

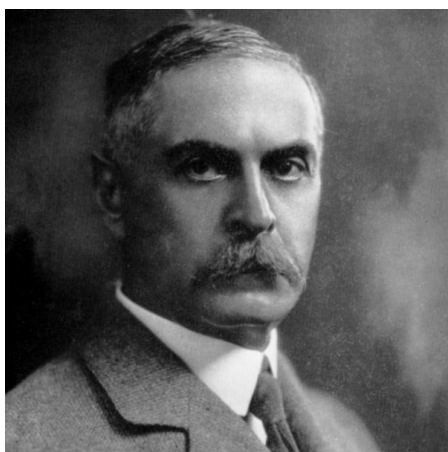
Natural Selections

A NEWSLETTER OF THE ROCKEFELLER UNIVERSITY COMMUNITY

Twenty-four visits to Stockholm: a concise history of the Rockefeller Nobel Prizes. Part II: Karl Landsteiner, 1930 Prize in Physiology or Medicine

JOSEPH LUNA

“Blood is a quite peculiar juice.” When the German poet, statesman and erstwhile scientist Goethe wrote those words in the early 1800s, he might as well have been paraphrasing a problem that physicians had been encountering for at least 150 years prior. It was apparent, since antiquity, that blood is essential for life. And as blood largely looked and behaved the same, it wasn’t a great leap to consider transfusing blood from one being to save another. The realities however, were disastrous: foreign blood would clump (agglutinate) inside a recipient patient, leading to rapid destruction of the incoming blood, followed by hemorrhage and death. Animal-to-human transfusions were performed as early as the mid-17th century with occasional success, but the procedure was risky, often fatal and complicated by religious concerns. Human-to-human transfusions were no different and were considered only as a last resort by the 19th century. Absent a scientific explanation as to why blood transfusions sometimes saved or sometimes killed, with no apparent pattern, religious or supernatural explanations naturally attempted to fill the void.



Karl Landsteiner

That is until 1901. Working in Vienna, a young immunologist named Karl Landsteiner stumbled into solving the incompatibility of blood problem, while at first looking to answer a different question on agglutination. When Landsteiner started working, blood agglutination tests had been recently developed to detect if someone was infected with a microbe by mixing the patients’ blood with the microbe. If there was clumping, the patient likely was infected. For many immunologists at the time, it was thought that clumping was thus a characteristic of diseased blood, and so problems with blood transfusions could be explained as undiagnosed pathologies. Landsteiner’s great insight was to first question the pathology premise by asking if normal blood clumped. And who could be more normal, he figured, than he and his lab mates.

Landsteiner gathered the men and women in the lab and bled them, himself included. He then separated the two components of blood, the serum (the relatively clear liquid part) from the red blood cells. Upon mixing the serum from one person with the blood cells of another, he observed clumping, suggesting that agglutination wasn’t pathological, it was found in the otherwise normal people in the lab. He then took it a step further by trying every combination of serum plus blood from his lab mates. To everyone’s surprise, it was not random (see image on the right). The top table shows the results of men in the lab when one’s serum on the y-axis was mixed with the others blood on the x-axis. By the pattern of pluses (clumping) and minuses (no clumping), it became quickly clear that each person fell within one of three types. Dr. Sturli and Dr. Erdheim had the same

clumping pattern (called A); Dr. Pletchnig and Landsteiner’s assistant Zaritsch “Zar” had another (called B); and still another was found in Dr. Störk and Landsteiner himself (called C, but later O). Summarized in the lower table, he performed the same test on six women, all mothers, and found the same result: three basic blood groups. The practical implications to match donors with recipients by type were immediately apparent for safe transfusions.

