

SUMMER 2021

TANGENTS

THE JOURNAL OF THE
MASTER OF LIBERAL ARTS PROGRAM
AT STANFORD UNIVERSITY

IN THIS ISSUE...

Memoir Pieces by Sandra Park, Jué Lin
Kim Navarro

Poems by Michileen Marie Oberst,
Prabhu Palani, Aarti Johri

Essays by Robert Cornwell, Fyza Parviz Jazra,
Monica Oakley, Sapna Marfatia,
Eileen Avila

PUBLISHING NOTES

This publication features the works of students and alumni of the Master of Liberal Arts Program at Stanford University.

Editors

Candy Carter

Teri Hessel

Jennifer Swanton Brown

Original Design

Suzanne West

Layout of Current Issue

Lauren Wills Creative

Faculty Advisor

Dr. Linda Paulson

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VOLUME 20

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LETTER FROM THE EDITORS

We are pleased to present this issue of *Tangents*, the Journal of the Stanford Master of Liberal Arts Program. For this the twentieth volume, we have chosen a diverse group of works by students and alumni, including:

- ✦ two narrative memory pieces reflecting on competitive ice dancing and a mother's mask;
- ✦ five poems ("Ode to the Door," "True State," "Real ID," "A Tribute to Materdom" and "The Temple Town");
- ✦ an essay exploring the possibility that Nigerian writer Chinua Achebe's negative assessment of Joseph Conrad's *Heart of Darkness* "misses the boat";
- ✦ a description of exciting original research that sheds new light on the astronomical writing in Ulugh Beg's *Zij-i Sultani*;
- ✦ a "virtual" discussion of work of William Blake's *Vestibule of Hell* in his depiction of *Dante's Canto III*;
- ✦ an excerpt from a longer project, arguing the St. Paul's Cathedral's intermediate dome designs are the "architecture of the Scientific Revolution";
- ✦ an essay showing how American Enlightenment writer Judith Sargent Murray embraced ideals of her era, particularly as they related to women's financial independence;
- ✦ a memory poem drawn from a grammar book bought from a street stall in Tblisi, Georgia;
- ✦ original watercolors



Be sure to learn about this issue's contributors, highlighted on the last page.

We hope that our choices will provide enjoyable reading and inspire future contributions!

This is our third year of service as editors for *Tangents*, and we welcome feedback. We faced additional challenges this year with pandemic restrictions! Nevertheless, the continuing generosity of alumni and supporters of the MLA program make our annual publication possible. Thank you!

Candy Carter, editor

Teri Hessel, associate editor

Jennifer Swanton Brown, associate editor (poetry)

DID ACHEBE MISS THE BOAT? GOING UP RIVER IN *HEART OF DARKNESS*

by Robert Cornwell

“JOSEPH CONRAD WAS A THOROUGHGOING RACIST.” (ACHEBE 5)

So famously asserts Chinua Achebe in his critical essay about *Heart of Darkness*. But does the text of *Heart of Darkness* truly justify this bald, unqualified assertion? And does such disparagement distract from the revelatory project of Conrad's book, maligning the author and prejudicing readers' understanding of the text before they can absorb Conrad's subversive critique of imperialism and racism? Achebe's denigration arguably contradicts his own project: combating white supremacist portrayals of Africa and Africans.

In his essay, Achebe pretends to read *Heart of Darkness* as some realist account of Africa, completely ignoring the clear katabasis of Marlow's descent into his unconscious. As an accomplished novelist himself, this approach feels flat-footed and an almost willful misreading. Achebe seems also self-serving in ascribing Marlow's views directly to Conrad merely because they share some biographical similarities, conveniently skipping over Conrad's Polish birth and status as a non-native English speaker. Certainly the layered narrative structure of *Heart of Darkness*,

with Marlow relating almost the entire story and recounting what the other characters say, with an unnamed narrator reporting what Marlow relates, creates considerable ambiguity in attributing Conrad's personal views.

In his criticism of *Heart of Darkness*, Achebe properly points out Conrad's stereotyped caricatures of Black Africans. Conrad used the N-word liberally, including in the title of another novella. Achebe quotes several of Conrad's raw portraits of Africans, including this passage from *Heart of Darkness* describing a boat paddled by “black fellows”:

“You could see from afar the white of their eyeballs glistening. They shouted, sang; their bodies streamed with perspiration; they had faces like grotesque masks -- these chaps; but they had bone, muscle, a wild vitality, an intense energy of movement that was as natural and hue as the surf along their coast. They wanted no excuse for being there.”

(Achebe 3, 4; Conrad 16)

CERTAINLY THE LAYERED NARRATIVE STRUCTURE OF *HEART OF DARKNESS*, WITH MARLOW RELATING ALMOST THE ENTIRE STORY AND RECOUNTING WHAT THE OTHER CHARACTERS SAY... CREATES CONSIDERABLE AMBIGUITY IN ATTRIBUTING CONRAD'S PERSONAL VIEWS.

Conrad paints Africans as goggle-eyed, vibrant and physically robust, with “grotesque” faces, familiar racially tinged images of Blacks. But the last line, “They wanted no excuse for being there” points to Conrad’s more subtle racial project. If the Blacks wanted no excuse for being in the African place from whence they came, the invading European whites must need an excuse to be there, and their excuse turns out to be a rapacious, ultimately purposeless imperialism which leads to deep inhumanity and the unspeakable evil manifest in Kurtz.

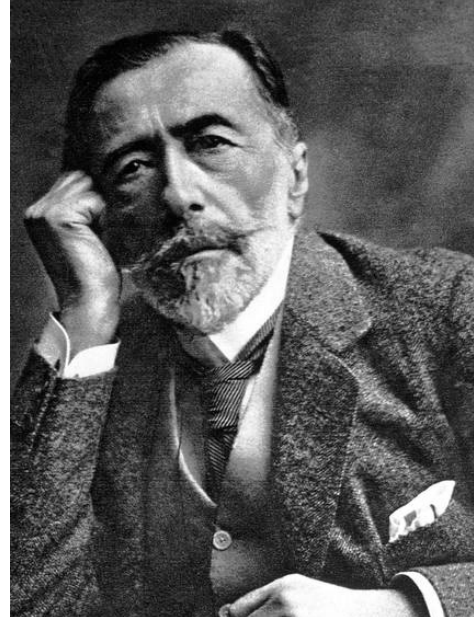
A bit further along in the narrative, Conrad gives another portrait of Africans. Walking from the jetty on the lower river, Marlow comes upon a party of enslaved Black workers:

“A slight clinking behind me made me turn my head. Six black men advanced in a file, toiling up the path. They walked erect and slow, balancing small baskets full of earth on their heads, and the clink kept time with their footsteps. Black rags were wound round their loins, and the short ends behind wagged to and fro like tails...each had an iron collar on his neck, and all were connected together with a chain whose bights swung between them, rhythmically clinking.” (Conrad 18)

The Africans are brutally, cruelly oppressed, like slaves, shackled and forced to labor against their will. The “short ends of their rags wagging” invites comparisons to animals. But this image of Africans is paired with that of their unsavory European overseer, an avatar of imperialism. Conrad’s description of him is rich with mocking irony:

“Behind this raw matter one of the reclaimed, the product of the new forces at work, strolled despondently, carrying a rifle by its middle. He had a uniform jacket with one button off, and seeing a white man on the path, hoisted his weapon with alacrity. This was simple prudence, white men being so much alike at a distance that he could not tell who I might be. He was speedily reassured, and with a large, white, rascally grin...seemed to take me into partnership...After all, I was part of the great cause of these high and just proceedings.” (Conrad 18, 19)

Here too, the European overseer is out of place and



CONRAD’S PORTRAITS OF BOTH BLACKS AND WHITES ARE QUEASILY UNAPPETIZING, BUT IT IS THE WHITES WHO ARE MORALLY SUSPECT.

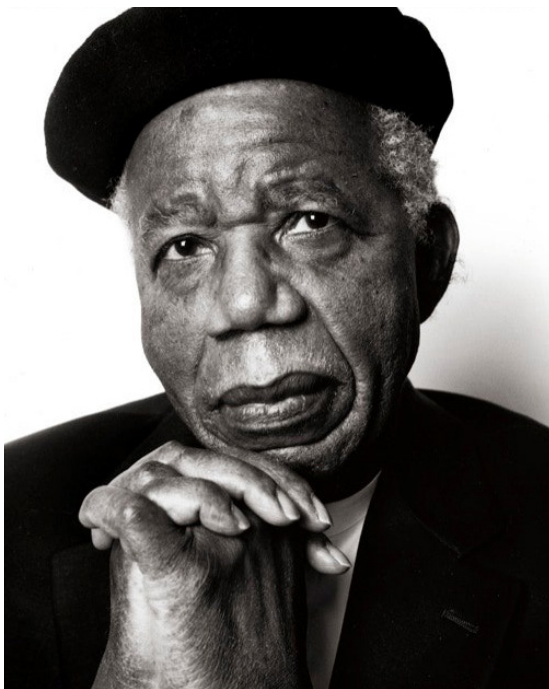
unhappy in Africa, a desultory presence: one button is missing off his uniform jacket. Marlow satirizes him as “reclaimed, part of the new forces at work” and the colonizing activities of whites in Africa as “the great cause of these high and just proceedings,” where subject Africans are shackled together with iron collars around their necks. The European guard’s “white grin” is “rascally.” White people all look the same, a standard racist trope about Blacks, here turned against the whites. Conrad’s portraits of both Blacks and whites are queasily unappetizing, but it is the whites who are morally suspect.

Modern readers of Achebe almost reflexively fall into line with his labeling Conrad’s images of Blacks as racist. But few consider that his descriptions of whites are equally uncomplimentary. Except for Marlow’s audience aboard the *Nellie*, that chosen Conradian brotherhood sanctified by the “bond of the sea,” Conrad’s portraits of virtually all of his white characters are at least as damning as those of blacks. He skewers each with an irony rendering them self-important, self-unaware fools or crazies. Consider the white boilermaker at the Central Station:

“He was a lank, bony, yellow-faced man, with big intense eyes. His aspect was worried,

and his head was as bald as the palm of my hand; but his hair in falling out seemed to have stuck to his chin, and had prospered in the new locality, for his beard hung down to his waist...the passion in his life was pigeon-flying...He would rave about pigeons...he would tie up that beard of his in a kind of white serviette he brought for the purpose.” (Conrad 35)

Like the Black men, the white man’s eyes are distinguishing and prominent. His skin is yellow, a sickly color. Unlike the robust Blacks, he is bald and absurdly bearded in the tropical sun. The long beard is trussed up and daintily protected with a kind of napkin. He is raving. All of Conrad’s white characters beyond the Thames estuary are unbalanced. Once we have left the “brotherhood of the sea,” no one is truly sane, not even Marlow. Everyone’s eyes, Black or white, are bulging, literally or metaphorically. Crucially, some Black Africans are credited with at least the possibility moral sense, whereas the white Europeans are completely unmoored. When the African crew of the up-river steamboat are virtually starving after having gone days without food, Marlow observes, according them a full humanity: “Yes, I looked upon them as you would on any human being, with curiosity” (Conrad 51) and continues, amazed that they have not overpowered and eaten the white “pilgrims” and their unshared food: “Restraint! What possible restraint? Was it superstition, disgust, patience, fear—or some kind of primitive honour? No fear can stand up to hunger... And these chaps to had no earthly reason for any kind of scruple” (Conrad 51). Yet the Blacks do retain their scruple, their moral compass. They do not revolt,



or kill the whites that are at their mercy at this point in the story. By contrast, the white members of the Eldorado Exploring Expedition, a stand-in for the European colonial project generally, are morally reprehensible:

“Their talk...was the talk of sordid buccaneers: it was reckless without hardihood, greedy without audacity, and cruel without courage... To tear treasure out of the bowels of the land was their desire, with no more moral purpose at the back of it than there is in burglars breaking into safe.” (Conrad 36-37)

Rapacious talk is not leavened even by the virtues of hardihood, audacity, courage or restraint. The whites’ behavior is as base as it can possibly be, without redemptive value. White Europeans in the colonial project are utterly amoral, raping the land and carrying off the spoils like common criminals. Reaching through this criticism of imperialist behavior, Marlow identifies its fundamental racist nature: “The conquest of the earth, which mostly means taking it away from those who have a different complexion or slightly flatter noses than ourselves, is not a pretty thing when you look at it too much” (Conrad 7). This passage represents the most direct refutation in the text of Achebe’s indictment of Conrad as a “thoroughgoing racist” based on *Heart of Darkness*.

And if indeed one accepts Achebe’s assertion that Marlow is Conrad, Marlow’s somewhat ambiguous racial and spiritual status poses a conundrum. The primary narrator describes him in the book’s opening scene:

“Marlow sat cross-legged right aft, leaning against the mizzen-mast. He had sunken cheeks, a yellow complexion, a straight back, an ascetic aspect, and, with his arms dropped, the palms of his hands outwards, resembled an idol.” (Conrad 4)

And at the end of the book, Conrad offers another brief description: “Marlow ceased, and sat apart, indistinct and silent, in the pose of a meditating Buddha” (Conrad 96). Marlow has a yellow complexion, and his “straight backed, ascetic aspect” is compared to a religious idol, implying he is a spiritual figure, especially when combined with the final paragraph’s direct comparison of him to a Buddha.

The Asian allusions also add a multiracial dimension to the allegory that Achebe portrays as an African-European dichotomy.

Achebe makes much of Conrad using Africa as a foil to Europe. And there is no question that Conrad wanted a foil for the Western imagination (or was it just the human imagination?) in setting his story. But, tellingly, though the unspoken geography is clear, Conrad nowhere names Africa as the continent or the Congo as the river for his setting. Nor does he name the company as the Leopold's *Compagnie du Congo*, or the "sepulchral city" as Brussels. The only named setting is the Thames estuary that bookends the story. These devices are signals to the reader that Marlow's most important journey lies within, and not in the tangible, geographical world.

