

Natural Selections

A NEWSLETTER OF THE ROCKEFELLER UNIVERSITY COMMUNITY

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Tumor Virology Turns 100: Peyton Rous and the 1st Cancer-Causing Virus

JOSEPH LUNA

A little over a century ago this month on the 4th floor of Founders Hall of the nascent Rockefeller Institute, a 32-year-old pathologist named Peyton Rous sat in front of his microscope to examine the results of an experiment. Before him were stained sections of a tumor he isolated from a Plymouth Rock hen in the nearby animal house. Having published a paper on the bird's cancer the previous year¹, the basic experiment was routine for Rous: resect a small chunk of tumor and transplant it into a new bird. If a cancerous tumor grew, it would be sectioned, stained, and observed under the microscope to define its pathology.

This particular experiment was different. Instead of directly injecting bits of tumor into a bird, Rous first passed the tumor cells through a bacteria-tight filter and then injected a bird with the now cell-free filtrate. Common consensus of the day held that cancer, as a distinctly cellular phenomenon of "somatic mutations," shouldn't arise with injections of cell-free material. Yet remarkably, within a few weeks some of the injected birds developed tumors, though nothing was conclusive for Rous until he plied his trade at the microscope. Coming into focus, the methylene-blue and eosin stained tumor cells of bird number 177 almost shouted their answer: cancer. The spindle-cell sarcoma Rous observed in the new bird was indistinguishable from the tumor in the original hen. Rous had found that a filterable agent, in modern parlance, a virus, could transmit cancer.² It remains a seminal discovery of 20th century biology.

Not many were convinced in Rous's day. The scientific establishment cried "contamination!" almost in unison upon reading his findings. Many doubted that Rous's filtrates were completely devoid of living cells. When Rous freeze-dried the filtrate to ensure that all cells (if any) were killed and found that the filtrate was still tumorigenic,³ prominent researchers demonstrated that in rare circumstances some cells could survive the freeze-drying treatment.⁴ No matter the suggestive evidence, there were always alternate, if increasingly far-fetched, explanations. For those few that believed Rous's results, most passed

them off as a scientific curiosity, a footnote of avian biology and an interesting cancer model, but probably not applicable to more sophisticated mammalian tumors, which had eluded cell-free transmission. Rous's own experience almost bore this out; he tried in vain for a few years to isolate a mammalian tumor virus, but was unsuccessful. By the outbreak of World War I, he had moved on to other studies and shelved the project.

Shelved perhaps, but not forgotten. In 1933, more than two decades after the initial observation of a cancer-causing virus, Richard E. Shope, of the Rockefeller Institute's Department of Animal Pathology at Princeton and a close friend of Rous's, isolated a virus that caused wart-like growths in cottontail rabbits.⁵ Where some might be hesitant to re-visit past work, Rous enthusiastically dove into the study of Shope's papilloma virus, and within a year, demonstrated in his Smith Hall laboratory that the warts were indeed true tumors.⁶ Over the ensuing decade until his retirement, Rous studied the Shope virus in great depth, proving its tumorigenic potential, its relations to other carcinogens, and characterizing its induced disease in no shortage of contexts. By the time Rous officially retired in 1945, it was clear that while not all cancers were viral in origin, a notable few certainly were.

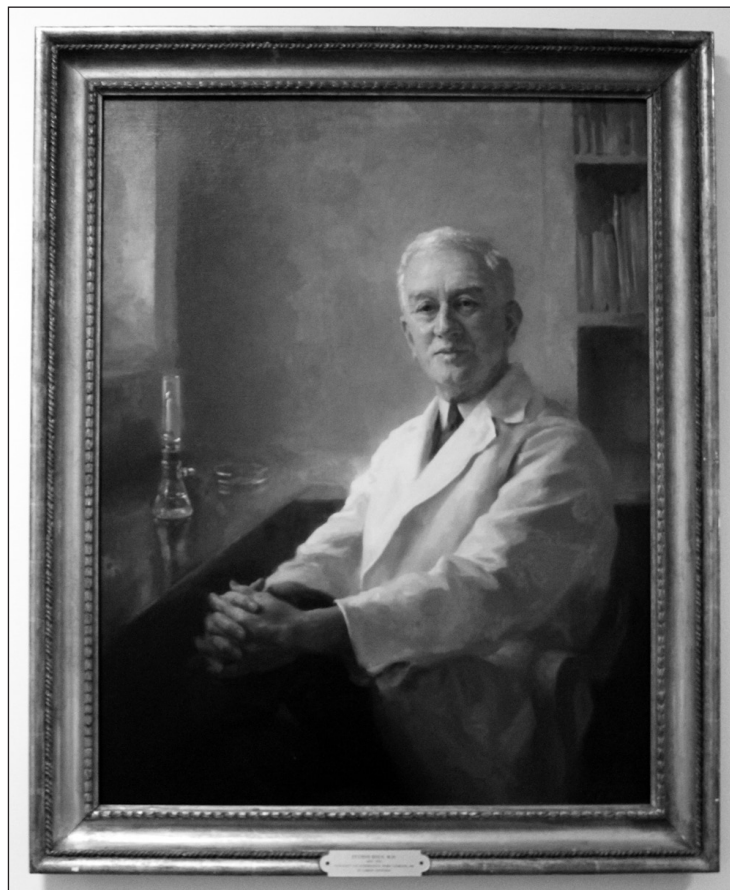
Ultimate vindication wouldn't arrive for yet another two decades,

