inscribes) existence. In building an entire metaphysical, ethical, and linguistical framework just to tear it down with such a simple sentence, Zhuangzi proves to us how easily collapsible institutions are, and perhaps suggests a liberation in fracturing their foundations.

ENDNOTES

1 It should be noted that later in the course of this essay we will turn from Frege’s reference toward the potentiality of Deleuzean difference.

2 Deleuze describes difference as slick and “slippery” and so “differences... always amount to the same as they shift and slide about” (Deleuze and Guattari, 1972: 12), what remains are not fixed referential points of meaning, but rather “intensities” and “flows” which are temporally coded as eternal. The difference of which we are exposed comes to be made material in and through the organizational utterances of subjects who proclaim that hierarchies of differential stratifications are ‘destined’ and as such, difference itself becomes foreclosed.

3 By giving credit to some notion of fairness Zhuangzi points to the penumbra of his linguistic theory, namely, that there is no escape. Even in death we are trapped in the symbolic.

REFERENCES


Confronted by the Golden Age: Understanding Racism and Prejudice in America through South Pacific—The Musical

By RICHARD SOMMERFIELD
Sponsored by DR. MARIA IACULLO-BIRD
History, New York

The overture begins with a sudden burst of brass, firing its artillery of cannon-like blasts through a swirling continuation of strings evocative of a great adventure ready to unfold. It beckons to the audience, “Follow me, I want to show you something,” lulling a sense of curiosity until suddenly the section repeats, louder and louder until there is a realization that something much larger than oneself is at play. Finally, a march, like that of hundreds of soldiers marching into the great unknown, consumes the overture with pangs of longing, coupled with duty, with love, as the sounds of a new dawn breaking over the night sky conclude the piece. In 1949, Richard Rogers and Oscar Hammerstein debuted their new musical, South Pacific, to a country still dizzy from World War II. It was the Golden Age of American musical theatre and high time, thought Rogers and Hammerstein, to use their musical to ring in a new era of tolerance in a racist world.

The 1940s in America are commonly thought of as covered by the blanket of World War II, and as a result are often overlooked. This is especially true when considering the state of Civil Rights in America, as there is a misconception that the Civil Rights movement didn’t begin until the 1950s.1 Not only did the era of the Civil Rights movement begin during the war itself, the postwar 1940s saw an increase in social consciousness regarding racism too.2 In 1948, this was seen on a federal level when President Truman used Executive Order 9981 to desegregate the Armed Forces, and when the U.S. military was the country’s largest employer of minorities.3 Aware of the racial struggles in the United States, musical theatre writers Richard Rogers and Oscar Hammerstein would do their part in increasing social consciousness of racism through their musicals. A pervasive need to challenge the status quo is always at the forefront of artistic endeavors, and this need was a point of inception for South Pacific.

South Pacific is a golden age, Pulitzer Prize-winning musical based on a Pulitzer Prize winning novel called Tales of the South Pacific.4 The original book, written by James A. Michener, is a collection of fictional short stories about life on an island in what is now Vanuatu, during its World War II occupation. The interwoven stories cover a variety of happenings
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Heterotopias and Queer Time in 
Ali: Fear Eats the Soul and Carol 

By ELENA GUZMAN 
Sponsored by DR. RUTH JOHNSTON 
Film and Screen Studies, New York

Michel Foucault describes heterotopias in his lecture “Des Espaces Autres” as a concept used to classify certain spaces and temporalities that are a “simultaneously mythic and real contestation of the space in which we live” (Foucault 4). Heterotopias, or counter spaces, are Other: they exist within our world but are out of the ordinary. They are a disruption of space and time; for example, “the cemetery where the dead absolutely rupture the time of the living” (Smith 3). Although they reflect our normal world, at the same time they are critiques. Both Ali: Fear Eats the Soul (Dir. Rainer Werner Fassbinder, 1974) and Carol (Dir. Todd Haynes, 2016) are melodramas which depict unconventional, queer desire between two people. Ali: Fear Eats the Soul portrays an interracial love story between an older white German woman and a younger Black Moroccan guest worker, while Carol tells the story of a romance between a young and an older woman. Heterotopias exist within both films, particularly relating to their narrative and their classifications as melodramas. Their genre aids in the building of heterotopias due to the fact that melodramas are “where the blocked internal emotions are rendered visible through camerawork” (2). Both films also play out in queer time, which overlaps with Foucault’s concept of time and heterochronies. Fassbinder and Haynes both take inspiration from Douglas Sirk’s melodramas of the 1950s. While both films may not seem instantly comparable, it is their similar use of space and narrative that respectively builds each of the film’s heterotopias. It is therefore important to examine the intertextuality that connects Ali: Fear Eats the Soul and Carol. The heterotopias that exist within these films disrupt the more traditional spatial and temporal dimensions of the melodrama.