Why then choose Africa, even if it is not named? A hint comes early as Marlow begins to tell of the reasons for his journey:

"Now when I was a little chap I had a passion for maps...At that time there were many blank spaces on the earth...I would put my finger on it and say, When I grow up I will go there. The North Pole was one of those places...but there was one yet—the biggest, most blank...--that I had a hankering after." (Conrad 8,9)

It is the blank space, in this case the biggest blank space on the earth, onto which the individual projects his own inner moral struggle, and where Conrad sets Marlow's story and Kurtz's stronghold. Yes, it is Africa, but that is not the most important characteristic of the space, rather it is its blankness, the undefined void that later becomes the darkness which compels Marlow. Much of Conrad's power as a novelist comes from his skill evoking place and people, so naturally he worked from his experience. Thus we have the Congo River trailing into central Africa, and not some unconvincing, un-experienced polar region (like Mary Shelly used in *Frankenstein*). Achebe also makes much of Conrad's alleged treatment of the River Congo and the River Thames in opposition: the African river and the European river, and how the reader should read this comparison as a racist metaphor:

"But if it were to visit its [the Thames] primordial relative, the Congo, it would run the terrible risk of hearing grotesque echoes of its own forgotten darkness, and falling victim

to an avenging recrudescence of the mindless frenzy of the first beginnings." (Achebe 2)

But contrary to Achebe's assertion that England, and by extension Europe as symbolized by the Thames, have shed their darkness, Conrad's concluding paragraph clearly equivalences the modern Thames with the unnamed River Congo as a seat of darkness: "'We have lost the first of the [Thames tidal] ebb,' said the Director, suddenly. I raised my head. The offing was barred by a black bank of clouds, and the tranquil waterway...—seemed to lead into the heart of an immense darkness" (Conrad 96). The hearts of darkness lie in interiors, there are humans in these interiors, and in the hearts of humans darkness lies. The strongest argument that Achebe's criticism misses the point and indeed misconstrues the novel's racial point of view lies in Achebe's ignoring its core: at each metaphorical "heart of darkness" in the book are white men: the city people of London (essentially all white in 1899) behind the gathering gloom of the Thames estuary and most particularly Kurtz in the vortex of the story at the inner station. Even at the company headquarters in the "sepulchral city" the "great man" (5'6"!), who is white, is found behind heavy inner sanctum of the company "guarding the door of Darkness" (Conrad 12). Here are Conrad's truly evil places and evil men, and they are all white, not African.

THE HEARTS OF DARKNESS LIE IN INTERIORS, THERE ARE HUMANS IN THESE INTERIORS, AND IN THE HEARTS OF HUMANS DARKNESS LIES.

Accounting for the historical moment of *Heart of Darkness* is essential to understanding Conrad's project. Britain was in the thrall of a positive imperialist vision. In fact, 1899, the year of the book's publication, was perhaps the apex moment of Western and British imperialism. Queen Victoria's Diamond Jubilee—arguably the high water mark of British colonial self-congratulation—had been



celebrated only two years before. The United States, once a colony itself, had just evicted Spain from Cuba and the Philippines and was establishing its own empire. Rudyard Kipling penned "The White Man's Burden" in the same year Conrad wrote *Heart of Darkness*. The Boer War had not yet wearied a triumphalist Britain of foreign entanglements. It is probably the case that virtually everyone in 1899, certainly almost all Europeans, and probably most authors, would be labeled racist by the standards of Achebe's late 20th century. It was also the case that most Europeans, through the vigorous imperialist propaganda of the age, had positive views of their own country's foreign empires. But to place this criticism front and center in thinking about *Heart of Darkness* obscures Conrad's subversive agenda undermining both the imperialism and racism of 1899. His exquisite use of irony pierces the hypocrisy and self-serving conceit of the late 19th century racist-imperialist project. Achebe assailed an ally. Certainly Achebe experienced the sting of racist treatment in colonial Nigeria and as an academic America. And he was justifiably angry that most of the world read Africa through the work of European rather than African writers. He had cause for grievance. But in derogating Conrad, he blinds the reader to Conrad's criticism, however nuanced, of European colonialism, and ultimately of white racism. Was Conrad a racist? From a late 20th century viewpoint, he certainly indulged in racist images and repugnant name-calling. But given his treatments of whites in *Heart of Darkness*, he could be called an "equal opportunity" racist. Was Conrad a "thoroughgoing" racist? The text does not support Achebe's assertion. In fact, Conrad's language, where Europeans are "out of place," have no justifiable purpose in Africa, are involved in amoral, feckless projects with horrible consequences for Africans

as well for their own sanity, shined a devastatingly critical light on white European imperialism just at the moment of its apparent *fin de siècle* triumph. Like Achebe, Conrad's Marlow sees and exposes the moral bankruptcy of colonialism and the racism that undergirds it. Achebe's put-down of Conrad as a "thoroughgoing racist" does not so much shine a light on *Heart of Darkness* as it shines a light in our eyes. Achebe makes Conrad out to be the enemy when he is in fact an ally.

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TBILISI, GEORGIA IN JULY 2019

by Sandra Park



59

Without knowing Georgian, she nevertheless proceeds to translate what is overheard on the streets of Tbilisi.

60

Along Rustaveli Avenue the buzz of cicadas sounds like faulty electrical wiring. Their wings beat and buckle, tymbals clicking, raising a racket. An arbor of plane trees announces a wedding between the avenue and the sidewalk.

61

Georgian is written exactly as it is spoken: Bor-jo-mi Spark-ling Wat-er.

62

Mama is father, *deda* is mother. *Mama, vardi minda*, Father, I want a rose. *Mamuli* is big mama fatherland. A big shot VIP is simply called *Mama*.

Tragically, way back when, *mamuli* was not big enough for a noble Muslim boy and a Georgian princess. Ali and Nino cross the desert together, lovers on horseback, in search of a desert rose.

63

Gogi is standing. Zaza is sitting. Where is Niko? Where is Vano? They are at home. *Make the sentences of your own using the following words.* Nino, here is a rose. *Nino, ai vardi.* Nino, what do you want a rose for? *Nino, vardi rad ginda?*

64

Read and copy the words. The style of tracing is ornamental. Field, heart, knife. Track, trail, lion. Handwritten cursive is different from print. Copy the words in print and handwritten style. Both variants are indispensable for mastery of any language.

65

Hallow Tamar! Hallow Vano! What are you doing? Ask your sister Nino whether she is free (now). Nino is not here. She is in love, crossing the desert on horseback. The horse is exhausted, crisscrossing Daghestan,

crisscrossing Daghestan, Azerbaijan, Georgia, all over Persia. She is with child. She wants Ali to go with her to Paris on an arranged diplomatic mission. Ali cannot live without the desert under the stars. The lovers are doomed. The Red Army descends.

Ask her to come out for a short while. Nino is not here. She is fleeing on foot, carrying her swaddled child. Fill in the spaces with suitable words.

66

Proud Georgians, whether upright or stooped, cross the street in bold confrontation to oncoming traffic. Near misses of cars and pedestrians is everyday sport.

67

On the steps of Parliament, resistance to Russian provocation is amplified by loudspeakers. A big screen plays a loop of crowds surging, of tear gas, rubber bullets. It is night-time: soft breezes ruffle leaves and skirts. Music plays, a camera crew covers the scene. GAKHARIA, GO HOME!

68

By day, the steps of Parliament are empty, a battered paper maché head is propped on a cardboard pedestal. Unlike Freedom Square, there is no saint girded for battle on a rearing horse.

A middle-aged woman in sensible shoes stands outside a camouflage pup tent, beckoning to her husband, My dear pet, the hunger strike is over, Vano and Zaza are falling behind. Enough!

The gaunt man with ginger hair says nothing, looking up at his wife quizzically, trapped in his own set of *uni-personal verbs in six distinctive forms*. He is a uni-person, pup tent kinda guy.

68

The Georgian verb is a very complex part of speech. Verbs have categories of tense, mood, aspect. Formally, this refers to a set of six verb forms or screeves inflected for person and number. An idea expressed by a whole sentence in English may be rendered in Georgian by a single word. The question remains, what single word will make Mister Gakharia go home? Or the ginger hair, uni-pup tent guy go back to his wife?

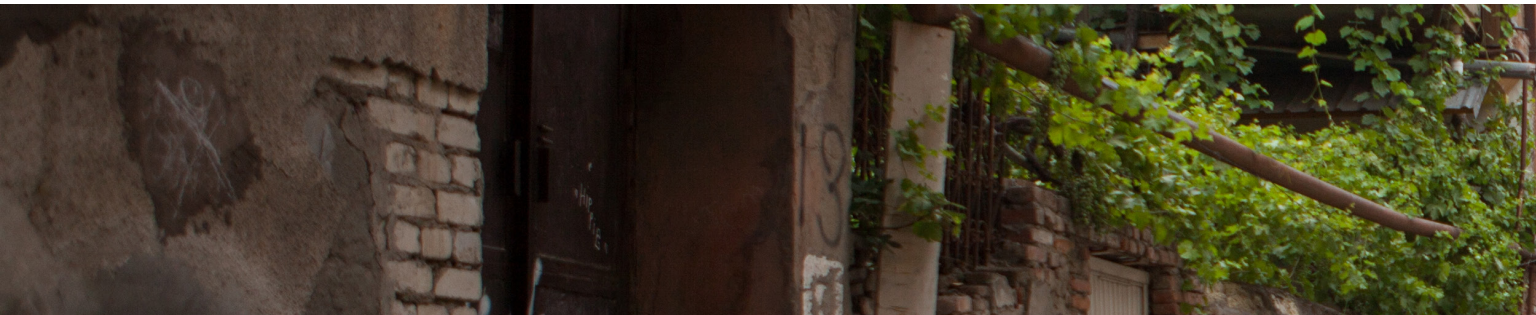
69

Thanks to the fairly large number of inflectional grammatical forms in Georgian, the word order in a simple sentence is free. Dog bites man; man bites dog. Proper forms make clear that the subject bit the object and not the other way around.

70

Be tireless in well-doing in great matters as in small, as the sun shines equally on roses and noxious weeds. Free men are bound by generous deeds, and those who are in bondage submit of their own free will. Let your beauty flow out like the tide of the sea, and like the tides return to you. Munificence is as fitting in a monarch as a tree in the Garden of Eden, and will turn even traitors into loyal subjects. We benefit from eating and drinking, not from hoarding up good things. What you give away remains your own, but what you keep is lost!

Shota Rustaveli is known for his tales as a questing knight of the Middle Ages. This fine knight who roamed the great expanse of the Silk Road was an Arab Muslim who equally praised the three sovereigns, Judaism, Christianity, Islam. Georgians are known to offer a groaning board for a perfect stranger. Even little old ladies in castaway disco outfits generously round up *lari* for coffee grinders and fruit sellers. Everybody rounds up.



71

Learn this poem by heart. Fill in the spaces with suitable words from the poem. Sovereign, friendship, bounty. Snow, poor, bereaved. Not a lamb could steal another's milk under their rule, and the wolf and goat would graze together.

72

The poet's desire was entwined with the spirit of the quest, Sufi mysticism his cup, its invocation of *Listen!* often on the tip of his tongue. Orphaned at an early age, his *mama* and *deda* were the severe heights of the Caucasus. Apart from his poetry, we know almost nothing of his life.

Newcomers to Tbilisi often mistake busy Rustaveli Avenue as a landmark, not realizing that Rustaveli winds through the entire city, a point everywhere and nowhere.

73

Gigi on guitar, Misho on bass, Daniel on drums play at the Melograno. Translating American jazz into round ornamental cursive. Russian provocation, Georgian protest, cancelled reservations.

Proud Georgians pour wine, put silverware to bed in the folds of white napkins. The empty room is serviced by a full staff. We are Georgian. Come, sit. Throw back your head, laugh with us.

74

Learn this poem by heart. Comb your beard. Go back to your wife.

NOTES

¹ Sections 59-74 is an excerpt of a longer project.

² Italicized rules and instructions, such as "Fill the spaces with suitable words," is quoted from *Teach Yourself Georgian* by Medea Kraveishvili and Grigol Nakhutsrishvili.

³ "Be tireless in well doing...what you keep is lost!" is quoted from *The Knight in the Panther Skin* by Shota Rustaveli, translated by Lyn Coffin.



PRACTICAL ASTRONOMY IN THE ISLAMIC WORLD: THE SIGNIFICANCE OF ULUGH BEG'S *ZIJ-I SULTAN*

by Fyza Parviz Jazra

Scholars hail Ulugh Beg's (1394–1449) 15th-century observatory in Samarkand and associated madrasa as one of the most famous scientific institutions in the Islamic world. The observatory produced unequalled astronomical observations that resulted in a star catalog called the *Zij-i Sultani*. A team of dedicated astronomers created the astronomical tables at the Samarkand observatory, and their work stood out for the accuracy with which the tables were computed. There are several extant copies of these tables from different centuries distributed across libraries all over the world. No platform provides a list of all the *Zij-i*



Section of the painting *Ulugh Beg with ladies of his harem and retainers* (1425–1450), Smithsonian Institute

Sultani or the complete treatise for a researcher to compare and contrast the various editions. To address this problem, I developed a website¹ where I present three different editions of this catalog and other features to highlight the importance of this

work in astronomy. The first copy of *Zij-i Sultani* that I have on the website is a digitized 18th century Arabic edition at the *National Library of Egypt*. The second is a Persian edition sample at the *Oxford Bodleian Library* that belonged to 17th century Oxford Mathematician and Astronomer John Greaves. And the third copy presented on the site is a sample of a 17th century Latin translation by Thomas Hyde. This copy is available at Stanford Library's *Special Collections*, and I digitized this edition for my project's purpose. From the various manuscript and printed editions of *Zij-i Sultani* found and preserved in the libraries worldwide, scholars can see that it was immensely influential and remained active in use. D.A. King's and E.S. Kennedy's extensive research on the origin of the term *Zij* explain its derivation as being from "Pahlevi *zik*, that meant 'thread' or 'cord' and was already used in the Pahlevi language—Middle Persian that became the literary language of the Sasanian Empire (224 to 651 AD)—with the meaning astronomical tables."ⁱⁱ More recent scholarship has revealed that the term *Zij* was also initially used in Arabic "to denote an astronomical text in verse."ⁱⁱⁱ The latest definition of a *Zij* established by Kennedy is that it is a set of "numerical tables and accompanying explanation sufficient to enable the practical astronomer, or astrologer, to solve all the standard problems of his profession, i.e. to measure time and to compute planetary and stellar positions, appearance, and eclipses ... the tables themselves, as the end results of theory and observation, can be used to reconstruct the underlying geometric models as well as the mathematical devices utilized to give numerical expression to the models."^{iv} A *Zij* is an output of methodical and systematic long-term observations

of the stars and planets and is used to create cosmological models of the universe.