when in 1966 at the age of 87, Rous was finally awarded the Nobel Prize in Physiology or Medicine. It remains the longest wait, from discovery to prize, on record.

If you'd like to find out more, stop by the library in the coming weeks, where an exhibit on Rous will soon be on display. ☉

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Portrait of Peyton Rous, currently on-view in the Greenberg Hospital lobby. Photograph by the author.

PDA Corner—Web site, Seminars, and Cricket Tournament

ISABEL KURTH

A Web site that leaves you with more questions than answers is definitely not a good one. Our PDA Web site currently is such an example—a good idea with a bad execution. Finally, we are putting into action something that we have planned to do for a long time: we are currently working on a serious revamp of our Web site. We have already had several meetings with Information Technology (IT) to come to a consensus on what we want and what is possible, all while working within the quite rigid structure of the Rockefeller Web sites. The new Web site will give an overview of the PDA in general and will contain information on ongoing and past initiatives, the events and fellowships that we sponsor, and links to useful departments at RU, career-related Web sites, and the alumni database. We are also creating a section on “dialogues with the administration,” which summarizes some of the most important meetings that we have had with the administration. If everything goes as planned, we should have the new Web site up by early summer.

Last month we also sponsored a celebration of what is thought to be one of the most important events for any South Asian-born or -raised person, and perhaps everyone from the past or present Commonwealth group of countries: the Cricket World Cup final between India and Sri Lanka on April 2. I honestly had no idea how emotionally charged this event was for cricket fans (especially Indian), until we received several independent but equally enthusiastic requests from postdocs that wanted us to help them find a place where they could watch the

match. We did, and we also found funds from our budget to pay for coffee and donuts in the morning and pizza at lunchtime. Hard to believe, but there were really super-enthusiastic people showing up at 5 a.m. to watch the start of the game. Ruchi Gupta, who spearheaded the event, was joined by approximately 12 cricket fans in these early morning hours. The atmosphere was quite tense in the first part of the game as Sri Lanka put a daring 274 to chase in 300 balls. As the legendary Sachin Tendulkar and Virendra Sehwag opened India's chase, the Rockefeller Research Building (RRB) room 110 started spilling out into the lobby. People from all nationalities joined the party, some of them just curious to see how it feels to be a cricket fan. Every boundary giving 4 or 6 runs was cheered with loud roars, whistles and claps. This was clearly a memorable Saturday for India as a whole, and for every cricket fan who came together to celebrate India's first victory of the Cricket World Cup in 28 years. If you want to get the feel of the atmosphere, check out these pictures: <http://www.facebook.com/album.php?aid=297818&id=741229693&l=7a1dc3b062>.

On a more scientific note: we again hosted our monthly Tri-Institutional PDA lunch seminar series on March 31st. This time, Andreas Keller from Leslie Vosshall's lab at RU presented intriguing data of his studies on “Genetics of Smelling,” where he was looking at the correlation between the sensitivity and selectivity towards a particular testosterone-like odor in individuals and the polymorphisms in the expression of their

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receptor. In keeping with our Tri-I version PDA seminar series, the second speaker was Brian Zeglis from the Jason Lewis lab at MSKCC who talked on “Click for Chemistry as a Modular Strategy for the Construction of Radiometallated Antibodies for Positron Emission Tomography.” Brian presented a novel strategy where he covalently links an antibody used in breast cancer therapy with a chelator that contains radioisotopes used in irradiation therapy by a very efficient chemical reaction also referred to as “click chemistry.” The goal is to specifically localize the radioisotopes in the surroundings where they are needed—breast cancer cells.