These twelve men and women were the first to be blood typed. By the time of the Great War, this basic test was performed thousands of times before blood donation to save soldiers at front lines on both sides. Landsteiner had moved onto others’ problems by then, all geared toward trying to explain what chemically made an immune reaction so specific, but life in wartime Austria was difficult. He worked a series of jobs at hospitals throughout Vienna during the war and afterwards in Holland, where although he was a world famous immunol-

Tabelle I, betreffend das Blut sechs anscheinend gesunder Männer.									
Sera									
Dr. St.	+	+	+	+	+	+	+	+	+
Dr. Plechn.	+	+	+	+	+	+	+	+	+
Dr. Sturli.	+	+	+	+	+	+	+	+	+
Dr. Erdh.	+	+	+	+	+	+	+	+	+
Zar.	+	+	+	+	+	+	+	+	+
Landst.	+	+	+	+	+	+	+	+	+
Blutkörperchen von:									
	Dr. St.	Dr. Plechn.	Dr. Sturli.	Dr. Erdh.	Zar.	Landst.			
Dr. St.	+	+	+	+	+	+			
Dr. Plechn.	+	+	+	+	+	+			
Dr. Sturli.	+	+	+	+	+	+			
Dr. Erdh.	+	+	+	+	+	+			
Zar.	+	+	+	+	+	+			
Landst.	+	+	+	+	+	+			

Tabelle II, betreffend das Blut von sechs anscheinend gesunden Puerperae.									
Sera									
Seil.	+	+	+	+	+	+	+	+	+
Linam.	+	+	+	+	+	+	+	+	+
Lust.	+	+	+	+	+	+	+	+	+
Mittelb.	+	+	+	+	+	+	+	+	+
Tomasch.	+	+	+	+	+	+	+	+	+
Graupn.	+	+	+	+	+	+	+	+	+
Blutkörperchen von:									
	Seil.	Linam.	Lust.	Mittelb.	Tomasch.	Graupn.			
Seil.	+	+	+	+	+	+			
Linam.	+	+	+	+	+	+			
Lust.	+	+	+	+	+	+			
Mittelb.	+	+	+	+	+	+			
Tomasch.	+	+	+	+	+	+			
Graupn.	+	+	+	+	+	+			

(From Wien. Klin. Wschr. 1901, 14, 1132-1134)

ogist, he performed routine pathology work for a hospital during the day to make ends meet. It was then, in 1922, that he received a lifeline back to the bench: an offer to join The Rockefeller Institute in New York.

Karl Landsteiner was in his mid-50s when he arrived in America in 1923. Nowadays he could be considered a mid-career hire, but at the time most viewed his appointment as one of a man already near retirement. Landsteiner proved everyone wrong. He worked and made great contributions to basic immunology, from studies on adjuvants to antibodies to allergies,

and trained scores of scientists. And it was at Rockefeller that he returned to studying blood groups and discovered the Rhesus (Rh) factor, whose presence or absence explained the occasional but serious incompatibilities between matched blood types, and is the reason blood types in popular usage are always A-positive or O-negative.

It is estimated that one billion people have been saved through blood transfusions made possible with knowledge of blood groups. It is perhaps fitting then, that Landsteiner was among those with type O. He was a universal donor.

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For Your Consideration – Ones to Watch, Vol. 2 Edition

JIM KELLER

This month we examine the leading ladies of the Best Actress race. The category remains ever flimsy—especially with comparison to the number of men competing for Best Actor this year. It is sadly a sign of the times: there are not a lot of leading roles for women in Hollywood. But the good thing is that three perspective nominees are overdue for a win. Last year at this time, our eventual Best Actress winner was pretty much decided, this year we're lucky enough to even be able to cobble together a race for the women at all. I'd venture to guess, as was the case last year, that our winner is right underneath our noses in these pages. So let's first discuss what happened with last year's crop of ladies from FYC and see who won the affections of Oscar.

Although Sandra Bullock and Meryl Streep received Best Actress nominations for *Gravity* and *August: Osage County*, the Best Actress Oscar went to Cate Blanchett for *Blue Jasmine*. Unlike the Best Actor category last year, there weren't any snubs from our Best Actress coverage. Bérénice Bejo's performance in *The Past* just didn't gain enough steam to push her through to a nomination. As for Kate Winslet in *Labor Day* and Marion Cotillard in *The Immigrant*, both films were pushed back by the studios until 2014, but neither performance will figure in this year's race.