Approximately 250 *Zijs* are compiled in the Islamicate world during the period from the 8th to the 19th century, with multiple copies, possibly in thousands, of these *Zijs* distributed all over the world. Science historians have been working to discover new *Zijs* as well as their copies. Most of these manuscripts remain unexplored, requiring extensive research to translate and study these star tables, primarily to illuminate the cosmological models developed by astronomers in the Islamic world, and to highlight their contributions in this field of study.

Historians claim that one of the most important and influential *Zijs* produced in the Islamicate world is Ulugh Beg's *Zij-i Sultani*^v (1437). This was one of the greatest achievements of the Samarkand observatory. Ulugh Beg was the grandson of the great Central Asian Mongol conqueror Timur (1336–1405). After the death of his grandfather, Beg followed his father, Shah Rukh (1405–47), ruler of the eastern half of the Timurid Empire, to Samarkand. At the age of sixteen, Beg received an entire province of Mawarannahr to govern from his father. The province included the great city of Samarkand, where he eventually founded a madrasa and an observatory and invited the greatest mathematicians and astronomers from the Islamicate world to come to study and teach. After his father's death in 1447, Beg briefly ascended to the throne. Lacking political skill, however, he was easily outmaneuvered by his nephew. On October 27, 1449, at the age of 56, he was beheaded on an order from his son, Abd ul-Latif. Archaeologists found Ulugh Beg's tomb and remains in Samarkand 1941. "When the archeologists examined the body of Ulugh Beg, it was discovered he was buried as a *shahid* (wearing the clothes he died in), a sign that he was considered a martyr at the time of his death."^{vi}

Ulugh Beg may have become interested in astronomy after visiting the ruins of Nasir al-Din Tusi's (1201–1274) Maragheh Observatory as a child and later discovering during his madrasa studies that the *Zij-i Ilkhani* of Nasir al-Din Tusi was badly out of date. As a result, he decided to establish an observatory to compile a new and more accurate treatise, founding his madrasa on the central square of Samarqand in 1417, specializing in advanced theology and mathematical sciences. Specializing in advanced theology and mathematical sciences, the madrasa grew in size and importance over the next three years, attracting talented scholar-teachers and ambitious

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students. It soon became a major center of learning in the Islamicate world, and the institution's influence spread widely.

Zij-i Sultani contains 1,018 stars, the positions of some of which were determined mainly from observations made at the Samarkand observatory, and was considered to be the most accurate and extensive star catalogue up to its time, surpassing its predecessors Ptolemy's 2nd century *Almagest* and Nasir al-Din Tusi's 13th century *Zij-i Ilkhani*. The superiority of this *Zij* was due primarily to the new and more accurate observations of the planets and stars made possible by the outsized and sophisticated equipment of the observatory. Given the number and size of the instruments and the difficulties of calculation, a large number of mathematicians and astronomers were required for the day-to-day work of observation, measurement, and calculation. Ulugh Beg's astronomers were able to more accurately determine the obliquity of the ecliptic. Their value – 23.52 degrees – was more accurate than Copernicus's or Tycho Brahe's value centuries later. Jamil Ragep highlights the widespread influence of the Samarkand astronomers by stating that after Ulugh Beg's death, they "continued the tradition ... [and] [disseminated] the mathematical sciences throughout the Ottoman and Persian lands."^{vii}

Multiple editions of *Zij-i Sultani* exist in various languages with editions in Persian, Arabic, Latin, French, and English housed in libraries all over the

world. Even a Hebrew version of the *Zij* is preserved in Paris, Bibliothèque Nationale de France, MS Heb. 1091. The treatise itself was divided into the following sections. The chronological tables covered the Hijra, Yazdegird, Seleucid, Maliki (or Jalali), and Chinese-Uighur eras and calendars. The trigonometric tables were calculated to five places for both the sine and tan functions and the spherical trigonometric functions were computed to three places.

The web-edition that I developed of *Zij-i Sultani* brings to light three editions of *Zij-i Sultani*. First is an 18th century edition of an Arabic translation available at the *National Library and Archives of Egypt*. It has been made digitally available by the *World Digital Library*. According to the manuscript's metadata, this manuscript is a translation from Persian into Arabic by Yahya ibn Ali al-Rifai, who had taken on this project at the behest of "Egyptian astronomer Shams al-Din Muhammad ibn Abu al-Fath al-Sufi al-Misri (died circa 1494), who was involved in studying and revising Ulugh Beg's *Zij* for Cairo's geographical coordinates."^{viii} In fact, this copy consists of two manuscripts bound together. One is from 1721 and is scribed by Yusuf ibn Yusuf al-Mahalli al-Shafii, known as al-Kalarji. The second manuscript, dated 1714, is another Arabic translation from Persian scribed by a different hand. It is stated in the preface that this translation from Persian was done by Hasan ibn Muhammad al-Fasihi al-Nizami, known as Qadi Hasan in 1607. This web-edition also includes a transcription and translation of the first paragraph of this second manuscript.

The second edition presented on the website is *MS Greaves 5*—a Persian edition at the Bodleian Library at Oxford owned by John Greaves (1601-1649), Savilian professor of astronomy at Oxford. In 1636 Greaves traveled to the East to acquire Oriental Manuscripts and make astronomical measurements. His travel journals include a handwritten note by a Sheikh, possibly an astronomer, who had provided him with a list of twelve works to acquire. There is a reference to Ulugh Beg's *Zij* in the second entry: ^{ix} "مدع ب مٹ غل ا ج يز نم اقل طم مي وقت ل ا ببتك MS Greaves 5 could be one of the manuscripts Greaves brought back to England. However, the Bodleian metadata does not indicate its acquisition information nor its date of origin and also incorrectly lists the language of this manuscript as Arabic. Two pages of this manuscript edition are digitally available and include annotations by Greaves, who was probably working with this manuscript for his translation of the *Zij*.

In 1643 he prepared his investigation as "Tabulae integrae longitudinis et latitudinis stellarum fixarum juxta Ulugh Beigi observationes." An annotation in *MS Greaves 5* indicates that he was simultaneously working with three MSS of the *Zij*, but it is also believed that he had collated five manuscripts for the accuracy of his edition.^x Unfortunately, Greaves's full translation was never published, but part of this work made its way in his mentor and fellow Oxford mathematician John Bainbridge's 1648 publication "Cunicularia." I am currently working on a project with the Bodleian library to digitize the other editions of Ulugh Beg's *Zij* owned and annotated by Greaves. My goal is to create an annotation tool that will aid researchers to study Greaves's marginalia in these manuscripts.



Reconstruction by Va Nil'sen of the observatory of Ulugh Beg at Samarkand, Agence Rapho, Paris

And lastly, the third edition of the *Zij* exhibited on the website is preserved at Stanford University's *Special Collections*. I digitized this book for the purpose of the project. It is a copy of a 1665 Latin Edition by the Bodleian Librarian Thomas Hyde. It was one of the first books printed in Arabic at Oxford. This copy is annotated, highlighting that the previous owner was actively studying the contents and probably using the tables for computational purposes. Hyde's edition contains Ulugh Beg's complete table with 1018 stars. The Arabic tables with the Latin translation are printed side by side. Unfortunately, Stanford does not have an acquisition history of this object except that this text was purchased by the library in 1996 and is part of the *Barchus Collection*.

Scholars need a single source to easily find and access all the *Zij*'s produced in the Islamic World. The website is an embryo of a much larger project. My current aim is to bring all the various extant editions of *Zij-i Sultani* into one platform with a detailed history of where and when these copies were produced. Another goal of the project is to work

with libraries worldwide to digitize the *Zij-i Sultani* in their collections. I also want to build tools to allow researchers to annotate and closely study these manuscripts to compare and contrast the different editions from various centuries. Some editions may be exact copies of the original *Zij*, and some may have additional commentaries or changes made by the scribes and astronomers. A platform with the entire corpus of *Zij-i Sultani* will significantly aid and advance research in the study, development, and dissemination of the knowledge of observational astronomy.



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ENDNOTES

ⁱ This is a beta version of the site:
<http://web.stanford.edu/~fparviz/zij.html>

ⁱⁱ David A. King and Julio Samsó, with Bernard R. Goldstein - 'Astronomical handbooks and tables from the Islamic World (750-1900): an interim report, *Suhay* 2 (2001), pp. 9- 105.

ⁱⁱⁱ Ibid

^{iv} E. S. Kennedy. "A Survey of Islamic Astronomical Tables." *Transactions of the American Philosophical Society* 46, no. 2, 1956, 123.

^v Translated as The Emperor's Star Table

^{vi} Jerry D Cavin. "Ulugh Beg." In *The Amateur Astronomer's Guide to the Deep-Sky Catalogs*, edited by Jerry D Cavin, 51-54. New York, 2012.

^{vii} Thomas Hockey et al. (eds.). *The Biographical Encyclopedia of Astronomers*, F. Jamil Ragep, "Qadizade al-Rumi: Salah al-Din Musa ibn Muhammad ibn Mahmud al-Rumi", *Springer Reference*. New York, 2007, 942.

^{viii} Ulugh Beg. An Arabic Translation of the Astronomical Tables of Ulugh Beg, 1714-1721, <https://www.wdl.org/en/item/3951/>

^{ix} A reference to this handwritten list is in the essay by Zur Shalev "The Travel Notebooks of John Greaves," in *The Republic of Letters and the Levant*, ed. Alastair Hamilton, Maurits Boogert, Bart Westerweel, (Leiden. Boston: Brill, 2005), 77-102. Shalev translates the Ulugh Beg second entry as: "books of calendars/ almanacs derived from the *Zij* of Ulugh Beg and others."

^x Bodleian Library, MS. Greaves 5
<https://digital.bodleian.ox.ac.uk/inquire/p/8772a1fe-ab37-45d6-80ff-f1430f0e6585>



Painting from MLA student Aparna Chandra

ODE TO THE DOOR

By Michileen Marie Oberst

I went to the door to pray. No other reason. Just pray.
But I fell.

As I lay inside the door, People walked by.
They kept asking "Why are you here? What are you
doing?"

I'd say I came to the door to pray.

They'd say "Pray? To the door?"

And I'd say no.

Just pray.

They'd say "What religion? What religion makes you
pray to a door?"

I'd say, none. No religion asks me to pray to a door.

They'd say "Then what religion do you pray?"

I'd say none. I pray truth not religion.

Some ignored me, some laughed at me, some spat on
me, and some laid down by the door.

They asked me "How do we pray to the door?"

I said I did not know.

They begged me and offered me payment for knowledge
I did not possess.

I said pray to truth.

So they got up and left, to be taught rules on how to
pray to doors.

Because I was doing it wrong.

I got up and left.

Through the door and out into the world.

This was my prayer to the door.

JUDITH SARGENT MURRAY: HER MONEY MATTERS

by Monica Oakley

American Enlightenment values of equality, independence, and progress applied almost exclusively to white men during the eighteenth century. White women endured considerable barriers to accessing the fruits of these inspiring and exciting new ideas. Women also contended with the notion that virtually all men during the period deemed them inferior. One woman, Judith Sargent Murray (1751-1820), courageously spoke up to argue that women were being wholly underestimated. She wrote prolifically, for a public audience and in letters to her family and friends, that women possessed the capacity to reason, to learn, to know, and to invest in securities. Judith Sargent Murray* embraced Enlightenment ideas and suggested they applied to women, especially with regard to a woman's financial independence.

Judith grew up in Gloucester, Massachusetts, the oldest of eight children. She inherited social prestige from both her mother's and father's prosperous merchant marine families. The portrait of Judith at age 18 by John Singleton Copley, near the time she married her first husband, portrays her elite status. As shown in the figure, the artist represents her as a Roman matron, complete with characteristic pearls dangling from upswept hair, her toga-like, uncorseted gown, her lack of jewelry, and upright stance (Winterer 53-55). Her wealthy peer group idolized classicism, and Judith's portrait displays the connection. As a young woman, Judith's early privilege set the foundation from which she compared her future financial circumstances. Even with the family wealth Judith enjoyed, coverture laws rendered her powerless to control her own financial well-being. The term "coverture" refers to the idea that during marriage a wife was "covered" by her husband's authority and legal identity. Married women lacked any control over property and contracts, and could not act financially without their husband's permission. Moreover, the coverture laws were centuries old and entrenched in society.

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"A typical wife in New England in 1750 had much in common with a typical wife in England in 1250" (Stretton 5). The first reforms to laws governing American women's property did not pass until the 1840s (after Judith's death in 1820), and "coverture was not abolished quickly or coherently" (Kerber



154). The last vestiges of coverture ended more than one hundred thirty years later, with the Equal Credit Opportunity Act in 1974, when married women were finally allowed to obtain credit cards and loans in their own name. Due to the embedded nature of coverture in the late eighteenth century women had a difficult time envisioning, let alone fighting for, an alternative approach to what we see now as profound economic and social injustice.