Looking forward, we are preparing for our meeting with Marc Tessier-Lavigne, which will take place at the end of April. Check back next month to read about the meeting! ☺

Vox Clamantis in Urbe

The Rent is Too D*** High Part II: Controlling it doesn't work

JACOB OPPENHEIM

If the rent is too high, why don't we just limit it? Rent control is a common prescription for a problem that has vexed the city since at least the end of the First World War, when a housing shortage confronted millions of returning veterans. Expanded massively in the years following the Second World War, it was a program whose motivation seemed to necessitate a limited time-scale, and it only mushroomed. Even at the height of liberalism in the 1960s, its flaws were clear and it became the first large-scale government intervention aiding the poor to be dismantled, a process which began in 1971 and continues slowly today. What, then, are the pernicious effects of rent control that have made it unsustainable as early as the 1970s? A full explanation requires some basic economic theory.

In normal times, housing, like any other good, will be built until the

supply reaches the level demanded. That is, it will be produced until “suppliers” (developers in this case) can make no more money, either due to increasing costs, decreasing willingness of buyers or renters to pay, or a combination of the two. When the price is capped, as in the case of rent control, a shortage ensues. There are two reasons for this: firstly, since the cap is below the market price of housing, demand is artificially high, as more people are willing to rent; and secondly, because not enough housing is supplied by developers who cannot make enough money renting the property.

The housing market does not just consist, however, of developers and renters. Many buildings are owned by landlords, who do not build new housing, but instead rent out their property and make improvements as

they see fit. Responsible for the cost of maintenance and the burden of taxes, landlords are especially harmed by rent control. In the late 1960s and early 1970s, the situation grew so dire that many landlords, mostly in the Bronx, burned down their buildings for the insurance money rather than continue to unprofitably rent out their property. Many more simply did not maintain their property, massively increasing the risks of accidents, damage, and crime.

These ailments convinced city leaders that rent control had to go. Out of concern for the poor, however, they allowed rents to only slowly adjust to market conditions. Year-to-year increases were extremely small until the rent reached a specified value, currently \$2000 per month. At this point, it could be set to market value, as long as the property stayed in the same family. This adjustment, while less actively harmful, does little for the poor. Rather, it mocks them, as most beneficiaries are upper middle class and wealthy renters, whose families have held the apartments for generations. While in the past the owners may have been lower middle class and perhaps deserving of a subsidy, the current wealthy owners, be they on Central Park West or in Stuyvesant Town, constitute a class singled out for favorable treatment for no other reason than grandfathering. The poor, who are more likely to move to find jobs and safer neighborhoods, rarely inhabit rent-controlled apartments.

The legacies of rent control have made it impossible for Stuyvesant Town and Peter Cooper Village to be profitably renovated, as they greatly need to be. This is to the benefit of their largely upper middle class residents, who enjoy a great deal, courtesy of the taxpayers of New York. Rent control impairs the buying and selling of buildings themselves as well: the MTA has faced this issue on Second Avenue, and notably just this past week, a 1.4-million-dollar West Village brownstone was reported to

include an apartment whose tenant pays \$127 per month by law.¹ This is madness. Yet when confronted with the problems of rising rent, community activists and politicians don't suggest freeing the housing market, the solution I described in my last column (March), but instead demand new controls on rent.

The debate over rent control reflects a continual tension in liberal democratic societies. In a world of scarce resources, not every desire can be fulfilled. The ultimate benefit of democracy is that the necessary tradeoffs can be chosen in the manner that society finds most in accordance with its values. Ironically, when a program or law exists that benefits a certain sector of society, but which has been analytically determined to be suboptimal, democratic societies are terrible at removing it. As long as it can be said that "it helps x" or "solves y," and a couple of sob stories are presented to the public and the legislature, the efficiency constraint is forgotten. This is the fundamental issue with rent control. Its very existence makes it hard to remove. We consider only the possible benefits, the qualitative, idealistic argument for it (and a couple of strategic hard cases paraded in front of the media), rather than examining its costs and effects and statistical benefits. We thus are stuck providing socialism for the middle and upper classes and denying the poor affordable housing, by limiting the size and scope of the market. When one is arguing solely in idealistic terms, it is hard to justify replacing "keep families in their homes" with "let developers build as much as they want." A clearheaded analysis, however, reveals that we have certainly chosen the wrong path and continue to make the poor suffer for it. Such is the shame of democracy. ☹