THE QUEEN BEE: Meryl Streep – *Into the Woods* (director: Rob Marshall):

FYC: This film adaptation of the Tony award-winning Broadway musical features a witch (Streep) who teaches important lessons to various Grimms' Fairy Tales characters including Little Red Riding Hood, Cinderella, and Rapunzel. Streep has been discussed every year that FYC has existed. The actress has no fewer than 15 Oscar nominations under her belt (including Best Actress for last year's *August: Osage County*) and three Oscar wins—two in lead (*Sophie's Choice* in 1983 and *The Iron Lady* in 2011), and one in supporting (*Kramer vs. Kramer* in 1980). For any other actress playing this role likely wouldn't yield serious Oscar consideration, but it's Meryl-Freakin'-Streep, 'nuff said. Update: Just before the issue went to press it was announced Streep will be campaigned as Supporting.

THE BRIDESMAID: Julianne Moore – *Still Alice* (director: Richard Glatzer and Wash Westmoreland):

FYC: The film follows Alice Howland, a well-respected linguistics professor who begins to forget words, receives a devastating diagnosis, and is severely tested along with her family. Moore has been nominated for four Oscars, beginning in 1998 for her supporting role in *Boogie Nights*, followed by a Best Actress nomination in 2000 for *The End of the Affair*. Moore then went on to earn two nominations in 2002: Best Actress for *Far From Heaven* and Best Supporting Actress for *The Hours*. When she won the Best Actress award at this year's Cannes Film Festival for *Maps to the Stars*, it began to look like it might finally be her year, but then the studio announced that the film would not receive an Oscar-qualifying run. Undeterred, Moore won rave reviews for *Still Alice* at last month's Toronto Film Festival and is considered by some to be the one to beat. Update: It was just announced that *Maps to the Stars* will receive an Oscar-qualifying run after all.

THE COMEBACK KID: Reese Witherspoon – *Wild* (director: Jean-Marc Vallée):

FYC: This biographical drama is based on Cheryl Strayed's memoir *Wild: From Lost to Found on the Pacific Crest Trail*, which chronicles her 1,100-mile hike undertaken in an attempt to heal from catastrophe. Witherspoon won the Best Actress Oscar in 2006 for *Walk the Line*. Since then, her film choices have left her out in the cold where the Academy is concerned. The performance is said to be Witherspoon's rawest to date (read: no make-up) and when it premiered at this summer's Telluride Film Festival, she won over critics. If the film can maintain momentum as the race progresses, Witherspoon will likely compete for Oscar gold.

THE ARTIST: Amy Adams – *Big Eyes* (director: Tim Burton):

FYC: This drama examines the career trajectory of painter Margaret Keane (Adams), her success in the 1950s, and the subsequent legal battle she had with her husband Walter (Christoph Waltz), who claimed her work of big eyed children as his own in the 1960s.

Adams is the second woman of the three referenced at the top who is overdue for an Oscar. Beginning in 2006 with a supporting role in *Junebug*, she amassed three more nominations in the supporting category for *Doubt*, *The Fighter*, and *The Master* in 2009, 2011, and 2013, respectively. Last year, Adams earned her first Best Actress nomination for *American Hustle*. The trailer looks promising and she has a lot of material to work with from the story line alone. I'd wager we'll be hearing Adams's name when the nominees are announced.

THE PIONEER: Hilary Swank – *The Homesman* (director: Tommy Lee Jones):

FYC: The film is an adaptation of Glendon Swarthout's 1988 novel of the same name, which follows a claim jumper (Tommy Lee Jones) and pioneer woman Mary Bee Cuddy (Swank), who teamed up to escort three insane women from Nebraska to Iowa. Swank won her first of two Best Actress Oscars in 2000 for *Boys Don't Cry* and her second in 2005 for *Million Dollar Baby*. She's considered one of the most Oscar-baity working actresses in Hollywood. However, if the film fails to impress critics, history dictates that Swank's Oscar chances will fall by the wayside (see 2009's *Amelia* and 2010's *Conviction*).