Judith's experience with family finances during her first marriage to John Stevens opened her eyes to the true nature of coverture. Stevens came from a Gloucester elite merchant family similar to Judith's own. When they married, his financial future looked bright. However, during the eighteen years of their marriage, John's commercial interests suffered, in part from economic difficulties associated with the American Revolution and in part from his inability to manage money properly. His dwindling fortune totally collapsed after the war. Around this time Judith pleaded with John to tell her the truth about their monetary situation, but he refused. She learned of their true financial ruin only in January 1786 from her father, who had previously contributed money to the couple in trying to help them stay afloat (Skemp, *First Lady* 35). Judith was devastated, and felt tremendous humiliation. In April 1786, against her wishes, John sailed from Gloucester to the West Indian island of St. Eustatius to evade debtors' prison and his creditors. Judith, shocked at the heartbreaking news of her husband's death there in March 1787, was left to clean up the financial mess. Judith began the next phase of her life with the intent to establish her financial independence. Her brother Winthrop, who she was perhaps closest to of her siblings, "urged her to move in with their parents, but Judith steadfastly refused" (Skemp, *Judith* 50). She loved her parents dearly but did not want to live with them. Judith wrote that "the term, *helpless widow*, might be rendered as unfrequent and inapplicable as that of *helpless widower*" (Murray, *The Gleaner* 3:219). Judith believed participation by women in household finances was not only good for the family, but good for the republic. That she was left nearly destitute from her marriage to John Stevens she blamed on her inability to obtain a better education. She writes "the more we multiply aids [i.e. education] to a family, the greater will be the security, that its individuals will not be thrown a burden on the public" (Murray, *The Gleaner* 3:220). Judith used the Enlightenment ideas of self-sufficiency and self-determination to

conclude that if women were allowed to be financially independent, they would not become destitute and create a duty for society to take care of them. She illustrates her thoughts on this matter in her play, *The Medium* (later renamed *Virtue Triumphant* and produced on stage in 1795), in which the heroine succeeds as a financial investor. Referring to this play, English professor Jennifer Baker has noted that "although many of Murray's writings concern personal, rather than public, credit relations, the two were inseparable for her. From personal financial experience women might . . . become exemplary investors in the future of the nation . . . even as public securities holders" (138-39). If women shared more of the financial responsibility that men monopolized, a more robust set of resources could be applied to ensure the nation's security.

Judith's religious conversion influenced her views about money, planting the seeds for her later view that both married partners could use reason for attaining financial success within the relationship. Despite the elite standing and privilege enjoyed by her family within the Calvinist First Parish Church in Gloucester, the Sargent family, including Judith, slowly started embracing the Universalist denomination as early as 1769. While Calvinists believed in predestination, that God had already

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decided who would be saved and who would be damned, the Universalists embraced equality, believing everyone would be saved. Judith went further, to interpret the Enlightenment precept of equality within the Universalist Church to apply to equality between men and women. She wrote to one, probably Universalist, minister, "I have conceived that the distinction male, and female, does not exist in *Mind*; and it appears to me that my opinion is sanctioned by the imposing authorities of nature, reason, and scripture" (*Judith Sargent Murray Papers* (hereafter *JSM Papers*) 11:287). While the Universalists did not address equality between men and women directly, Judith boldly wrote (in response to a letter from a man) that God's "wishes [are] not circumscribed by sect, age, country, or even sex" (Murray, *The Gleaner* 1:159). This creative interpretation of her new religion freed her to dream about financial independence.

By 1774 the Universalist minister John Murray had emigrated from England and arrived in Gloucester to preach. When Judith married him in 1788, one and a half years after John Stevens died, she transformed her role in managing the family finances. John Murray wasn't any better at managing money than John Stevens; he had even been in a British debtors' prison before coming to America. But Judith learned from her previous marriage. Although she loved her new husband dearly, she was no longer shy about pointing out the financial situation. At one point she told him: "I regret you are not more uniformly attentive to your interest – at times you appear anxious, and sufficiently economical – but you seem to have no *fixed plan*" (*JSM Papers* 5:349). To Judith's delight, Murray appreciated Judith's offer to manage their money, since financial matters didn't interest him, and he trusted her.

Judith knew she was bold, and attempted to judiciously mitigate the impacts of her radical new role in her family's finances. She wrote to a Mr. J. that "Mr. Murray, willing to divest himself of embarrassing attentions, consigned to me the care of our little property" (*JSM Papers* 10:146). Judith endeavored to use words that would make her exchange more palatable for the male listener. She went so far as to devalue the extent of the financial matters she was handling, calling the transaction "embarrassing" and the property "little."

After the financial debacle of her first marriage, and the financial uncertainty of her second, Judith often obsessed about her new family's financial

sustainability. Shortly after her first child, Julia Maria, was born in 1791, she started to write for profit to supplement John Murray's meager income as a minister, an unusual circumstance for women of her place in society. Normally it was more genteel for higher class women to write without remuneration. But Judith also believed that compassion and philanthropy were important elements of financial responsibility. Although her always-precarious finances precluded her from direct charitable giving, she did perform numerous generous acts by taking in various family members' children either to live with her family, or be educated by her. In addition, the parents of Margareta, the heroine of her novella "The Story of Margareta," wanted to produce in their daughter "both theoretically and practically, a philanthropic moralist" (Murray, *The Gleaner* 2:88). She invented characters in her stories that displayed the compassion she longed to see happen more frequently in society than was her experience, especially regarding financial matters.

Judith lamented the lack of girls' and women's education to prepare them for financial responsibility. Sheila Skemp has noted that "Gloucester did not admit girls to public school until shortly before the Revolution, and then their education consisted of only the most cursory writing lessons, which occupied, at most, two hours a day" (Skemp, *Judith* 85). Although Judith had received more tutoring than a typical girl of her time, she complained often in her letters of not having had adequate schooling. Judith worried that girls were taught only to depend on marriage and trust that any husband would support them.

Judith also wrote about strategies for educating girls and women so they could take care of their own, and their family's, finances. She argued that girls should see marriage only as an uncertain event, and understand the importance of preparing for their own independence, a more rational prospect. Judith agreed with John Locke, who wrote that humans are born as a blank slate and need to be taught (1:9-10). She took this idea further to argue that boys and girls have equally blank slates with equivalent potential. In one of her most famous essays, "On the Equality of the Sexes," she compared women and men directly: "were we to grant that animal strength proved anything, taking into consideration the accustomed impartiality of nature, we should be induced to imagine, that she had invested the female mind with superior strength as an equivalent for the bodily

powers of man. But waving this however palpable advantage, for equality only, we wish to contend" (135). Judith asserted that women have more brains than men have brawn, but she was willing to settle for the notion that women have equality of mind. Judith wrote stories to show how education could put women on the right path to success financially, albeit within limits. In one section of *The Gleaner* (No. XVIII), two orphaned sisters, Helen (fifteen) and Penelope (fourteen), live with separate relatives after their parents' death. Helen spends her time on activities such as playing the piano and reading "sentimental novels," and has not received any financial guidance from her Aunt M----. By the time the girls are nineteen and eighteen years old, both sisters are given a hundred pounds by another relative. Helen spends her entire endowment giddily on a new dress. Meanwhile, Penelope, who has received financial guidance from her Aunt Dorothy, invests her hundred pounds the very next day, for the express purpose of obtaining "legal compound interest." Moreover, Penelope writes her sister that she takes in needlework for remuneration in order to pay for her dresses, because "independence hath been my ardent pursuit." By naming Penelope's aunt and not Helen's, Judith reveals which guardian she thought more effectively educated the young women. Although Penelope predictably succeeds in life, ironically, a compatible husband is her prize. Meanwhile, Helen's "dissipated manners . . . and [her] fondness for dress and show" deterred potential husbands, who conceived her "impossible to domesticate" (Murray, *The Gleaner* 1:172-179). This story shows not only how Judith valued the education of young women in financial responsibility, but also the limits to women's opportunities at the time, to which she herself was subject. Alas, in this story at least, financial independence for Judith is largely a path to a better marriage.

Judith's elitism blinded her to the financial problems of poor, or even ordinary, women. Because she valued her elite status so highly, she did not acknowledge that poor women were likely a product of their circumstance, often without choices. Her blindness to class dynamics gave her stories a one-dimensional, merit-based sensibility, blaming any woman who was not able to lift themselves up the financial ladder. Unlike Mary Wollstonecraft, who "thought that women could not achieve equality – even within marriage – unless the entire social order was transformed" (Skemp, *First Lady* 296), Judith

clung to her elite place in society as the only desirable condition. And the more her own economic position declined, the more she claimed her elite status.

Judith was tone-deaf regarding finance for women of different class backgrounds.

Judith's elitism also blinded her to the real obstacle opposing her efforts for financial independence: coverture. For Judith to retain the elite status in society she held to so fiercely, she had to accept the cultural expectations of women in America at the time. She did strongly believe that education could make a woman "independent," but because of her steadfast commitment to the status afforded by her class, her definition of independence was necessarily limited. Only in 1792 did Mary Wollstonecraft argue in her *Vindication of the Rights of Woman* (as summarized by Stanford Encyclopedia of Philosophy) that "women [should] be granted not only civil and political rights, but have elected representatives of their own" (Tomaselli, sect. 3). Although Judith supported Mary Wollstonecraft's work in concept, she did not adopt for herself the same advocacy for women's political activity. If Judith wanted to be truly financially independent, she would have had to protest the coverture laws, and even if she did harbor dreams of such an idea, she may have been among a very small number of women with that sentiment in her social circle. To protest would be a lonely endeavor.

JUDITH WAS TONE-DEAF REGARDING FINANCE FOR WOMEN OF DIFFERENT CLASS BACKGROUNDS.

However, Judith did ask thought-provoking questions that were radical for her time. For example, in her 1790 essay, "On the Equality of the Sexes" (two years before Mary Wollstonecraft's seminal work), she posed the question: "is it indeed a fact, that she hath yielded to one half of the human species so unquestionable a mental superiority?" (132). Even asking this question was a novel experiment and courageous venture for a woman during the late eighteenth century. And she opened her essay with this question, making it difficult to ignore, and more powerful than if it were buried in the narrative. At times Judith used humor to forward her ideas. She

asks on behalf of women, "is it reasonable, that . . . an intelligent being [i.e. woman] . . . should at present be so degraded, as to be allowed no other ideas, than those which are suggested by the mechanism of a pudding, or the sewing of the seams of a garment?" (Murray, "On the Equality" 134). Judith was radical for her time, albeit under the burden of historical tradition and the cultural norms with which she lived. In the first portion of Judith's writing career her reception proved favorable, although a dispiriting period developed later. During the 1780s and 1790s Judith received significant encouragement for her writing, although her essays, poems, and stories on the societal role of women were published under a masculine pen name. Martha Washington sought her out on at least two occasions when Judith and her husband John Murray were in town, and Judith met with Abigail Adams on multiple occasions as well. Interestingly, while Judith gregariously published her feminist writing for public consumption, Abigail Adams' writing on women's issues was confined solely to her personal letters. At the turn of the century, significant backlash against a short-lived emerging sentiment favorable toward women's rights hit Judith and her writing career hard. New popular and "scientific" information proclaimed definitively that "women's bodies were not just different from men's; they were inferior" (Zagarri 7). When Judith wrote the last of her three plays in 1804, it took three years to find a producer for the stage. By 1806, "scathing and ribald parodies of Murray, reminiscent of parodies of Mary Wollstonecraft, appeared in the Boston Columbian *Centinel*" (Vietto 103). Judith became discouraged by these cultural changes, and her literary output slowed considerably over the following years until her death in 1820.

When Judith was writing at her peak, however, she conveyed optimism for the future. She admired Mary Wollstonecraft, and projected in *The Gleaner* that for girls and women, "with proper attention to their education, and subsequent habits, they might easily attain that independence for which a Wollstonecraft hath so energetically contended" (Murray, *The Gleaner* 3:219). Little did she know how far women would progress, when she wrote that "I may be accused of enthusiasm; but such is my confidence in the sex, that I expect to see our young women forming a new era in female history" (Murray, *The Gleaner* 3:189).

From today's perspective, Judith Sargent Murray applied Enlightenment ideas to press for women's independence in personal and family financial

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FEMINIST VIEWS.**

matters. She probably gained her financial knowledge through her own initiative by "daring to know" (à la Kant), since her formal education was limited. Throughout her lifetime of challenges, she longed to educate other women through her writing, so they wouldn't have to go through the pain and suffering she experienced. And although she did not reflect all classes of women, her elite status did give her a soapbox from which to broadcast her feminist views.

Ultimately, Judith exhibited provocative creativity in her financial morality stories, and thrived in communicating her many ideas and pedagogy to both the public as well as her family, friends, and acquaintances. She was a woman ahead of her time, with a courageous and productive life.

ENDNOTE

* Judith Sargent Murray had two husbands and three last names. To avoid confusion, henceforth I refer to her as "Judith." I mean no familiarity, or to take liberties with my subject, in making this choice.

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WHAT WOULD IT MEAN TO WIN “AMERICA’S GOT TALENT”?

by Kim Navarro



“**W**hat would it *mean* to win *America’s Got Talent*?” some man behind some camera is asking, again. When my answer seems too lackluster for reality television he will repeat, “but what would it *mean*?” and grab at his chest, indicating where I might feel or at least find this meaning. My ice skating partner and I are part of the act “Aerial Ice” competing on the 8th season of the television show *America’s Got Talent* and the cameramen, so many cameramen, want good sound bites.

It seems expected that winning *America’s Got Talent* would mean so much more than winning *America’s Got Talent*. However, I have no idea what winning *America’s Got Talent* would mean, except in our case, one million dollars split seven ways over the course of forty years, minus taxes. So, maybe winning *America’s Got Talent* would mean a grande pumpkin spiced latte from Starbucks once a month until I was seventy years old. Or a weekly car wash. Or some fancy shampoo. What my skating partner and I have settled on is that if we can expose a larger audience to our beautiful sport of ice skating on a widely watched television show during a time when skating popularity is declining, we might generate some more interest in skating, and that would *mean* something to us.

But this idea of something needing to mean more than it meant felt all too familiar.

Growing up as a figure skater, you learn pretty quickly that going to the Olympics would be a big deal. When people find out that you skate, they ask excitedly, “oh, are you going to go to the Olympics?!” Other people--the ones who think they know a little something about skating-- will say with authority, “I know you’ll go to the Olympics some day!” They might even pinpoint the exact one: Salt Lake, Torino, Vancouver. Although you might not have a clear idea of what it would mean to go to the Olympics, it’s easy to understand that this Olympics thing means really good things.