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RUArt No. 2: Dispersal Four

JEANNE GARBARINO

Seemingly suspended in midair in the Rockefeller Research Building lobby is a sculpture by the American-born artist William Reimann. Entitled *Dispersal Four* (1970), this swan-like art installation is constructed of Lucite, a transparent thermoplastic technically known as poly(methyl methacrylate) (PMMA). Holding true to Reimann's artistic versatility and technical genius, *Dispersal Four*, with its inherent light-absorbing characteristics and adherence to the "natural laws of harmonics and pro-

portion," gives us the illusion of weightlessness. Reimann, who trained under prominent sculptors Joseph Albers and Rico Lebrun, is known for his use of Plexiglas and steel. In NYC, permanent collections by Reimann can be found in both the Whitney Museum and the Museum of Modern Art. Next time you enter the RRB lobby, don't forget to look up—notice how the light hits *Dispersal Four* at different times of the day and appreciate the geometric configuration made from Lucite. ☹

Dreaming to Run—or Walk Briskly, at Minimum: Part II

RICH TEMPLETON

After my stint in the hotel and my first month of physical therapy (“Round 2”) I was a little better. I could walk for longer periods (e.g. from two blocks to five blocks), but I still took a cab or bus to work, kept my legs propped up on a stool at the lab bench, and crutched up the stairs of my apartment building. Friends and family helped me with certain things, like carrying my laundry, but I was sick of being helpless. So, on October 5, I carried (okay, heaved) my laundry down my five-floor walk-up. Which was genius.

October 5: Launder Me Softly (One Time)

As I gingerly topple my laundry bag down the third flight of stairs, an elderly woman appears in the stairwell below. I try to recoil the bag, but it evades my grasp and accelerates, awkwardly, behaving like an industrial-size slinky. In this instant I notice the woman’s eyes; they emote, “Today is not a good day. Please leave me alone. God. Please.”

Her pupils dilate as ironic t-shirts hurtle toward her. In the moment before impact, the woman’s expression shifts to one of sublime resignation, perhaps acceptance, as if she knows her fate will be met in the form of fabric softener. Embarrassed and concerned, I stammer, “Shhhii—[BAG-TO-SHIN-IMPACT!]—sorry! I’m so sorry! You see, um, I don’t have a free hand, and...”

We make eye-contact. She grimaces, shakes her head, picks herself up, and continues to walk up the stairs, past me, to her apartment, the one above mine.

I just inadvertently assaulted a senior citizen with t-shirts that read “Head-On: Apply Directly to the Forehead” and “More Cowbell!” (The slogans, in this context, really bother me for some reason.)

“Is this,” I ask myself, “rock bottom?”

October 17: Are you there, Pubmed? It’s me, Rich.

My knees have been barking considerably lately, prompting me to redouble my research efforts. After several straining hours at the computer I notice that the evolution of my search inquiries (or questions to the cosmos) nicely mirrors the Kübler-Ross cycle of grief:

Denial: knees structurally sound mildly painful.

Anger/Sarcasm: were human knees designed for bipedal movement?

Bargaining: conservative treatment knee pain” and “spontaneous cures.

Depression: amateur patellectomy.

Acceptance: [a] fulfilling life without kneecaps.

October 25-26: John McEnroe Would’ve Been Proud

After getting home from physical therapy I walk to the base of my stairwell expecting to see my crutch, but it’s not there. Garbage room? Nothing. The alcove near the mailboxes? Nope. Pizza place next door? No, sir.

Before realizing the crutch was gone, I was already angry in general. “Why me?” is my personal, and sometimes audible, refrain. I am sure my friends love to hear me talk about the “radical injustice of patellofemoral pain” during the World Series. I bitch, bitch, and bitch. But this crutch-thievery really gets under my skin.

I look up the stairwell and yell at the existential chair umpire, “You cannot be serious!” I throw down my non-existent

racket and put my hands on my hips, gazing at the ceiling with disgust. I pace-hobble back and forth muttering, “C’mon guys! You’re better than this,” as if to implore my neighbors to improve what I can only assume is their childish behavior. I kick the bottom stair. My big toe hurts and my right knee is even more pissed-off.

Eventually, I stop bitching. I stop bitching partly because I am fatigued and partly because I realize that having arguments with imaginary line judges (“How do you call a foot-fault there?!”) is not constructive. I accept that perhaps I deserve some divine retribution after the laundry incident, not to mention my crappy attitude.

My right hand clutching the railing, I plod up the stairs, expecting fireworks to go off in my knees. Fortunately I was spared the Fourth-of-July-finale. On the bright side, I think, I still have my other crutch.

The next morning, I use my remaining crutch to go down the stairs. I leave a note: “Please leave alone, need for stairs. And if you could bring back the other crutch, that’d be great! :)”

Two crutches await my entrance that evening. A Post-It reads: “Sorry! I thought this was going to the garbage and figured my grandmother could use it. Be well!”