THE BUSINESS WOMAN: Jessica Chastain – *A Most Violent Year* (director: J.C. Chandor):

FYC: The film is a thriller set in New York City during the winter of 1981, considered one of the most violent years in the city's history. It focuses on an immigrant and his family who are trying to expand their business as violence and corruption close in and threaten to destroy all they have. Chastain is the third of our leading ladies vying for Oscar this year who is considered overdue for a win. In the three years that she has been in the public eye, Chastain has earned two nominations, one supporting for *The Help* in 2012 and the second in lead for *Zero Dark Thirty*—the latter which she narrowly lost to perpetual it-girl Jennifer Lawrence for *Silver Lin-*

ings Playbook. It's just a matter of time until one of her nominations becomes a win and, this could be the role to do it.

THE BRIT: Rosamund Pike – *Gone Girl* (director: David Fincher):

FYC: The mystery-thriller based on Gillian Flynn's 2012 novel of the same name has easily become one of the most anticipated titles of the year. It deals with a man (Ben Affleck) whose wife (Pike) disappears, leaving him the main suspect amidst an intense media circus. Pike was an unusual choice for this coveted lead and an even more unusual choice for Oscar speculation, but here she sits. Perhaps best known for her portrayal of the all-knowing Helen in 2009's *An Education*, Pike and the cast were nominated for Outstanding Performance by a Cast in a Motion Picture by the Screen Actor's Guild (SAG). For sure, it would be quite a feat to go from zero Academy recognition to overnight sensation and eventual Oscar winner, but stranger things have happened, and as the advance film reviews trickle in, don't count her out.

Last month's column, which covered the Best Actor race, indicated that 44 men are vying for the top five slots and boasted nine men to watch. I wish the same were true for the women. To give you an idea, outside of the seven women discussed here (which was a stretch, believe me), I count only 17 other women who could possibly find their way into the race. Of these, there are really only four viable contenders including Juliette Binoche for *Clouds of Sils Maria* and Jennifer Connelly for *Shelter*. This could change if Werner Herzog's Nicole Kidman starrer, *Queen of the Desert*, or Stephen Daldry's Rooney Mara vehicle *Trash*, bow this year. But as the festival circuit heads into its last leg and the critic groups ready themselves to weigh-in over the holidays, time is short and where the race is concerned, every moment counts. Now is the time to make a move, if one is to be made at all. We'll return in December with our first look at the supporting actor races. So until then, if you have aspirations to write a screenplay, consider writing a spec script about a strong, female character. It's time to do something about this before women are erased from film altogether.

TED Talks

SUSAN RUSSO

You may already know that, with more than 1,000,000,000 free views online, TED Talks (www.tedtalks.com) have become a worldwide medium for pondering new ideas, creating discussion on areas of serious concern, enjoying humor with an edge, or just taking a break from your normal (or abnormal) way of life. TED stands for Technology, Entertainment, Design. The company's 2007 mission statement pledged "free knowledge and inspiration." Since 2006, the online presentations have been subtitled by volunteers in over 80 languages.

Following the recent climate marches in New York and throughout the world, and the United Nations meeting on Climate Summit 2014, you might want to visit the website to hear Nicholas Stern in his recent talk on "The state of the climate -- and what we might do about it." TED Talks is designed to bring well-known and some previously unknown speakers to us in short, lively filmed presentations on topics such as the Amazon, parenting, 3D print-

ing, "mak[ing] stress your friend," classical music, "why we cheat," quadcopters, and comedy. Speakers have been Bill Gates, Al Gore, Malcolm Gladwell, Bono, Bill Clinton, Sergey Brin, Vijay Kumar, and Sarah Silverman (the latter's talk during a conference filming was not presented online.)

TED Talks grew out of a TED conference in 1984 organized by Richard Wurman and Harry Marks. This one-time production morphed into an annual conference in Monterey, California, starting in 1990, with an admission price of \$475. In 2012, the TED conference price was \$7,500 per ticket, for a four-day event of talks and music, and what were hoped to be informal productive, or at least interesting, interactions. Tickets are by invitation only, or may be applied for with a form including an essay and references. The conferences are also simulcast in the US and Europe, to paying audiences.

TED Talks themselves have a maximum 18-minute time space

and are filmed before a live audience, with eight cameras. Besides invited speakers, since 2012 TED Talks has offered public auditions. TED Talks are edited by a group of TED “curators,” if necessary, to encourage stories rather than statistics for maximum audience appeal. One speaker has been reported to have even hired an acting coach. It has also been said that TED staff attend rehearsals

to provide applause and laughs to prepare tyro speakers’ timing for audience reaction. For these reasons, some critics have dubbed the videos more entertainment than substance.