Then, as you become a better figure skater, you learn that going to the Olympics would mean really good things, including a really good ending to some story. My first *U.S. Figure Skating Championships* with my partner Brent was in 2006, and therefore an Olympic year. The top three teams in our discipline, Ice Dance, would earn the three Olympic spots to the Torino Olympic Winter Games. Although Brent and I weren’t

particularly in the running for an Olympic spot that year, we did end up placing well enough in our first two events to make the television coverage for the final event. We were in fifth place going into the grand finale of Ice Dance, the Free Dance, and found ourselves in the final group of the night. Teams vying for an Olympic spot swirled around us on the ice, and likewise their stories whirled around the television coverage.

WE MISSED THE OLYMPIC TEAM BY A HANDFUL OF POINTS.

There was the girl who had overcome an eating disorder, the girl and the guy who had just received their U.S. citizenship in the ninth hour to be able to represent the U.S. in Torino, and the girl who had previously been skating with her brother, a brother she was very close to, who she thought of every day and this made her cry, a brother who you may have thought was dead until the cameras panned to him in the audience and he was happily clapping in support of his sister. Whichever one of these skaters made the Olympic team, you’d feel satisfied; their hardships leading up to this moment would have all been worth it.

My boyfriend, who watched the television coverage from our apartment back in Philadelphia complained, “You and Brent don’t have a story. One of you needs to lose a limb or something.”

Four years later, Brent and I were again competing at the *U.S. Figure Skating Championships* during an Olympic year, but this time an Olympic Team spot to the Vancouver Games was an actual possibility. We had placed third in the first portion of the competition and if we could keep this third place spot, we’d be heading to Vancouver. I remember thinking, *maybe this is our story: two American skaters with American coaches, sans eating disorder and with all limbs intact, make the Olympic Team!* Unfortunately, by the end of the competition, we had dropped to fourth place. We missed the Olympic team by a handful of points.

I didn’t know what that meant for Brent and me. If going to the Olympics meant nothing but good things, did not going mean nothing but bad things? Did we have a bad ending to a non- story? Were our skating lives, and our own lives, now pointless? We still had “worked hard” and “sacrificed a lot” for

the sport, like other skaters. We still rose before the sun to begin our first practice of the day. We still skated twenty hours a week. We still saw sports psychologists to work out any internal demons or problems in our partnership. And off the ice, we still saw personal trainers, worked with off-ice dancers, and curbed our social activities. I moved away from home and to Texas when I was sixteen to pursue the sport. Then moved to New York when I was eighteen, and then again to Philadelphia five years later. Were these things not worth it then because they would never get that validation of an Olympic trip?

“What would it *mean* to win *America’s Got Talent*?” yet another cameraman is asking. I know I am supposed to say it would mean that my eating disorder, or my newly acquired citizenship, or my long-distance relationship with my brother was all worth it. On this particular season of *America’s Got Talent* there is a gay singer who just came out to his parents, parents who say they love him just the same, and an acrobat who has been reunited with his freshly-out-of-rehab mother. My story needs to be of equal or greater value, but from what previous television packages have taught me, I don’t have one of these stories. Plus, I haven’t endured many hardships specifically for *America’s Got Talent*. So far, my main hardship has been embarrassment. I imagined other skaters asking, “any idea what Kim and Brent are up to these days, after failing to make the Olympic Team twice in a row?” And the answer, “Oh, yeah, they are now skating around on plastic ice and wondering if Howard Stern thinks their skating is better or worse than a dog walking backwards.”

“What would it *mean* to win *America’s Got Talent*?” the cameraman pushes.

I know what it’s supposed to mean, but I won’t say it: redemption from my failure to make the Olympics.

We take the Radio City Music Hall stage. It’s Tuesday night, it’s the quarterfinals of “*America’s Got Talent*”; it’s live television results. It’s our group, “Aerial Ice,” and three other acts, waiting to be told our fate.

However, it feels like we might already know it. On stage with us is Jimmy Rose, the coal mining, marine veteran, country singer, whose YouTube video has over a million hits already.

Host Nick Cannon instructs all the acts to come forward. Although he is standing only five feet away,

SO FAR, MY MAIN HARDSHIP HAS BEEN EMBARRASSMENT.

his voice seems to be coming from the heavens of Radio City. Or the depths of Radio City hell. Hard to tell with such earnest music playing.

“America has voted,” he announces. “The act going to the Semi-Finals is....” followed by the most inhumane pause.

“Jimmy Rose!”

When we hear this, we exit the stage, walk down the stairs, and go back to the first room we started in so many hours ago, when we were still part of the *America’s Got Talent* show. There wait for us boxes of cold pizza, along with our bags, change of clothes, and our return to pre-reality television show life. Jimmy Rose has stayed on stage to answer some questions about what it means to advance to the Semi-Finals.

“Not this shit all over again,” our old skating coach, Cheryl, texts me.

I know what she means, or how she feels. It feels similar to that night three years earlier when she watched us fail to make the Olympic team. Attention immediately turned to the successful while the others are left to eat cold pizza.

That familiar sensation hits my gut, or my stomach, or whichever organ stores all the tissues and cells that make up that combination of embarrassment and guilt. I grab a piece of cold pizza and sigh.

I sigh, knowing that soon my embarrassment will subside. And sigh knowing that the guilt I am feeling for possibly letting people down is a bit narcissistic. I sigh knowing that soon Cheryl will feel less upset, and sigh knowing that soon no one will care anymore about this moment. I sigh knowing that I know a thing or two about this now.

Because if there is anything I have learned, it is what it *means* to *not* do something. And not doing something doesn’t mean everything bad, like I had feared years before. It means that the next time you don’t do something, you change into some regular clothes, eat some cold pizza, and realize that releasing that desire for a redemptive ending is a sort of redemption in itself.

MY MOTHER'S FACE MASK

by Jué Lin

I loathe the 200 yards between the shuttle bus stop and Village Express chairlift. I have made that walk so many times, but it never gets easier. At 6,300 ft elevation, each step is a bit of a challenge, but this year, these steps feel longer: in addition to carrying the awkwardly heavy skis and fighting against the terribly stiff ski boots, I am also wearing a face mask which makes every breath even more labored. Signs declaring the seriousness of the resort's policy are placed every 10 steps: "Face Covering Is Required." Some of the letters look smudged from behind the fogged goggles. Struggling on, trying not to trip or skid, I make small movements with my mouth in the attempt to nudge away the cold droplets of condensation that are quickly building up inside the face mask as the warm breath meets the cold air. I am suddenly reminded of my mother, who is a serious asthmatic living in the crowded city of Shanghai, and thus, a life-long mask wearer. I had never thought about what it was like for Mom to wear a face mask as a matter of regular necessity. Does she just accept it as the price of continued respiration, or does she, like me, grow frustrated at times and think of abandoning the practice?

I HAD NEVER THOUGHT ABOUT WHAT IT WAS LIKE FOR MOM TO WEAR A FACE MASK AS A MATTER OF REGULAR NECESSITY.

My mother shares the air of the great city of Shanghai with 25 million of its people. She never gets to take breathing for granted, in the same way that we now have to think about the consequences of the next breath. I now understand the lessons of her routines and know the annoyances she tolerates wordlessly.



Whenever I think back on childhood, two images stand out to me. The first is Mom taking a deep breath as she presses on her inhaler. The inhaler releases a hissing sound from the pressure. She coughs and breathes out deeply, the hissing of the inhaler replaced by the fainter hissing from her breath. She always seems to feel better after that as if someone has just hit a reset button. The very act of breathing again is something considered urgent, yet not always assured. The second image, more ubiquitous and powerful, is my mom's mask.

For as far as my memory goes, Mom has always worn a face mask on various occasions. If the inhaler is her lifeline, the face mask must be the full metal jacket that she puts on to try to stay alive. There is a little hook by the entrance of our family apartment and Mom's face mask hangs on that hook. The face mask gets used regularly in winter. Shanghai's winter is not pleasant. Damp cold air chills one to the bone. My mom somehow is extra sensitive to any slight sharpness in the air. Her face mask is also fashioned whenever things get dusty, like spring cleanings and seasonal closet turnovers. (Our apartment was so small that we would only keep seasonal clothes and beddings out and stow away items that were not for current use.) So, whenever cold or dust is involved, her whole respiratory system would kick into overdrive and the fit of sneezes and coughs would attack out of proportion to what seems to be called for.



I used to complain about her sensitivity as if she intended to be unnecessarily fragile, not fully realizing the peril and ordeal of what simply breathing was for her. Most of the family, my father included, who is also a medical doctor, generally dismissed Mom's face mask wearing habit as unnecessary outside of the hospital. After all, none of us wore one. In retrospect, if more of us wore face masks, Mom would probably have felt even safer. At least she wouldn't feel like an exception. My mother eventually got lung cancer despite the inhaler and the face masks. She does not smoke. Neither does my father or anyone else close to us. But I guess the life-long cumulative effect of inflammation from asthma, coupled with living in a city of millions of people spitting, burning coal and buses emitting diesel ultimately prevailed over her self-protection with face mask wearing. Ironically, my mother specialized in studying lungs as a Pathologist. I sat in on one of her seminars when she demonstrated a full body dissection in front of a lecture hall of medical students. According to the school ethics rules, professors and students were not allowed to wear face masks during these sessions, nor hold their noses. Has anyone smelled the odor of a deceased body when it was cut open? I have. It is the most memorable smell of utmost unpleasantness

even from the back of the lecture hall. My mother, standing next to the cadaver, giving demonstration of the procedure and lecturing on the diagnosis of the cause of death, did not flinch. Now when I think back on that, I wonder how much the smell must have irritated her respiratory system. Since the start of COVID-19, I have acquired at least 10 different varieties of face masks. Some are fancy with designer patterns. Some have inserts for filters. Some are gifts from a friend of the home-made variety. Two boxes are children's masks from a special project that a friend undertook to procure kids face masks from China – it was very difficult to find kids mask at the beginning of the pandemic. My husband wears the black cotton ones exclusively. I have neck gaiters that are "made to move." One of the special face masks I have is a scarf with a secret built-in mask. The sales pitch on the scarf is that it is a smart dual-purpose accessory, but the real reason I got it was to use the scarf as a disguise for the mask. Admittedly, I acquired the scarf early in the pandemic when I felt terribly judged for wearing a face mask in public. There was great confusion and a belief that we only wear masks if we were ill. On Monday, March 16, 2020, Californians were ordered to "shelter in place." I dashed out to the grocery store, donning a face mask, to partake in the

**I DON'T RECKON
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BEING USED MUCH
THESE DAYS AT ALL.
BUT I KNOW IT IS
STILL HANGS ON
THAT LITTLE HOOK
BY THE FRONT DOOR
WITH MY DAD'S MASK
NOW ADDED TO THE
DISPLAY.**

panic shopping spree. While standing in a long line at the meat counter, it was apparent that I was an odd sight wearing a face mask. I kept tucking the face mask away and at one point apologized to the person behind me, saying to her, "Please don't worry about the face mask. I really am NOT sick." She looked at me, not giving any sign of acknowledgement. I felt silly as well as sheepish, wearing a face mask. Such was how I felt about wearing a face mask in those days. Nowadays, I do not go out without a face mask. My go-to ones are the plain disposable face masks. By count, I have more than 150 face masks laying around in the house at any given time.

My mother only ever has had one kind of face mask: the thick multi-layered white muslin cotton kind. She has a couple of them on hand at all times. She washes them and reuses them. Since tightly woven muslin cotton is so durable, I don't think she has even gone through ten in her entire life. That suits her just as well. Frugal by nature and as a result of living the first half of her life with little means, she is quite exultant at extracting a long useful life of her face masks.

At age 85, Mom doesn't go out much anymore. There are more modern comforts in their apartment now. The top-of-the-line air purifiers keep the air clean and the heaters keep the apartment warm in the winter. So, I don't reckon her face mask is being used much these days at all. But I know it is still hangs on that little hook by the front door with my dad's mask now added to the display.

The last time I saw my parents was more than a year ago when I traveled back to Shanghai for four days

at the end of December 2019. They were so happy to see me even though it was just for four days. I, too, felt good about myself for going: it felt like a valiant effort on my part to travel so far to visit them for such a quick trip, fulfilling a sense of filial responsibility. Now, I wish I had stayed much longer. As soon as circumstances allow for non-essential travel again, the first trip I will take is to go see my mom in Shanghai and stay there for as long as I can afford. I will find all kinds of reasons to take her out. I will be sure to hand her the face mask as we go out, while I put on one of my many fancier ones. I suspect none of my masks will function any better than her simple white-muslin mask, but I will gladly put one on anyway, just like her. I get it now: breathing matters.



Painting from MLA student Aparna Chandra

TRUE STATE

by Prabhu Palani

I was somebody
Until I left the four walls
Of my home
The perimeter of
My village.
'Likes' on the web
Masquerading as
Friends.
Some foolish desire
To equate with
Belonging to a tribe of
Somebodies.
Mere folly.

Nothingness
Like the Black Hole
In the middle of the
Milky Way.
Even supernovas
Disappear into
Darkness
Our true state of
Nobody.
Consumed by the
All encompassing
Within and without.
Grand illusions
Rectified by time.

Sometimes brilliant
Clarity piercing through
The grey stuff in my mind
Pouring out wisdom
I didn't know I possessed.

Sometimes kind
Blood rushing to
My narrow heart
Embracing an unlikely
moment
I normally shy away from.

Sometimes funny
Humor cells
Tickling my bones
A laugh from my friends
I rarely produce.

Sometimes sad
Tear glands
Producing droplets
Of unlikely sadness
For a stoic soul.

Sometimes cruel
Dispassionate and
unmoved
Sadness all around
Glancing off
My cold visage.