I clutch the Post-It and grin, thankful that I can see.

November 1: God I love Meatloaf

A serious running group—four or five people, about 6:00/mile clip—glides by me as I amble to the bus stop. While I sit on the bus, I reminisce about my own runs in late June, my favorite time of year: school is out and the possibility and wonder of summer wait to be tapped. I remember coming home at 9p.m. from my summer job as a physical therapy aide—injuries started at an early age—and running my beloved five-mile loop: train station, Eastchester Blockbuster, Pondfield Road, and back again.

On my runs, I listened to “New York’s Only Classic Rock Station, Q104.3” on my clunky, oversized Casio radio, the one I wore through college when iPods were already commonplace. Yes, the “Q” plays the same stuff over and over again (Led Zepelin, Rolling Stones, Billy Joel, repeat...). But I am a creature of habit. I love deliberate, predictable bass riffs and self-indulgent drum solos, and the megalomania that is Meatloaf. (Of course, I do enjoy other types of music, particularly for karaoke: I have personally cornered the market on the “Scorned- Women-From-The-Mid-90s” genre: Alanis Morissette, Lisa Loeb, Natalie Imbruglia, etc.) The ominous opening of The Animals’ “House of the Rising Sun,” the operatic guitar-solo that ends Lynard Skynyrd’s “Freebird,” and the all-too-literal lyrics of Foreigner’s “Jukebox Hero” get me pumped up every time, especially when all I want to do is just stop...and...breathe.

I admit that I even change the Rockefeller gym’s radio station from 97.1—which plays hip-hop, a more reasonable and universally accepted workout genre—to 104.3. Occasionally I hear grumbles about Stevie Nicks’s schmaltzy and over-dramatic voice, or the endless tributes to Styx. These are, I admit, fair and legitimate criticisms. But I cannot help but leave the “Q” on as it conjures memories of a once kinetic existence, a place I hope to reclaim as my own. ☉



*This Month Natural Selections interviews Aaron Torrez (Facilities Management)
Country of origin: United Kingdom*

New York State of Mind

1. How long have you been living in the New York area? 33 years. Yes, I'm 33 years old.

2. Where do you live? I live in Astoria, Queens now, but I grew up in Brooklyn. I prefer to say I'm from Brooklyn.

3. Which is your favorite neighborhood? Brooklyn—the whole borough!

4. What do you think is the most overrated thing in the city? And underrated? New York hot dogs are overrated. Everyone loves them, but they're not that great. If you saw them clearing out those trucks you would change your mind. The subways are underrated. I love taking the subway. As a kid I used to ride up and down the G-train all the time, back then when it was reliable.

5. What do you miss most when you are out of town? I miss the noise. The suburbs are so quiet I can't sleep. I miss the music playing and the people screaming in the street.

6. If you could change one thing about NYC, what would that be? Tourists. I wish there were fewer tourists. Get them out of the way!

7. Describe a perfect weekend in NYC. Run in Central Park, visit to the AMNH. Recently, my girlfriend and I pretended to be tourists. That was a pretty perfect weekend. Living in New York you never get the full experience. On our tourist weekend we wore "I heart NY" tee shirts, took the double-decker buses (and sat on top), and took the boat to the Statue of Liberty and Ellis Island. I had never visited Ellis Island before so that was pretty cool. We got to see a lot of things we never usually have a chance to see. We also acted like tourists—we were polite and didn't push people out of the way. It was a pretty fun.

8. What is the most memorable experience you have had in NYC? Being a tourist was really memorable. We got stared at and knocked around a lot. It was really funny.



9. If you could live anywhere else, where would that be? Vermont. I love skiing. I'm a ski bum. I would ski in the morning and afternoon. Same with snowboarding; I would snowboard morning, noon, and night. If I lived in Vermont I would ski and snowboard all day long. I'm sure I would get over the lack of city noise after a while.

10. Do you think of yourself as a New Yorker? Why? Ya, I'm definitely a New Yorker. I have the attitude, the mouth, the whole nine yards. ☺

Paying Homage to Women in STEM

JEANNE GARBARINO

Recently, I have been spearheading a campaign aimed to increase the visibility of women in science, technology, engineering, and mathematics (STEM). Although I have always been aware of the relatively low number of tenured female professors in both my graduate school and here at RU, I really began to think about it after learning that females only make up 13% of the RU faculty body. As someone who often blogs about gender issues in science, this statistic really sparked my interest. So, I decided to look into it in more detail.