Take a look at some TED Talks and write about one for Natural Selections if it interests you. We would appreciate the opportunity to share your opinion.

Ebola

AILEEN MARSHALL

Are you like me and you’ve heard about the Ebola virus in the news, but didn’t really pay attention? Do you wonder if there’s anything to worry about? In doing the research, it seems there is little chance to be infected in the US. Here is a summary of what’s going on with the current outbreak.

First, a little history. The first outbreak was identified in 1976. It was named after the Ebola River, near the first outbreak, in Zaire, now known as the Republic of Congo. That original epidemic caused 280 deaths, with an 88% fatality rate—WHO (World Health Organization) helped to contain that plague. There were later outbreaks in the Republic of Congo in 1995, 2003, 2007 and 2012 and in Uganda in 2000. Each killed several hundred people, with fatality rates ranging from 60 to 90%. The current outbreak is in Guinea, Liberia, Sierra Leone and Nigeria. Over 2000 deaths have occurred in this outbreak.

Ebola Hemorrhagic Fever (EHF) is caused by the Ebola virus. This virus is a member of the family Filoviridae, the genus Ebolavirus. The specific species is the Zaire ebolavirus. Although it is not known for sure, the most likely animal reservoir is fruit bats. The bats will carry the virus, but not get sick. They will bite into a piece of fruit, leaving their saliva on it, and drop it to the ground. Some other animal, perhaps a dog or a monkey will touch or eat the fruit and become infected. The animal then passes the disease along to a human by some contact. A person can get the virus from an animal bite, or handling the animal or the meat. Once Ebola is in a human host, it spreads from person to person by contact with bodily fluids. Many healthcare workers in West Africa have contracted the disease either by not having enough personal protective equipment (PPE) such as masks or gloves, re-using infected needles, or not hand washing due to lack of running water. It is important to note that Ebola can only be contracted through direct contact with an infected person’s bodily fluids. Ebola is not airborne, like the flu. So it is unlikely for anyone here to get Ebola unless they are in direct contact with someone recently infected in Africa.

Ebola can be difficult to diagnose early, since the symptoms are much like that of other common infections: fever, fatigue, headaches, joint and muscle pain, and abdominal pain. Later, diarrhea and vomiting occur. Symptoms appear between two and 21 days from infection. Later, in the bleeding phase, a rash, red eyes, bruising and bloody vomit appear, usually between five and seven days after the first symptoms appear. The virus is caused by internal bleeding.

Because the early symptoms are vague and flu-like, diagnosis can be difficult. It is suspected if a patient has had recent contact with an infected person. If so, the patient must be quarantined immediately. There are tests that detect antibodies in a blood sample, but, some of the tests are not available in under developed areas like West Africa.

Currently, there are no approved treatments or vaccines for EHF. The numbers of infected people are not enough to have spurred interest from the pharmaceutical companies. However, because the current outbreak having spread so much further than the previous ones, WHO has declared an emergency situation. It encouraged all medical regulatory agencies to fast track any medicines or vaccines in development. There are a few drugs getting ready to go to Phase I clinical trials.

Currently treatments to support patients’ immune systems are administering fluids, electrolytes, painkillers, anti-emetics, oxygen, etc., and treating concurrent infections.

There are two drugs being developed as treatments: ZMapp and TKM-Ebola. These have been approved by the FDA to be used in this current emergency situation. ZMapp is a combination of three different monoclonal antibodies that bind the virus in the blood. It’s still in early stage of development, it’s not known if it works, it has not yet completed Phase I clinical trials. TKM-Ebola uses small interfering RNAs. Both of these drugs have been tested in monkeys and guinea pigs, with promising results.

Another treatment that has been used is to give a blood transfusion from an Ebola survivor. The reasoning is that the survivor must have developed antibodies against the virus. WHO has encouraged this as the first treatment of choice, although it has not been systematically studied in humans.