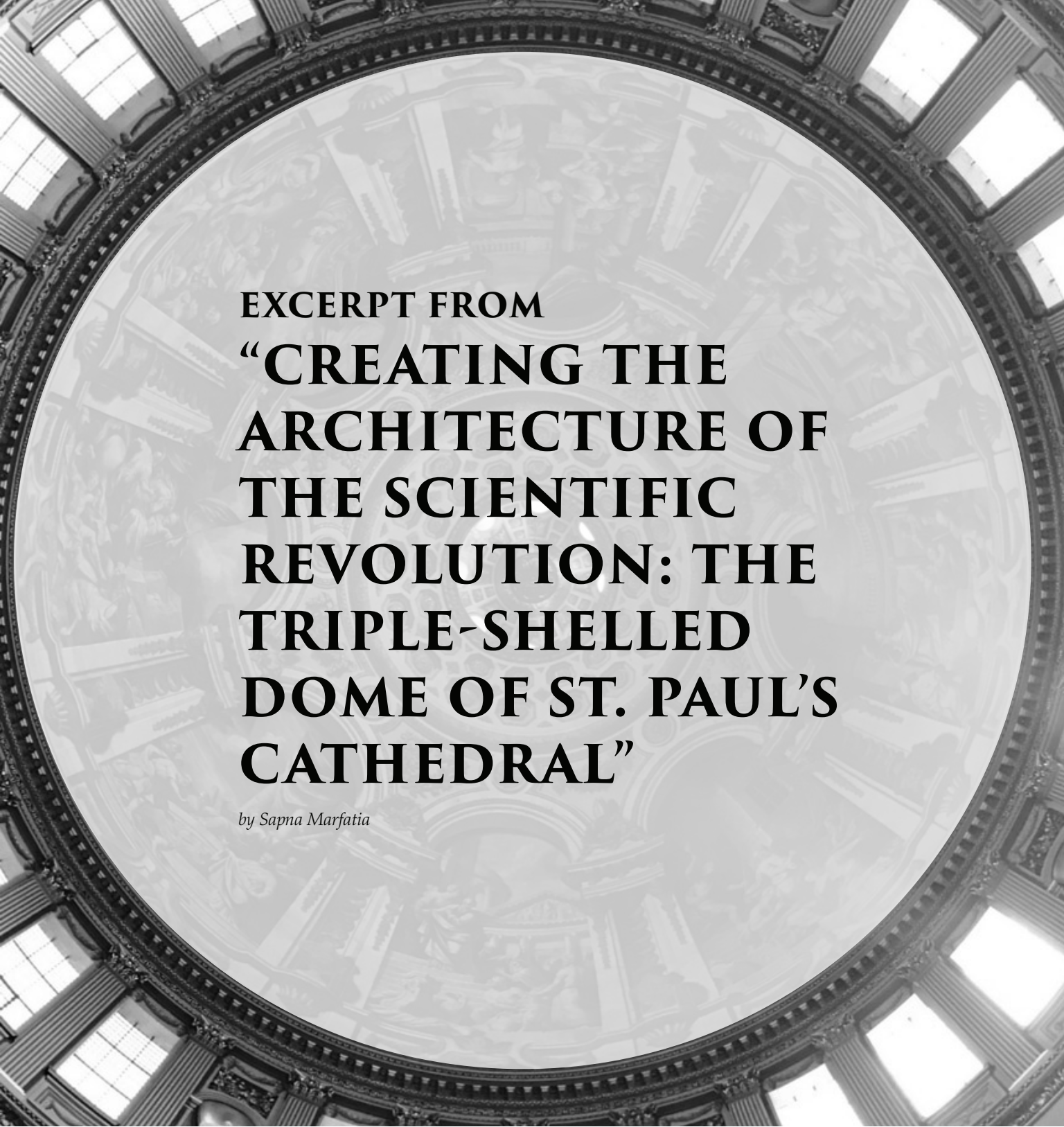
At all times human
Spirit and emotion
Proportions uniquely
Concocted
My view own Iris.

REAL ID

by Prabhu Palani

Painting from MLA student Aparna Chandra





**EXCERPT FROM
“CREATING THE
ARCHITECTURE OF
THE SCIENTIFIC
REVOLUTION: THE
TRIPLE-SHELLED
DOME OF ST. PAUL’S
CATHEDRAL”**

by Sapna Marfatia

St. Paul’s Dome, London. Source: Author Sapna Marfatia, Fall 2019

Note to the Reader: Below are a series of excerpts from my paper “Creating the Architecture of the Scientific Revolution: The Triple-Shelled Dome of St Paul’s Cathedral” which compares the Cathedral’s dome to other exemplary dome designs and highlights the innovation and pioneering contribution of this dome frequently overlooked. This sample includes introduction, analysis of the St. Paul’s Cathedral’s intermediate dome, conclusion and series of reference graphics from sections excluded in this excerpt.

Between 1540-1680 AD Europe was transformed by what historians have called the Scientific Revolution, a period of epistemological and intellectual renaissance characterized by inquiry through experimentation. The Scientific Revolution was architecturally bracketed by the dome designs of St. Peter's Basilica (1506-1590 AD) and St. Paul's Cathedral (1675-1697), which span a period of 150 years. Central to Wren's career, St. Paul's Cathedral also commands the architectural and cultural history of Europe. The celebrated dome appears to be a collaborative effort between two members of the Royal Society: the chief architect Sir Christopher Wren (1632-1723) who redesigned London and approximately fifty of its churches, and the city surveyor Robert Hooke (1635-1703) known as "London's Leonardo" because of his diverse talents.¹ This crowning dome exemplifies the progressive scientific thought associated with its time, it deceptively appears aesthetically entrenched in antiquity and obeys the rules of order and composition established by the Greeks and Romans.

Superficially, the dome of St. Paul Cathedral

appears conservative and regressive, but a closer examination reveals a transformative and progressive architectural paradigm which represents its time and correspondingly a pivotal moment in the history of English architecture shaped by the Scientific Revolution. Domes are complex, sophisticated structures and stand at the intersection of engineering, mathematics, geometry and proportions, therefore, understanding their technical ethos and not just the aesthetics is crucial. A comparative analysis of St. Paul's Cathedral with some of Europe's most famous domes unlocks the innovative nature of its design. Hooke's contribution to the dome is indirect but is indispensable and though Wren is criticized as a conservative and pragmatic figure, contextual analysis reveals the intellectual and aesthetic influence of the Scientific Revolution propagated by his innovative dome design. Just as the Pantheon became the hallmark of Roman engineering and Brunelleschi's dome symbolized the Italian Renaissance, St. Paul's dome epitomizes the zenith of the Scientific Revolution and its influence thereafter.

**THIS CROWNING
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ASSOCIATED
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ANTIQUITY AND OBEYS
THE RULES OF ORDER
AND COMPOSITION
ESTABLISHED BY THE
GREEKS AND ROMANS.**



St. Paul's Cathedral from The Shard. Photo by Author, Fall 2019

To peel back the exterior to examine and grasp the teleology of the elements underneath, just as a scientist would remove a specimen's skin to uncover its anatomy, was the essence of the Scientific Revolution which transformed society's view about nature. Wren created a triple shell architecture that symbolically mimics the human skin, skeleton and heart. The inner dome is the heart of the design, perceived from the interior it has a human scale compared to the outer skin dome, which responds to the city scale with a dominant position in the London skyline. The intermediate shell between the outer and the inner acts like a skeleton and supports a lantern.ⁱⁱ Similarly, the materials of the three shells respond to their specific functions and dynamic and static loads. The inner dome is robust whereas the outer skin is the lightest and the intermediate brick conical shell only transfers weight. Therefore, to grasp the innovation of St. Paul's dome - a product of its time - it is essential to exfoliate the dome and examine each layer individually.

THE INTERMEDIATE SHELL OF ST. PAUL'S CATHEDRAL: INNOVATIVE

The shape, function, and conception of the intermediate shell of the St. Paul's dome exemplify the exchange of ideas characteristic of the Scientific Revolution. Wren's technical execution of a traditional aesthetic actually reveals the innovation that he achieved. Of the three-layer configuration of the dome, the structural stability of the entire dome configuration can be attributed to the intermediate shell. In order to grasp the entirety of the innovative design, it is important to comprehend the role of this shell in the transfer of gravity loads, and the resistance against outward thrust of the base drum and the lantern at the top. Lisa Jardine Wren and Hooke biographer examined their friendship and discovered, "it is difficult to decide whose was the greater creative contribution."ⁱⁱⁱ St. Paul's invisible innovative dome design is an outcome of a collaborative relationship between the friends, for their partnership obtained better results than they could "have achieved individually."^{iv}

In 1671, Hooke announced to the Royal Society that he had "mathematically and mechanically" perfected a solution for building stable arches. According to him a suspended chain's natural shape under the tension of its own weight is structurally equivalent to an arch in compression. In 1675, he published these findings listed as inventions "useful to Mankind" in the form of an

anagram in the appendix to *A description of helioscopes and some other Instruments*.^v Hooke compared a suspended chain and a masonry arch and concluded "*ut pendet continuum flexile, sic stabit contiguum rigidum inversum*," which meant "as hangs a flexible line, so but inverted will stand the rigid arch;" Hooke posited that the funicular shape caused in tension or compression respectively by "both the hanging chain and the arch must be in equilibrium, and the forces are simply reversed."^{vi} Hooke's claim that the catenary curve is the most stable shape was published in a cryptic anagram which did not elaborate the reason for the stability. Furthermore, this breakthrough concept was only published after his death in 1703. However, Wren seems to have implemented Hooke's concept in the form of a brick shell, which further transforms into thin reinforced concrete shell construction in future centuries.^{vii}

Equilibrium in the dome of St. Paul's Cathedral is achieved through two aspects of design that interact: structure (thrust, loads, compression and tension) and form (geometry and proportions), creatively resolved through the intermediate funicular brick shell.^{viii} During the final years of construction, the half-built cathedral began sinking due to poor soil conditions. A massive stone dome and lantern as originally designed could not be supported on the original foundations without the fear of collapse. Wren had no option but to strengthen the foundation and reduce the weight. He feverishly worked and explored many options to finalize the dome design between 1690-1706. Earlier designs show a double dome, whereas Wren's hand drawn sketch from c.1705-1706 currently at the British museum, demonstrates a lighter solution.^{ix} The sketch provides evidence of Wren's intent to introduce a third layer in between the two existing domes, a modification of the original double dome design; through the insertion of an intermediate funicular shell also known as the catenary, a triple dome was created to support the 850-ton gold lantern with its ball and cross. This conception and application of this curve is an outcome of the Scientific Revolution.

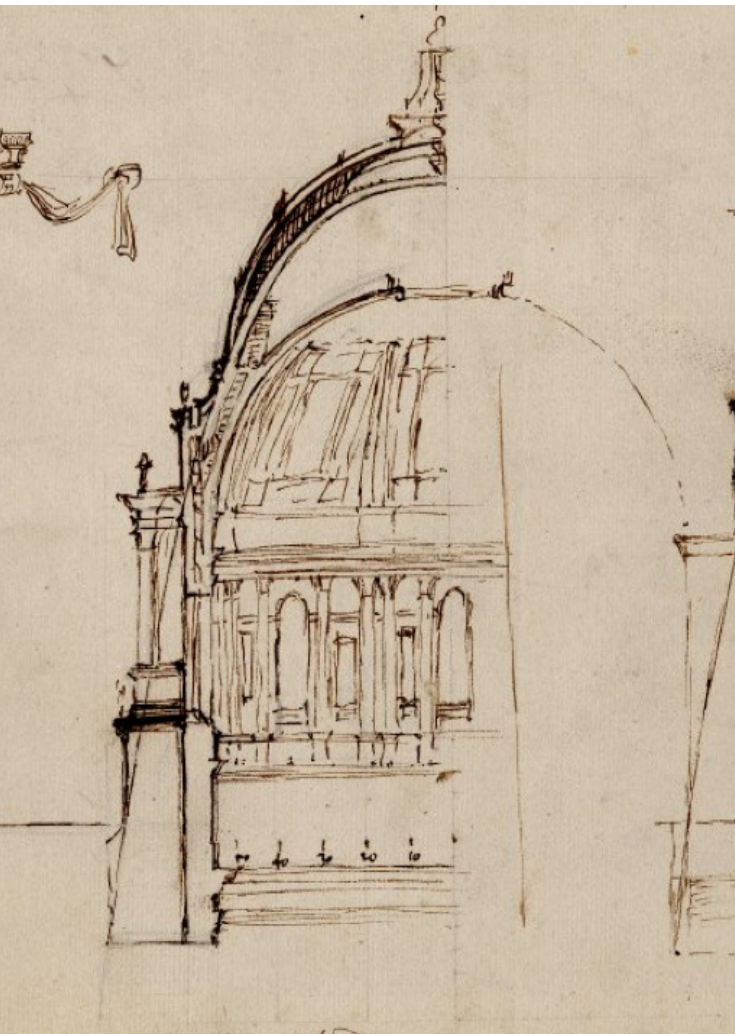
The Roman arch rediscovered and reinterpreted during the Renaissance continued to be revised during the Scientific Revolution. The strong influence of the double shelled dome of St. Peter's and the Florence Cathedral is evident in the double dome design of St. Paul's cathedral, for it is well documented that Wren studied drawings of the two previous domes.^x Wren was compelled to fundamentally change the double dome to a triple dome during construction because of soil failure.

Since the dome physically changed only after Hooke's death, his direct influence is inconclusive. The improved catenary curve could be attributed to a collaboration between Wren-Hooke or Wren-Edward Strong, the master mason who worked on the mock-ups of this shell with Wren. Still, it is most probable that Hooke was the inspiration even if not a full contributor to the final modifications. Regardless of the origin of this idea, the act of inserting an intermediate dome is undoubtedly Wren's for which he should be fully credited.

While many critics view Wren's dome as a mere improvement compared to the ingenuity of the great Renaissance dome in Florence by Brunelleschi, when each layer of St. Paul's dome is stripped and examined individually, the design innovation is undeniable.^{xi} Wren's dome solution is deeply rooted in the essence

of the Scientific Revolution; each layer of the triple dome individually responds to a specific function. Two complex systems interact to create a stable dome: load transfer and dimensions. The outward thrust induced by an arch is reduced by the pointed shape and counteracted by equivalent and opposite compressive forces at the base thereby determine the dimension and design of the thrust resisting buttresses. Separating the acting forces and the means of their transfer to the drum below, the intermediate dome's main function in practical.

By contrast, the outer and inner domes are present for visual effects. The inner dome for St. Paul's Cathedral emulates the Pantheon's classical dome, which has led many critics and historians to mischaracterize Wren as conservative. Wren's recreation of a classic outer dome for St. Paul's Cathedral has also been criticized as a



WREN'S DOME SOLUTION IS DEEPLY ROOTED IN THE ESSENCE OF THE SCIENTIFIC REVOLUTION; EACH LAYER OF THE TRIPLE DOME INDIVIDUALLY RESPONDS TO A SPECIFIC FUNCTION.