Both Ali: Fear Eats the Soul and Carol embody Foucault’s idea of heterotopias. The basis of this concept comes from the cultural shift Foucault noticed during the nineteenth century that began to focus more on time, which led to “a more recent attention to space” (Wood). This focus on time was due to the mass industrialization taking place, which called for a more unified, synchronized understanding of time. It is important to note that Foucault’s description of what defines a space or time as heterotopic is vague and often counterintuitive. He provides six examples of different principles of heterotopias, some of which present themselves broadly in both films. Foucault’s description of how heterotopias “arrange multiple times” can be seen in libraries and museums, gathering past, present, and future, together (Wood). They
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Investigating the Effects of Radiation on our Neurobiology as we Explore Deep Space

By GERARDO GOMEZ
Sponsored by DR. R. EMILIO FERNANDEZ
Mathematics, Pleasantville

ABSTRACT
This current study is a comprehensive review of previous research papers regarding the effects of radiation specifically within the brain. The purpose of this study is to gather all of the significant effects radiation induces on the brain all in an effort to assess whether it is safe for humans to explore deep space as of right now. After reading various papers that explored the topic of radiation, it was found that radiation increased neuroinflammation, increased levels of Postsynaptic Density protein (PSD-95), reduced levels of synaptophysin, decreased excitability in CA1 pyramidal neurons, reduced the number of different spines on dendrites, affected dendritic complexity, length, branch points, and morphology, as well as white matter necrosis in prolonged radiation doses. In addition, translating those neurobiological effects into cognitive effects, it was found that rats exposed to radiation had memory deficits, increased anxiety, inhibited fear extinction, and impaired spatial recognition. It was concluded that humans are not ready to explore deep space as a result of how negatively the radiation in space affects us.

INTRODUCTION
Exploration has been one of humanity’s greatest fascinations, from exploring distant lands in search of food in our prehistoric age, crossing great distances across the seas to reach faraway lands, scouring through forests, to even starting to explore our deep oceans. There has been one expedition that we have yet to explore thoroughly and that would be space. We have only been able to scratch the surface of our exploration of the cosmos through robots and only a select few humans. The furthest humans have gotten is our moon, which if you think about it is a pretty amazing feat. A species overcoming the restraints of our own planet to explore our naturally orbiting satellite we look up to every night! Although we haven’t done much exploring on our moon, we kind of just did what we needed to do and left. Technology is rapidly evolving, and it is inevitable that our species will soar into the cosmos once again and explore it, however, would this be possible at the current moment?
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The Relationship Between Space Exploration and Economic Development

By POOJA DHAR
Sponsored by DR. MARY KALTENBERG
Economics, New York

ABSTRACT
Space exploration is a budding field that humans have been able to grow. Beginning with curiosity, new technology, funding, and labor allocation, not only have there been major strides in the general realm of science but also specifically in space exploration. This paper takes into consideration matters of the United Nations’ Human Development Index, technological indicators, and the Solow growth model, while comparing spacefaring and non-spacefaring countries. In addition, this paper explores how technological variables affect the number of space objects launched by country and by year, or if a nation will go to space at all.

INTRODUCTION
Space exploration has been a goal and feat that many countries have strived to accomplish. Specifically, after the Cold War, the Soviet Union launched spacecraft Sputnik and thus started a space race against the United States. While the 1950s onwards were full of space projects focused on launching humans into space, the Hubble Telescope, and getting humans on the moon, once that was accomplished a new era of space exploration started. A phase of space exploration that was heavily based on mission control from Earth dominated from the 1960s onwards. Missions such as the Cassini Missions, the Voyager Missions, Mars missions from Pathfinder to the Perseverance rovers all were a part of these expeditions from Earth. Not only did this amplify pressure on the technological developments of the rovers and launching mechanisms, but success rate was based on innovation that had to be implemented correctly. The significance of my research is to highlight the very technological age that our generations are living through and how technological developments that promote space exploration allow our societies to economically develop. To account for this, I will be looking at those countries that are spacefaring and non-spacefaring.