Several US government agencies including the Census Bureau, the National Science Foundation, and the Bureau of Labor Statistics have broadly defined what it is to be a STEM professional and have estimated that approximately 21 million people make up the STEM workforce. Despite only making up a small percentage of the American workforce, occupations in STEM are growing in number and the US Department of Labor has projected that many science and engineering jobs will increase at a rate that is above average for all occupations. Therefore, STEM professionals are critical players for economic innovation. Even President Obama, in his 2011 State of the Union Address, declared that now is our nation's "Sputnik moment." He further elaborated by saying that "we'll invest in biomedical research, information technology and especially clean energy technology – an investment that will strengthen our security, protect our planet, and create countless new jobs for our people."

Although the STEM playing field has been evolving, it is still overwhelmingly male. With a 22% projected growth in STEM occupations by 2014, it seems that women could be missing out on

a number of job opportunities. Despite the statements made by former Harvard University President Lawrence Summers, females are just as competent as males when it comes to STEM. However, research has shown that the negative stereotypes surrounding the ability of girls to compete with their male counterparts in STEM subjects can significantly affect female academic performance.

Of course these discrepancies bring with them a multitude of moral, ethical, and financial consequences, creating a steep climb for female STEM professionals. The US government and various organizations have recognized these issues and have recently launched several programs aimed to encourage young girls to study subjects relating to STEM. Furthermore, *Working Mother magazine* recently highlighted the Most Powerful Moms in STEM, bringing to light that being a mother and a successful career woman was within the realm of possibility. However, if we are to really make an impact, we need to work at getting more STEM females in the spotlight. Not only would this help to encourage young girls to go into STEM, it would also set an example for young boys and, hopefully, dilute the negative stereotypes associated with girls and cognitive ability.

OK, I am nearing the point where I will tell you about what I want to do about this. Sure, we need to consider that institutional and national policies need to be put into place to help women progress in the STEM workplace. But, why not do something on a smaller level as well? In the American Association of University Women (AAUW) report entitled "Why So Few?" the disparity between men and women in STEM fields is addressed:

This study tackles this puzzling question and presents a picture of

*what we know—and what is still to be understood—about girls and women in scientific fields. The report focuses on practical ways that families, schools, and communities can create an environment of encouragement that can disrupt negative stereotypes about women's capacity in these demanding fields. By supporting the development of girls' confidence in their ability to learn math and science, we help motivate interest in these fields. **Women's educational progress should be celebrated**, yet more work is needed to ensure that women and girls have full access to educational and employment opportunities in science, technology, engineering, and mathematics.* (Emphasis added)

So to help spread the word about women's educational progress in STEM, I invite anyone and everyone to tell us about an inspirational lady STEM in your life. Please send your stories to themotheregeek@gmail.com and I will post them on my blog, The

Mother Geek, as they come (<http://www.science3point0.com/themotheregeek>). I look forward to your participation and can't wait to learn about the incredible women who are paving the way for STEM gender equality, whether it is their intention or not. ☺

References and further reading

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The Living Art of Puppetry

TOM McDONAGH

"An actor struggles to die onstage, but a puppet has to struggle to live" explains Adrian Kohler, from Handspring Puppet Co. This quote echoes the unfortunate place of puppetry in theater in the us. Puppetry is more often dismissed as novelty or sidelined to children's entertainment. Yet in other parts of the world such as Japan, the master puppeteers of the classical form of Bunraku are honored as living national treasures. In Java, super-star Wayang Kulit puppeteers draw crowds of thousands to all-night performances. In fact almost every culture in the world has some form of puppetry. However, here in the west over the last 60 years, perhaps due to a striving for theatrical realism, we somehow lost our patience for the humble puppet.

Today the mood is changing. Last month's arrival in New York of "War Horse" from the National Theatre, London is a landmark event. The play follows a young boy who enlists to fight in the First World War to find and bring back his beloved horse that was purchased by the British army. In this human war, it is, however, the puppets that are the principal characters; full-size horses made of metal and bamboo crafted by Kohler's Handspring Puppet Company. Each horse is operated by three controllers who collectively create movements, from simple breathing to mounted cavalry charges, in the heat of battle. Rave reviews, sell-outs each night and standing ovations have caused such a sensation that Steven Spielberg has signed up to make "War Horse" the movie. Predictably, Spielberg has



Shadow puppet of Dr Jeffries from "Voyage to the Skies,"
design by Kate Leitch

turned away from the puppets in favor of real horses, despite his self-confessed fear of them.