Wren's hand drawn sketch (1705-1706) shows the modification of the dome from a double shell (left) to a triple shell (right). Reproduced courtesy of the British Museum, London. CC BY-NC-SA 4.0



"Catenary Arch Supports" by Helga's Lobster Stew is licensed under CC BY 2.0ⁱⁱⁱ

lapse of innovation in English architecture. In comparison to the heft of the Renaissance masonry domes, St. Paul's outer dome is an illusion of masonry construction. The dome is made of 32 ribs and panels of thin lead skin supported on a timber frame construction. Historians have categorized this as a "deception" because the exterior appearance is modified while the real dome is hidden.

Since Wren concealed the triple-dome structure within an outer skin, the interior and exterior are unrelated. Undoubtedly, looking at the design superficially, especially applying current values of "architectural morality" based on the honest expression of structure and material, St. Paul's can be harshly judged.^{xiii} Mark Roberts compares St. Paul's concealed structure to the honest rib and brick expression of Florence Cathedral. He claims that Wren was not as successful in the "application of theoretical principles to the solutions of building problems."^{xiv} He co-relates the importance of building technology in the formal stylistic development, symbolism and iconography of architecture and points to Wren's dishonest use of architectural elements to hide the structure.

Admittedly, Wren's conservative regression to Greek and Roman principles and the replication of the Pantheon-like inner dome is controversial but provides appropriate scale to the visitor. Similarly, the outer dome's massive masonry appearance creates a memorable and aspirational presence along the London skyline, whereas its thin lead skin construct supported on timber trusses is a clever deception. It conceals the intermediate shell, which is the most innovative aspect of the triple shell design. The funicular form is appropriate for its function, as it efficiently transfers the entire weight of the heavy lantern to a 32-wall buttressed drum. Combined the three layers function as a single entity; simultaneously each triple dome

component accomplishes its specific function through its appropriate design.

Critics and supporters are divided on their opinion of St. Paul's dome and Christopher Wren's achievements. James Chambers claims, "Wren was to architecture what Shakespeare was to literature."^{xv} Similarly, considering Wren's vast body of work and his single handed redesign of London, Ralph Dutton credits Wren as a man of "rare talents of both carrying out vast schemes and of attending to minute detail."^{xvi} But John Summerson, an expert on 16th and 17th century British architecture and Wren's foremost critic, posits that "scientist intellect clipped the wings of [Wren's] imagination."^{xvii} Architecture according to Summerson is an "art and not merely one of the simpler branches of technics," therefore complete coordination between intellect and imagination is mandatory for creativity, unachieved by Wren "in a greater degree, perhaps, than we care to admit."^{xviii} While historians' views of St. Paul's dome and Christopher Wren are paradoxical, they have all failed to fully contextualize Wren's achievements within the period of the Scientific Revolution.

Individually analyzing the design of each dome, and then looking at the three domes together as a single entity reveals the criticism Wren received for a lack of imagination is unfounded. Combined the three shells function as a single entity; simultaneously each component of the triple shell dome through its appropriate design accomplishes its specific function. The Scientific Revolution was the age of dissections and dissecting Wren's dome to reveals it to be a true representation of the Scientific Revolution. The triple dome solution is at once the most rational design and a very creative response, a product of the Scientific Revolution and a symbol of its influence thereafter.

ENDNOTES

- ⁱ J A Bennett, Richard Nichols, and Lisa Jardine have all researched Robert Hooke and have characterized him as a man with a brilliant mind not adequately credited. Robert Hooke is to the Scientific Revolution as Leonardo da Vinci was to the Renaissance.
- ⁱⁱ A lantern in architecture means an erection, either square, circular, elliptical, or polygonal, on the top either of a dome or of an apartment, having the sides pierced, and the apertures glazed, to admit light; a similar structure serving as a means of ventilation, or for any other purpose. "lantern, n." *OED Online*. Oxford University Press, Web. Accessed 17 December 2016.
- ⁱⁱⁱ Lisa Jardine, *The Curious Life of Robert Hooke: The Man Who Measured London*. London: HarperCollins, 2003. Print. p. 14.
- ^{iv} Richard Nichols, *The Diaries of Robert Hooke*, p.143 writes that Wren is mentioned 800 times in Hooke's diary, whereas an inspection of Wren's Parentalia, reveals that Hooke is mentioned sparingly. Therefore, Hooke's role in the design of the intermediate dome cannot be claimed definitively. For an opposing view see Matthew F Walker's "*The Limits of Collaboration: Robert Hooke, Christopher Wren and the Designing of the Monument to the Great Fire of London*," which claims that Wren and Hooke had a professional relationship and Wren has been erroneously credited for Hooke's designs.
- ^v Robert Hooke, *A Description of Helioscopes, and some other Instruments made by Robert. Hooke, Fellow of the Royal Society*. Philosophical Transactions 10.118 (1676):435. Printed by T. R. for J. Martyn. p. 31 Web < http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2003&res_id=xri:eebo&rft_id=xri:eebo:image:58684 >
- ^{vi} P. Block, M. DeJong, & J. Ochsendorf, *As Hangs the Flexible Line: Equilibrium of Masonry Arches*. Nexus Network Journal 8(2), 13–24 (2006). p.14 Web < <https://doi.org/10.1007/s00004-006-0015-9> >
- ^{vii} *Domes: Papers Read at the Annual Symposium of the Society of Architectural Historians of Great Britain*, 2000. Dorking, Surrey: Published by the Society of Architectural Historians of Great Britain, 2000. Print. p.1-14 & p.75-79.
- ^{viii} Alexander Hahn, *Mathematical Excursions to the World's Great Buildings*. Princeton: Princeton University Press, 2012. Print. Preface.
- ^{ix} Anthony Gerbino, and Stephen Johnston. *Compass and Rule: Architecture as Mathematical Practice in England, 1500-1750*. New Haven [Conn.: Yale University Press, 2009. Print. This date is recorded differently as per my research. The British Museum entry of this sketch is dated as 1705-1706 whereas *Compass and Rule* records the date as c.1690 p. 101. Additionally, *Compass and Rule* provides another sketch by William Dickinson dated c. 1696-1702 which demonstrates that Hooke's catenary curve was implemented at St. Paul's before his death. p.163. Also see p.182 for full discussion and catalogue entries of various drawings and experiments to link Hooke's theory and design modifications.
- ^x Christopher Wren, *Parentalia* p. 291 comparing domes, p.356 theory on arches.
- ^{xi} Ross King, *Brunelleschi's Dome: The Story of the Great Cathedral in Florence*. London: Chatto & Windus, 2000. Print. & Giovanni and Michele Fanelli. *Brunelleschi's Cupola: Past and Present of an Architectural Masterpiece*. Firenze: Mandragora, 2004. Print.
- ^{xii} P. Block, M. DeJong, & J. Ochsendorf, p. 13
- ^{xiii} Robert Mark, *Modelling Architectural Structure: Experimental Mechanics in Historiography and Criticism*. Springer 1982, Web. p. 366.
- ^{xiv} Robert Mark, *Light, Wind, and Structure: The Mystery of the Master Builders*. Cambridge, Mass: MIT, 1990. Print. p.167.
- ^{xv} James Chambers, *Christopher Wren*. Phoenix Mill, Thrupp, Stroud, Gloucestershire: Sutton Pub, 1998. Print. p. 103
- ^{xvi} Ralph Dutton, *The Age of Wren*. London: Batsford, 1951. Print. p.12
- ^{xvii} Summerson qtd. in Kerry Downes. *The Architecture of Wren*. London: Granada, 1982. Print. p. 23
- ^{xviii} John Summerson, *The Mind of Wren, Heavenly Mansions and Other Essays on Architecture*, New York: Norton, 1998 (originally published 1936). Print. p. 51.

QUEUING IN THE VESTIBULE OF HELL, CANTO III OF DANTE'S *INFERNO*

by Eileen Avila

In March 2020, when state and county government officials told us to shelter-in-place and rely as much as possible on virtual technology, I thought the days of tediously waiting in a queue would be over. But I quickly realized that the queue is a malleable form. Perhaps, in the COVID-19 pandemic early on, most stressful were the queues at the grocery store, both inside and out. Standing outside my neighborhood grocery on a cold and cruel April morning, shielded by protective mask and gloves, I easily imagined a swarm of locusts, wasps, and cicada reminiscent of Dante's *Inferno*, rushing in to pierce my skin and drink my blood. And instead of relief from my anxiety upon entering the store to fill my cart, I felt more desperation as I faced empty shelves. Following the blue directional arrows on the floor through the store and waiting at the alternating red lines approaching the checkout counter, I sadly realized that even though I was finishing with this queue, I was only pausing for a short while before standing in another. My real-life experience of navigating multiple queues brings to mind a similar scene in William Blake's *Divine Comedy Illustrations, The Vestibule of Hell*.

In Plate 5 of his *Vestibule of Hell*, Blake's visual language depicts a series of four queues, divided by the River Acheron, progressing back and forth: first, the line of the uncommitted, "who lived without disgrace and without praise" (36) being led by a demon through the swarm of locusts and worms beneath their feet; second, the fearful throng waiting on the platform adjacent to the River Acheron to board Charon's boat to Hell; third, the forlorn shades dropped off by Charon, queuing to enter Hell and finally, the neutral angels en masse across the top of the illustration looking down at the throes of the deceased in the Vestibule of Hell. In one static shot, Blake captures the action of Dante's Canto

III. He does so admirably, albeit filtering through a less judgmental lens than Dante's almost five hundred years before. But the sharpest distinction between Dante's writing of "tumult that will whirl/ forever" (28-29) and the artist's soundless vision of desperation is the silence of the illustration, which allows Blake to express more clearly than Dante the suffering of those cut off from their humanity. Enough remains of their former selves for the viewer to grieve their loss.

In *Canto III* of Dante's *Inferno*, Virgil tells Dante, the pilgrim, to largely disregard those in the Vestibule of Hell--"disdain them;...look and pass" (50-51). But Dante's gaze lingers—he looks because he cannot avoid hearing the sounds of their suffering: "Here sighs and lamentations and loud cries" (22) and "accents of anger, words of suffering,/ and voices shrill and faint" (25-26). Lacking the means to express sound, Blake, the illustrator, expresses the emotion of the shades in his depiction of their forms. This results

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in Blake and his viewers not only stopping to look, but entering into his vision of the shades' human suffering. There are no distractions of noise—the members of the groups do not converse, the swarm of locusts do not buzz, the wind on the river does not swish, and the hell fires do not crackle. Rather these physical elements that normally give rise to sound serve as a backdrop for the queues of shades and angels, expressing through the artist's depiction of their body language, the hopelessness of their situation.

Whereas in *Canto III*, the pilgrim edits the shades' complaint to make them appear whiny and deserving of punishment, the artist's portrayal keeps intact the dignity of their human suffering, even as they advance towards the entrance to Hell. Unlike the pilgrim Dante, who only sees one group of shades looking over his shoulder, the viewer sees clearly in Blake's illustration the different

narratives of each line of shades described in *Canto III*. In the foreground of the work, the viewer sees a group of five people, cowering and covering their eyes to ward off the large insects flying overhead and to avoid seeing the snake-size worms gnawing at their feet. They are flanked by two attractive royal

women. At the head of the line in the bottom left corner of the illustration is a dark heavily muscled demon, signaling the way with a red banner. Both the demon and the royal woman nearest him are armed—he with a sword and she with a dagger seemingly suspended in the air in front of her left thigh. This woman and others in the line seem to be dancing a futile incantation of escape. Dante's guide Virgil asserts that their indecisiveness, their failure to commit, was their fatal flaw forcing them to spend

eternity betwixt Heaven and Hell. But the characters depicted here retain agency shown by the prospect of raising up a dagger and dancing away the curse that has landed them here in the Vestibule of Hell. There is resistance and hesitation to accept God's fate for them.

In *Inferno*, Dante and his guide Virgil next move towards the bank of the River Acheron. Although Blake's positioning Dante the pilgrim in

the righthand bottom corner of the illustration has restricted Dante's view to what can be seen by looking over his shoulder, the artist enables the viewers to witness much more of the action of the canto. Our eyes wander to the center of the picture. To the right, we see another group of sinners waiting

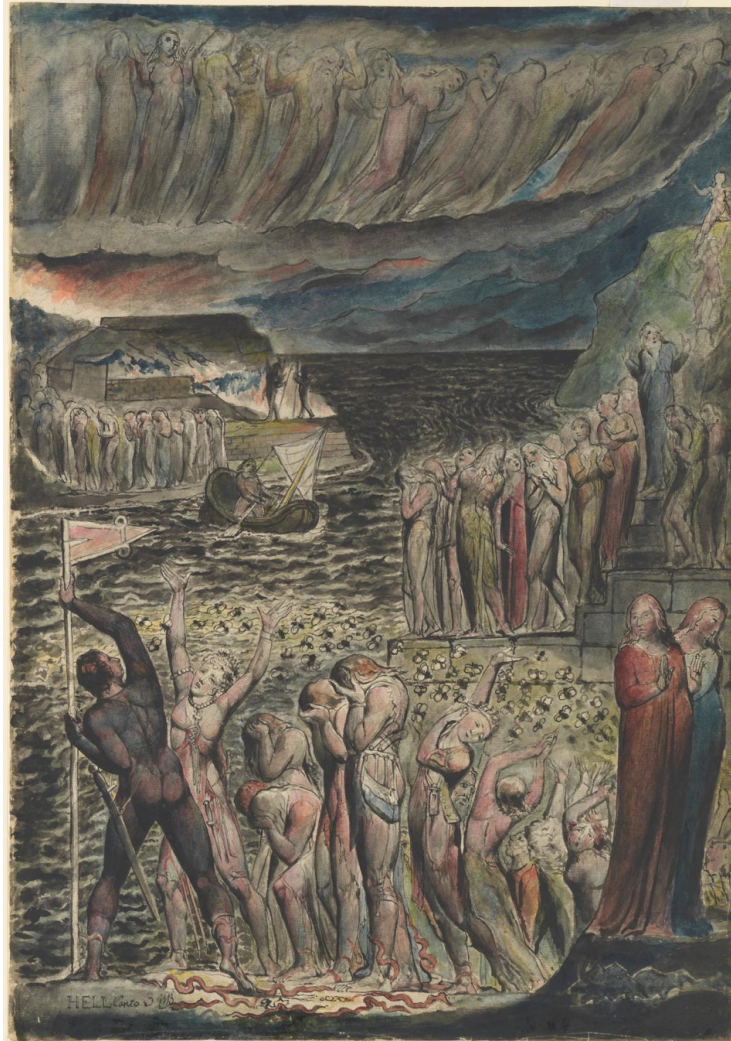


illustration for *The Divine Comedy* by Dante Alighieri (*Inferno III*, 22-83) William Blake

their turn to travel into Hell. Whereas, in *Inferno*, they are described as “eager for the crossing,” (74), here they are instead frozen with fear. Blake depicts this queue coming down the steps until they reach the platform next to the river—some of them clasping their hands in prayer. Their line of sight is directed to the entrance to Hell, represented as an unfinished building partially obscuring a gaping hole of flames. The shades waiting on the platform are frozen in place—one looking up, some looking back, some looking away. The seven or so figures at the front of the platform are sculpted into one dying mass rather than animated individually with paint. Despite Virgil’s words that they desire divine retribution (124-26), their lack of individuation renders it impossible for the viewer to consider their respective guilt. Across the river, Charon in his small sailboat is seen at the end of a linear curve of new arrivals waiting to pass through the border building to Hell. Here, their loss of individuation is reflected in their clothes washed of color and their rounded shoulders as they walk in an orderly queue towards damnation. With each successive broken line of the shades in Blake’s illustration, the dead recede further from their former living bodies. Each queue depicts an increasing state of despair as the shades silently confront their fate. Stripped of Dante’s words in Blake’s work, their fates seem to be cruel unfair punishment for crimes not described with particularity.