There are two promising vaccines that have been effective in non-human primates in preclinical research. The most promising one is rVSV. It’s a vector from vesicular stomatitis virus carrying a glycoprotein from the Ebola virus. It has produced one year of protection in monkeys. Human trials of this vaccine were started in September. These trials came about due to collaboration and support from the National Institutes of Health, Glaxo Smith Kline, the Public Health Agency of Canada, Wellcome Trust and the British Medical Research Council. Phase I clinical trials using another possible vaccine ChAd3, also just started. It’s a disabled virus from chimpanzee derived replication defective adenovirus. However, this vaccine requires booster shots, which are difficult to do in current outbreak countries.



New York State of Mind

This Month Natural Selections interviews Nicholas Riedinger, Information Security Analyst, Information Technology.

1. How long have you been living in the New York area? All my life! I was born in Bushwick, Brooklyn.

2. Where do you currently live? I live in Glendale, Queens. It's sort of on the border of Brooklyn. When I leave the house to come to work, I start out in Queens, get on the train in Brooklyn, and end up in Manhattan.

2. Which is your favorite neighborhood? I'm not sure how to answer this, since there's no one neighborhood that has it all! You got awesome food and diversity in Queens and Brooklyn, great museums and culture in Manhattan, and the Yankees in the Bronx. Staten Island doesn't really count, does it?

3. What do you think is the most overrated thing in the city? And underrated? Overrated: Has to be New Year's Eve in Times Square! Seriously. What is wrong with people?! How can they stand there in the bitter cold for 16 hours straight, huddled in with a hundred thousand people without any bathroom breaks?!

Underrated: Probably the convenience. Yes, we all know it's convenient, but have you tried living anywhere else for a prolonged period of time?! Driving to get eggs or a gallon of milk gets old really fast. So does not being able to read a book during your commute because you have to keep your eyes on the road. I love the fact that for \$2.50 I can travel almost anywhere in the city and find so many different things to see and do!

4. What do you miss most when you are out of town? Being able to get a slice of pizza or stop by a halal cart at 1:30 am just 'cause. The sound of the city stirring outside the bedroom window when trying to sleep anywhere else.

5. If you could change one thing about NYC, what would that be? Probably the crowding. Seriously, if there's not enough room on the train wait for the next one! I'm looking at you, people who get on the L train at Bedford Ave! Don't even get me started on the 4,5, 6 trains!

6. What is your favorite weekend activity in NYC? This will probably sound boring, but I enjoy not being in the city. I like not taking the train or bus and going for a drive. Or just binge watching something on Netflix with my wife and Smokey (our cat). Being able to slow down and take a step back is refreshing. Like Ferris Bueller said: "Life moves pretty fast. If you don't stop and look around once



in a while, you could miss it."

7. What is the most memorable experience you have had in NYC? Probably the first time I held hands with my wife. We were walking around 42nd and 7th on a cold winter night and trying not to get lost in the crowd. We both grabbed each other's hand and it was like all the people and the cold just went away. We go back to that corner every year to reminisce and to get a picture of ourselves one year older (and hopefully wiser). We haven't been punched by Elmo...yet.

8. If you could live anywhere else, where would that be? I might like to move to a place like Vermont beside a lake. It seems like a nice idea until I remember I can't live without pizza or an internet connection. I guess maple syrup is nice, but is it nice enough to deal with three feet of snow and no/terrible bagels? I don't think so.

9. Do you think of yourself as a New Yorker? Of course! There's nothing more New York than being able to swear in seven different languages when you only speak one and a half proficiently.

On behalf of the Natural Selections Editorial Board, it is our pleasure to invite you to attend our Open Meeting Thursday, Oct 30, at 5:30 pm, at the Faculty Club. This is a great opportunity to learn about the monthly on-campus publication, the Editorial Board, and the various ways you can get involved.

Writers, editors, artists, or people who are just curious about the production and content of Natural Selections are welcome to attend. Light refreshments will be provided.