Beyond the smash hits of "War Horse," "Avenue Q" or "The Lion King," New York is a hotbed of avant-garde puppetry. Recent productions such as "Disfarmer" by Dan Hurlin and "Peter and Wendy" by Mabou Mines (now being re-staged at The New Victory Theater, May 6 to 22) have begun to find new adult audiences. Dan Hurlin was the subject of a new documentary film, "Puppet" by David Soll that follows the puppeteers' artistic triumphs and commercial perils (hampered in part by an anti-puppet *New York Times* theater section).

If you're curious to see for yourself, catch this year's LABAPALOOZA! festival (St. Ann's Warehouse, in Dumbo, June 2 to 5). This adult puppet festival is the product of a nine-month project development at the "puppet lab." Nine short productions have been developed at the lab that include: "Senseless", a murder mystery based in the Helen Keller School for Music; "Planet Egg," the adventures of a small electronic device which crash-lands on a planet made of egg; and "Voyage to the Skies," an ill-fated balloon flight during the age of eighteenth-century science. This last play is Rockefeller University's own contribution to the lab created by myself, Kate Leitch, Roman Corfas and Donovan Ventimiglia. ☺

Book Review: Drawing on Art: Duchamp & Company by Dalia Judovitz

BERNIE LANGS

Drawing on Art is a wonderful analysis of the impact that Marcel Duchamp has had on the art world. The book serves as an intellectual study of his art and its legacy. It is beautifully written by Professor Judovitz, who carefully chose images of Duchamp's oeuvre that best enhance a discussion of his overall thinking.

To begin with, a few years ago, when I was visiting Paris in the early 1990s, I chanced upon being first in line to enter the Louvre museum and for just a handful of minutes, I had the most famous painting in the world, Da Vinci's *Mona Lisa*, to myself. I remember thinking it was the greatest painting I'd ever seen and what has remained with me was how wonderfully the painting had aged, how its browns and its dark setting gave it such a grand feeling of monumentality. While in Paris, I also saw an exhibition featuring Pablo Picasso's late works at the Centre Pompidou.

What I feel about Duchamp can be brought to light by comparing Picasso and Duchamp and by comparing my reaction to seeing the *Mona Lisa* and seeing the reproductions of *L.H.O.O.Q.* by Duchamp (1919), where he took a postcard of that painting and drew in facial hair on her most famous face. Before reading *Drawing on Art*, I had always taken the attitude of *L.H.O.O.Q.* as something that had to be done to take high art down a notch and give it a dose of humor or irony. What Judovitz explains beautifully is that Duchamp's gesture was, in part, a reaction to the art market's turn towards commodification as well as a way of taking the pseudo-reverence of the concept of the artistic "genius" down to earth. Further, *Drawing on Art* discusses ideas by the art essayist/philosopher Walter Benjamin on the effects of mass reproduction of art works on aesthetics in general, relevant to both to the legacy of the *Mona Lisa* and the statement made by *L.H.O.O.Q.*

Picasso was rising in the early twentieth century at the same moment as Duchamp. Picasso was a monumental genius whose art, with the advent of Cubism, broadened our notion of what a painting could do and which eventually led to the joys of abstraction. As I saw in Paris, Picasso's late paintings sometimes feature motifs based on those by Rembrandt. Duchamp was as radical as Picasso. He exploded on

the scene with his "readymades", such as a bicycle wheel upside down, or a urinal, straight from the factory and plumped on a pedestal. As astonishing as it is to think of Picasso's Cubist revolution, I marvel at the fact that Duchamp could have radicalized art at such an early time in this way. *Drawing on Art* explains the intellectual depth of the readymades and how Duchamp saw the need to attack the concept of art being a purely visual experience and to move from the "ocular to optics." His was a critique of the "seduction of the retina" and Judovitz notes this as extending to the notion of and reaction against "visual consumption by the public" and art as commodity.

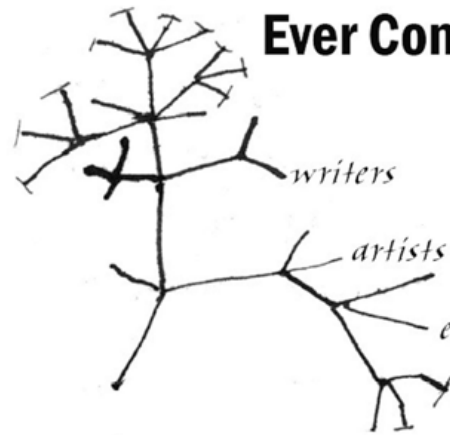
Picasso once said, "I paint objects as I think them, not as I see them." But in doing so, and by revolutionizing painting, Picasso's reaction against the purely visual still left art and painting as genres in themselves. The paintings that he made in Rembrandt's shadow were respectful of the history of art. I can't in any way see that respect emanating from Duchamp, especially in light of his defacement of the *Mona Lisa*. Duchamp's need to take away visual pleasure and stimulation in painting has left the art world with...basically nothing. Picasso's genius led to a few flourishing decades of reaction, culminating in Abstract Expressionism. But now, the readymades keep the modern art scene in a state of disarray, and what is termed "irony" one can just call "ridiculous" and most often, "tasteless." Judovitz denies that Duchamp is the "end of art" but sees him as "anartistic."