Those countries that are spacefaring nations were able to push technological growth in some facet to be able to create successful technology that can launch into space. This growth in technology can also lead for a country itself to become specialized in creating certain
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The Effect of Internet and Cell Phone Penetration on Human Development

By MAHIR RASHEED
Sponsored by DR. ANNA SHOSTYA
Economics, New York

ABSTRACT
This study examines the effect of internet and cell phone penetration on human development in 77 countries. These countries are categorized by the United Nations as having medium and low human development, as measured by the Human Development Index. The analysis also explores the effect of these technologies on individual components of the Human Development Index: life expectancy, years of education, and income per capita. Data come from the 2018 United Nations Human Development Statistical Update and the World Bank. This study hypothesizes that internet and cell phone penetration will have a positive, significant effect on the HDI and its three dimensions. These hypotheses are estimated by four OLS regressions, which use the human development, life expectancy, education, and income indices as dependent variables while controlling for resource endowment and macroeconomic fundamentals. Results demonstrate that internet and cell phone penetration do have a positive, statistically significant effect on HDI values. While neither key variable was significant for life expectancy, mobile phone subscriptions had a positive and significant impact on years of education and both internet and cell phone penetration had a positive and significant effect on income per capita.

INTRODUCTION
According to Roland Berger’s Trend Compendium 2030, developing nations are projected to see 97% of the population growth on Earth, an estimated 1.2 billion people, between 2013 and 2030 (Krys, 2017). An average of 60% of the world population will inhabit cities by 2030, with 94% of urbanization occurring in developing countries. Decreasing mortality rates and improved standards of living in these nations have promoted population growth, which is a major contributor to poverty and underdevelopment in developing countries (Kenya Nursing Journal, 1991). In the presence of this risk, progressing human development becomes increasingly more urgent in developing nations. Modern digital technology may have the potential to prevent this problem, and understanding the influence of different technologies on development may aid policymakers in future decision making. The objective of this study is to determine whether or not the spread of digital technology, specifically internet
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Equation 4: Income Index

Through my research, I aimed to understand and analyze TikTok's role as a tool of social change. TikTok provides a platform for youth to engage in and become educated on activism and politics. Creators on the app have been deeply involved in their movements and communities; my research shines a light on the work they are doing. In my research I identified five themes of videos that were posted by the Black and queer communities: The first theme was TikTok videos as a tool of representation; the second, TikTok as a tool of education; third, TikTok as an alternative news outlet; fourth, TikTok as an archive of police brutality, and lastly, TikTok as a tool of community organizing.

INTRODUCTION

In my sophomore year of college, one of my professors encouraged us to conduct research that didn’t always focus on the trauma marginalized groups endured, but rather celebrated their accomplishments and experiences. In this project, I wanted to find a balance between highlighting the challenges and the beauty of social change. My research asked: how has the popular app TikTok, a video-sharing social media platform that experienced rapid growth in spring 2020 during the COVID-19 pandemic, been used as a tool for social change?

On one hand, social media can archive oppression, like police brutality, and on the other hand, it can be a platform for community building and self-acceptance. My analysis focused on the Black and queer communities, two of the largest communities on the app. I argue that TikTok has provided the Black and queer communities with an alternative news outlet as well as an organizing tool to come together and innovatively create change.

The reason I chose to look at TikTok and not other platforms is because of the younger demographic it caters to. TikTok provides a platform for youth to engage in and become educated on activism and politics. Later, I will discuss how young activists have agitated for vast international change and how TikTok has nurtured this kind of activism. Creators on the app have been deeply involved in their movements and communities; my research shines a light on the work they are doing.
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The twenty-second volume of Transactions was published in Spring 2022 by Pace University Press.

Cover and Interior Layouts by Wairimu Murithi
The journal was typeset in Verdana and Georgia and printed by Lightning Source in La Vergne, Tennessee.

Pace University Press
Director: Manuela Soares
Associate Director: Erica Johnson

Graduate Assistants: Wairimu Murithi and Kwesi Adjei Boateng
Graduate Student Aide: Rachel Smithline