Thank you,

The Natural Selections Editorial Board
<http://selections.rockefeller.edu/>

Culture Corner: Chuck Berry and the American Songbook—An Appreciation

BERNIE LANGS

I saw Chuck Berry, the founder of the music genre of rock 'n' roll in the 1950s, in concert in the midst of my life's blur of the mid-to-late 1980s at a fairly small New York City concert venue. He was paired up that evening with Ronnie Wood, the second banana guitarist of the Rolling Stones and the man whose presence in that band had rescued it when Mick Taylor quit out of nowhere in the mid-1970s. Berry was the headliner, and as usual, he was famously late. Ronnie announced he'd play while we waited for his sparring partner, and I still remember him struggling to sing the slow Robert Johnson blues masterpiece, "Love in Vain" when suddenly he just spoke into the microphone and announced, "Okay, here's the point." At that time on the planetary, Euclidean grid and map of rock history's great moments, he took his metal slide to his guitar and ripped out a monumental solo of deep emotional joy and pain, which is the signature mixture of the Blues. The Brits, of course, had rearranged and stolen the Blues methods in the 1960s from the African American players of the United States. When Berry arrived at the hall that night, he stole it back, at least for one evening.

Now Ronnie Wood can play a damn fine rock riff, that's for sure, but that night, when Berry went into his solos (leads), I would

stop dead in my tracks, listening in a state of raptured awe, reacting to the way he played around within the blues progressions he had speeded up in the 1950s, and given a jazz kick to, thus creating the new genre. All rock soloists in what is called the 1-4-5 progression are derivative of what Berry created (with some of his inspiration from the riffing of his long-time pianist Johnnie Johnson). But when Berry played his solos, it was like the time I saw Kevin Bacon in Central Park and my friend laughed and said, "I guess we win that six degrees of Kevin Bacon game because he's the source." Berry, quite literally, is the hub of the rock 'n' roll universe. The buck stops with him. His solos that night had a perfect distortion or dirtiness to them, and his phrasing was utterly original—every single time he took a lead. The feelings powering his music are a complete joy, the bliss of the possibility of youth and of life. The idea that the future doesn't matter because the present is tinged with excitement, experimentation, and innocence. It was as if Berry was saying, "Well, the heck with it, let's cruise around in my Malibu." So I stood on the floor at that concert and I stopped tapping my foot or dancing a bit to the rock 'n' roll and stared at him, my mouth slightly open with more than a hint of a peaceful, contented smile.

By the time the film *American Graffiti*

looked back with nostalgia on the 1962 dramas of young people driving around in their automobiles in small town America, it was already an analytical gaze at an era long past. Berry was an oldies act as early as the 1970s when he was still barely middle-aged. I was in high school then and I went to the movie theater to see a concert film called *Let the Good Times Roll*. Berry headlines the film and at one point he looks out at the happy audience, who for at least that moment were being spared the slings and arrows of life's outrageous fortunes, and he says with a big grin, "All my children...all my children..."

That movie featured Bo Diddley as well, another African-American rock 'n' roll player from the 1950s who lived through the decade's frustration of being treated as a second-class entertainer simply because of his race. When I was in college in Providence, Rhode Island, Diddley would give shows at a great downtown club called Lupo's. One night, after his set and after many people had left, I saw Diddley sitting at the bar, so I sat next to him. I remember no specifics of our very mellow, slow-paced discussion, but I remember his demeanor and that he had a certain quiet dignity that I could tell he carried with him all the time. He often looked away as we spoke, out at nothing. About five or ten years later, I was given a surprise Chanukah/Christmas gift of a small electric piano for my Brooklyn apartment from my mother. When I asked her how she had picked it out, she told me that the friend she'd sent to buy it had been unsure which to pick and Diddley who was shopping in the store offered to help him make the selection. Some kind of cosmic rock circle had been completed.

There's another film with both Diddley and Berry, called *Hail! Hail! rock 'n Roll*, a 1987 documentary about a homecoming concert Berry is to give in Saint Louis, Missouri. There are extensive interviews with Berry and many other big rock stars, including the concert's music director, Keith Richards of the Rolling Stones (first banana to Ronnie Wood). There is a joint interview with Diddley, Berry, and 1950s outrageous performer Little Richard. The three of them are lamenting how they were treated early in their careers because of their race, and the story of how Pat Boone covered Little Richard's crazy and wild song "Tutti Frutti."