In *Drawing on Art*, the author included enthralling extended quotes by him. His

genius and uniqueness cannot be denied. I believe that Duchamp remained true to what he believed and lived his life in accordance with his "anartistic" views. It is interesting that Duchamp eventually fled the art world to enjoy the intellectual life of playing chess. A blogger for *The New Yorker* magazine, Richard Brody, recently made an observation on chess: "Chess is a closed and perfect world with a clearly defined and finite set of rules—the opposite of life, and for those who become devoted to it, a substitute for life..." Duchamp substituted a life in art for chess and his readymades replaced the beauty of visual art with a destructive irony. Hopefully, something will someday emerge from the ashes for art to once again reign supreme.

Natural Selections interviews the author Dalia Judovitz, NEH Professor of French, Emory University:

1) BL: *The idea that Marcel Duchamp's work reflects his reaction to the commodification of art was a fascinating theme of your book. Why did this have to be tied to a destruction of the visual necessities of viewing art? Why can't looking at paintings be seen as a conduit to intellectual, mental, cerebral reactions?* DJ: Duchamp's critique of art represents his attempt to question and disrupt the reduction of both the production and the consumption of the work of art to purely visual experiences. In so doing, he was reacting against art movements such as Cubism who sought to innovate painting solely through the abstraction of visual forms, and also against the rising market and institutional forces which were impacting art, akin to forms of commercial con-



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sumption. In response, Duchamp moved away from a purely visual understanding of art by expanding art to include poetic, intellectual or conceptual dimensions that would enlarge its meaning...Duchamp's playful and irreverent appropriation of *Mona Lisa* recognized his conceptual debt to Leonardo, at the same time mocking its visual appearance or "look."...Duchamp tried to counter the visual seduction of painting by deliberately and actively introducing intellectual considerations into both the production and consumption of artworks.

2) BL: *How would you react to the statement that perhaps Marcel Duchamp did not lead to the end of art, but the end of "good art"?* DJ: Duchamp's work has been interpreted by some as bringing about the end of art, whereas I would argue that he made visible art's conditions of possibility, that is, the specific, historical, social and cultural conditions that determine its manifestations. I don't believe that Duchamp's interventions are either negative or nihilistic: he explained repeatedly that he is not interested in the idea of attacking or negating art (because in doing so he would be simply

re-affirming its conventional meaning). Rather he was fascinated by the impossibility of defining art, since each historical moment has its own understanding. The readymades, for instance, "draw" on the ideals of representational painting, but do so humorously and poetically by giving us the object and its title rather than its artistic/ visual rendering. As Duchamp appears to move beyond painting he does not in fact bring art to an end, since his works derive their conceptual and poetic impetus from various ideas of art...The readymade is not "bad" art, because its meaning is derived from and fueled by its interplay with the conventions of painting; it is "anartistic" rather than anti-art. Duchamp was interested in recovering the archaic, sanskrit meaning of art as "making," which would bring the activities of the artist in line with other forms of making such as exercised by engineers and even businessmen. He described himself as "an engineer of lost time."...To me, his explorations of creativity, like Leonardo, enable him to bring together the apparently disparate realms of the arts and the sciences.

3) BL: *In terms of Duchamp's work leading to the participation of the viewer as equal an entity to the artist and the diminishing of the idea of the artist as a savant, genius, etc... what does this do to the concept of "talent?" Didn't the viewer always participate, but in different ways?* DJ: Duchamp's efforts to revalorize the position of the spectator were based on his efforts to "de-defy" the artist, which he felt was a relatively new development. He noted that earlier conceptions of the artist recognized the labor of artistic production and its collaborative nature. His activation of spectatorship reflects the recognition that a work's meaning does not lie solely in its author, as individual source, but also in its consumption by the spectator or posterity. By diminishing the idea of the artist as genius he was not undermining the idea of "talent" but rather redefining art as interactive and collaborative, where consumption and production are brought together through appropriation...Duchamp moved away from the idealized notion of creation to a notion of artistic production whose logic is appropriative and reproductive, or as Man Ray noted: "To create is divine. To reproduce is human." ©

Life on a Roll



Untitled by Andrej Ondracka