Above these three broken lines of shades, a foreboding miasma of hellfire and dark clouds rise from the murky river--reminiscent of the dark and deadly sky of Blake’s London. Separated from the top of the miasma, there is one final line of flowing insubstantial forms. Supposedly, these are the “neutral” angels who failed to choose to serve either God or Satan. Whereas in the *Inferno*, they mingled with those humans who shared their flaw, Blake separates them from the tragic drama of the shades cut off from their human lives. These formerly heavenly forms stand in yet another line, looking down sadly at the suffering shades. Despite their position above, they seem to pass no judgment. Ultimately, Blake’s illustration covers the narrative elements of *Canto III*, but may leave a viewer, who is unfamiliar with Dante’s *Inferno*, questioning the reasons why so many are suffering and the significance of their suffering. To learn from Virgil that their sin was indecisiveness, frequently, combined with cowardice, leaves this viewer in even more of a

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quandary as to why the fearful shades would have been expected to break free in life from the ordered queues intended for their own good—like the grocery store lines or the queues of cars whose occupants are waiting for testing and soon the queues of people waiting to be vaccinated. Are the queues of Hell a fitting contrapasso—a punishment fitting of their sins— for sinners, trusting in their government, who accept unquestioningly the need to wait in an orderly fashion for an uncertain future to unfold? Or do these queues universally represent the destiny of all men, not just sinners, to wait anxiously in foreboding lines both during life and after death?

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A TRIBUTE TO MATERDOM

by Aarti Johri

Tell me, Mothers
A little about yourselves
Your dreams, the battles you fought
Because I've never really thought
Of your lives before mine,
Conditioned as we are to look up to our forefathers
Why were you, then, left behind?

Did you listen, did you obey,
Or like me,
Did you often choose your own way?
Did you die at childbirth, or of old age, or neglect?
And did your hearts break--
So many times, like mine?

Did you foresee that I would leave the land
So dear to you,
And travel to a foreign place
And make a home, just like you?
That I would strive to pass on tradition,
When I don't know what tradition even meant for
you.

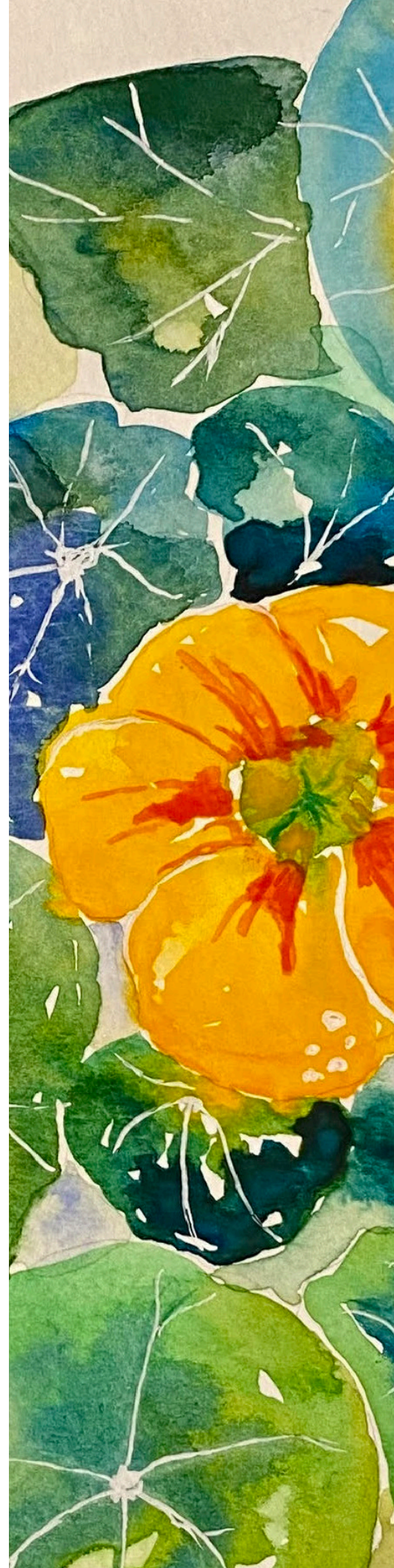
What songs did you sing, what poems did you write?
What evening stoves did you light?
What hopes were dashed, which songs unsung?
Were you heard,
Or were your voices drowned?
As they have, now, in time.

Did you imagine I would walk my own path?
Doing jobs your men did and speaking my mind
Casting my vote, exerting my rights,
Or do you laugh at me and think, you foolish child--
Dreaming big dreams and walking broad paths
When ahead lies the same fate as mine.

THE TEMPLE TOWN

by Aarti Johri

Because
The temple bells ring
And have rung
For a thousand years,
Because
The priests have sung their chants
For ever so long,
Because
The poor are huddled
To watch the rich gathered here,
Because
The blessed are blessed once again,
Because those in pain
Seek refuge here
And a calm within these walls
That, unknown to them, exists within themselves,
Because we seek those clamoring bells
That beckon us
To these towers of beauty and power
Built by rich kings,
Because wars are fought
And blood shed over them,
Because man needs the mirage of God
And God seems to need powerful men
And temples and bells.



CONTRIBUTORS

EILEEN AVILA (*Queuing in the Vestibule of Hell...*) is a fourth year MLA student working on a thesis on the poetry of Seamus Heaney. In Spring 2020, she participated in Denise Gigante's MLA class, *Dante and the Poets*. Frequently, class reading and discussion reverberated with *The Inferno's* meaning in a COVID world. The contrasting visions of Dante's condemned sinners in *The Inferno* and William Blake's illustrations of *The Inferno* in which the dead maintain their humanity seemed strangely relevant to our current divided society where many followed safety protocols but others flaunted rule breaking.

APARNA CHANDRA (watercolors) is a first-year MLA student. Her previous training is as a physician. Her love of liberal arts was fanned by continuing education classes she took in Chicago, New York, and Bay Area institutions. The last series of lectures she attended, took her on a journey of history of art and inspired her to take up watercolors. She lives in Palo Alto, and when she is not thinking about her MLA essays, she is scouting the neighborhood and the regional preserves for painting ideas, in fact, sometimes doing both at the same time. She is a self-taught artist and loves collecting all kinds of pigments and inks.

ROBERT CORNWELL (*Did Achebe Miss the Boat?...*) founded and leads Build a School in Burma, a non-profit that seeks to increase educational opportunity for underserved children in one of the least educated countries in Asia. His interests include the politics, literature and history of decolonization.

FYZA PARVIZ JAZRA (*Practical Astronomy in the Islamicate World...*) is a fourth year MLA student working on her thesis on the topic of *17th c Oxford Astronomer and Mathematician John Greaves's Rediscovery of Oriental Star Catalogs* and his coordination of Simultaneous Lunar Eclipse Observations in the Levant. She is also the co-director of Stanford's Poetic Media Lab where she works on Annotation Reading Tools. She previously worked as a Software Engineer at Apple and Motorola. She is an aspiring writer and has read her work at various festivals and venues around the Bay Area.

AARTI JOHRI (*A Tribute to Materdom...*) serves as President on the board of SACHI (Society for Art & Cultural Heritage of India, www.sachi.org), an educational non-profit dedicated to promoting an understanding of Indian art through public programming. Once a technology professional working in Silicon Valley, Aarti finds her paths meandering back to the arts, to history, and in particular feminist history. She graduated from the MLA program in 2012, and presented a paper on her thesis, *Paternalistic Politics and Feminist Fates: The Legacies of Rani Laxmibai of Jhansi and Begum Hazrat Mahal*, at the GLS conference at Dominican University, San Rafael in June 2013. Since then, she has been in touch with the current descendants of the subject of her thesis and hopes her path meanders back to her research.

JUÉ LIN (*My Mother's Face Mask*) is a first year MLA student at Stanford. She immigrated from China as a foreign student in 1990 and has had a successful career in Finance with several Bay Area tech companies. She feels very blessed to have had the opportunity to work with the brightest and the best in gaming, creative software, and social media industries. As her work requires that she researches tax laws and, sometimes, produces technical tax planning memos, she finds creative writing simply a breath of fresh air. Aside from reading and writing, Jué also enjoys photography, drawing, travel, and the outdoors. She looks forward to the MLA journey with a fun and supportive community that is inspired by learning and sharing creative ideas.

SAPNA MARFATIA'S (*Excerpt from "Creating the Architecture of the Scientific Revolution: The Triple-Shelled Dome of St Paul's Cathedral"*) professional experience spans thirty-three years, she is a licensed architect in the State of California with a B.Arch., M.S. in Urban Design, and a Masters in Liberal Arts. As the Director of Architecture with Stanford's University Architect

/ Campus Planning and Design Office, she assists in the selection of architectural and preservation consultants, setting the architectural tone through design guidelines, monitoring construction quality, and collaborating with university partners to create a vision for the preservation of iconic buildings. Marfatia was appointed as a Los Altos Historical Commissioner for two-four-year terms, she served as a Board Director for the American Institute of Architects Silicon Valley Chapter and is currently chairing the property committee for the Filoli Board, a National Trust Property, and Events and Tours Committee for Stanford Historical Society. Marfatia has taught architectural history, basic and advanced design studio, and published papers on architecture, design, and preservation.

KIM NAVARRO (*What Would it Mean to Win "America's Got Talent"?*) is a two-time U.S. Bronze Medalists and two-time World Team member in Ice Dance. With skating partner Brent Bommentre, she was a first alternate to the 2010 Vancouver Winter Olympic Games. As a professional figure skater, Kim has performed in numerous ice shows all over the world including *Stars On Ice*, *Holiday On Ice*, *Broadway On Ice*, *Sun Valley On Ice*, and Nancy Kerrigan's *Halloween On Ice*. She and Brent appeared in an episode of the television show *Glee* and competed as part of the act "Aerial Ice" on the quarterfinals of NBC's "America's Got Talent." Kim is a graduate of Columbia University with a degree in English and a minor in Dance. She is currently pursuing a Masters in Liberal Arts at Stanford University. Although she is working on her thesis, she finds herself often distracted by her three-year-old and one-year-old daughters.

MONICA OAKLEY (*Judith Sargent Murray: Her Money Matters*) Following graduation from UC Berkeley with a B.S. in chemical engineering, Monica first worked at Procter & Gamble, and then obtained an M.S. in water resources engineering at the University of North Carolina, Chapel Hill. She spent the next thirty years working full-time as an environmental engineering consultant to municipal governments, including several years with her own consulting firm. During her career she has received multiple awards and served in many society leadership positions. Monica entered the Stanford MLA program in 2016, where she delights in pursuing her long-time interest in the humanities. When Monica is not reading or writing, she enjoys social dance, music, hiking, and gardening.

MICHILEEN MARIE OBERST (*Ode to the Door*) is a current student of the MLA program. A Palo Alto local, she picked up her passion for writing at Santa Clara University, where she received a Bachelors in both Psychology and Theatre Arts. After travelling the world solo for some months she began her career at TheatreWorks Silicon Valley, which during her time received a Tony for Best Regional Theatre. Michileen continues to be a local poet and playwright while working at Stanford School of Medicine as an Administrator.

PRABHU PALANI (*True State...*) is the Chief Investment Officer of the San Jose Retirement System. He graduated from the MLA program in 2009. He is continuing his project analyzing the correspondence of John Elphinstone, 13th Lord Elphinstone, who was governor of the Madras Presidency from 1837 to 1842, and featured in Prabhu's MLA thesis, "English and the Madras Presidency." He has also taken to learning a new language, Urdu, to better appreciate *qawwalis* and *ghazals*, musical forms from the Indian subcontinent.

SANDRA PARK'S (*Tblisi, Georgia 2019*) novella, *If You Live in a Small House*, takes place in 1950s Hawai'i. Her poetry and fiction have appeared in the *St. Petersburg Review*, *The Iowa Review*, *New American Writing*, and other journals and anthologies. Her stage play, *Red Money Bag*, was a finalist for the Aurora Theatre Global Age Project. Sheltering in place, she misses travel abroad. This piece on Tbilisi, drawing from a Georgian grammar book bought at a sidewalk kiosk, is part of a longer project.

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