Chuck Berry on stage in 2010 (AP file photo)

ti,” which led to its recognition—not Little Richard’s own recording. A clip is shown of Boone on a 1950s show performing the fast-paced song, smiling broadly like my dad might have at my Bar Mitzvah. It was as strange to hear Pat Boone sing Little Richard as it would be if he were to rap Tupac or Jay Z songs on The Tonight Show. Although I have to admit there’s something endearing about his enthusiasm in belting out the madcap “Tutti Frutti.” When they cut back to Diddley, Berry, and Richards interview, one of them admits that Boone gave their music much needed exposure and his covers opened doors for them.

Berry has never been easy going. It’s obvious that he resented the subsequent fame of Elvis Presley, who never wrote songs or truly played guitar but gave rock ‘n’ roll the white face it needed in America to become a movement. Of course it’s not that simple, because Presley could sing like a demon and had loads of a star power. The greatest interpreter of Berry is Richards, and they’ve had a difficult friendship for decades, culminating in Richards’s lament in his autobiography about Berry’s harshness. Very famously, Richards once saw Berry back-

stage at a concert and came up behind him to give him a hug. Berry, thinking he was being attacked (or so he explained later) slugged Richards in the face giving him quite the shiner.

Richards plays the hell out of the riffs he learned and expanded on from Berry. The live album that was cut from the performances of the Stones at Madison Garden in 1969 included two songs by Berry, “Carol” and “Little Queenie.” Both of those tracks contain brief moments where rock ‘n’ roll reaches its quintessential heights. During Richards’s second solo in “Little Queenie,” he is about to come out of his phrasing and he bends two strings and stretches them quickly up and down, in Berry fashion, over and over and over again as the band hovers in timeless space and with the expectation and anticipation for him to release them—and all of us—from this mountainous peak of unfettered, impossible ecstasy to resolution and rest. During the performance of “Carol,” Richards peppers the space with Berry riffs between each phrase sung by Mick Jagger. But in one interlude, he joins guitarist, Mick Taylor with power chords instead of notes and it’s like the pumping

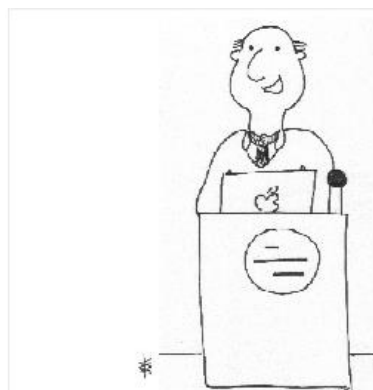
of a universal, throbbing heart, or a train chugging through the American landscape of our brightest dreams.

Berry is older now and I didn’t want an article I write about him to be an obituary. I come to praise Berry, not bury him. It’s said that Aaron Copland wrote the American Songbook. In the words of Forrest Gump, “Now, I don’t know about that.” Berry’s lyrics and style captured the vibe in America after two wars that had left it tired and empty. His words are about simple concepts of the experience of youth in the United States which would never again be expressed as well. Groups like the Beach Boys and writers like John Mellencamp and Tom Petty extended his ideas. Berry smiles at our innocence while at the same time he’s winking at our playful mischief. Cars, juke boxes, “monkey business,” strumming your guitar by the railroad tracks, Berry was an African American who sang “I’m so glad I’m livin’ in the USA” at a time when Southern restaurants had Jim Crow laws. It’s part of his lesson and part of his legacy: play through the pain and you’ll emerge just fine—just fine—on the other side.

Ten Years of Natural Selections

DANIEL BRISKIN

Continuing on with our salute to the tenth anniversary of Natural Selections, here is a comic republished from 2004. •



Finally I would like to thank the members of my lab... After the standing ovation, I'd be happy to take any questions.



Frankly, my dear, I don't give a damn... Next question.....



I arrived late at night for a short weekend in Winchester, England. I discovered the city the next morning. On my way downtown, there was an old cemetery, which could have been there for centuries. Further, there was no one by the arches of the cathedral—it actually had just rained. The only colorful spot I could see was a bright red Mini Cooper.



All photos contributed by Elodie Pauwels,
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