Join us for our February Meeting...

The Translations Project, Secular Rescue, and De-conversion from Evangelical Christianity

Our Speaker: Melissa Krawczyk grew up as an evangelical Christian who leaned toward fundamentalism in college. She wanted to be a missionary and Bible translator and despised renowned evolutionary biologist, Richard Dawkins.

Today, she is the Director of the *Translations Project* of The Richard Dawkins Foundation for Reason and Science (RDFRS, a division of the Center For Inquiry), which is committed to translating secular and atheist literature into Arabic and other languages across the Islamic world.

Melissa Krawczyk, Director of the Translations Project.

Melissa is also a Case Manager of the foundation's *Secular Rescue* project, which helps persecuted atheist activists in oppressive countries.

Melissa was a materials and process engineer and loves languages. She has studied Arabic for close to fifteen years and will soon undertake a Master's program in Arabic to English translation. She will join us to talk about the Translations Project, Secular Rescue & her de-conversion journey.

When: Saturday, February 15, 2019
Where: Valle Verde Theater. 900 Calle De Los Amigos, Santa Barbara, CA.
Parking: Please park at Veronica Springs Church, 949 Veronica Springs Road. Free shuttle to and from meeting. *No parking at Valle Verde* (except for bicycles & handicapped parking). Shuttle driver has a dedicated cellphone: 805-679-3660
Time: Doors open at **2:30 pm**. Program begins promptly at **3:00 pm**
Meeting Donation: $2 members, $5 non-members. Students with ID are free.
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Optional After Meeting Dinner Buffet: Join us for dinner at Valle Verde, $25 per person. We are required to provide a firm count for dinner, therefore **please RSVP to Judy Fontana at** **judithannfontana@yahoo.com** **by noon Wednesday February 12.** Parking lot shuttle also available after dinner.

For More Info: Call 805-769-4772

Our January Program: Self-Driving Cars?
Horus Muchen Wu, Sr. Software Engineer,
Autonomous Vehicles - 1-18-20
By Robert Bernstein

Horus Wu is a senior software engineer working in one of the cutting-edge areas of research in Silicon Valley and around the world: Autonomous Vehicles (AV), also known as Self-Driving Cars (Note: Horus' preferred pronouns are "they, their, them" so that is what I will use in this article). Horus took time out of their busy schedule to fly down and speak to HSSB about the technology and about some of the social issues of Self-Driving Cars. They made it clear at the start they were only expressing their opinions and not those of their employers (Horus is the only person I know who actually *left* Google for another opportunity).

Why talk about Self-Driving Cars? The industry is not making money; in fact, a lot of money has been invested with no return so far.

Horus shared CDC data that showed unintentional injuries as the #3 cause of death in the U.S. Car crash injuries are equivalent to a 737 airliner crashing 5 days per week, every week. Few people would take a 737 at that risk level! Self-driving cars have the opportunity to reduce deaths from human-error auto accidents. [Horus' presentation slides can be found here.](#)

Then there is the matter of time wasted in traffic. In the San Francisco-Oakland area 103 hours per year per auto commuter are estimated to be wasted per in traffic. According to a [Texas A&M Urban Mobility Information Report,](#) 162 lifetimes are wasted each day in traffic in the U.S. I am surprised the numbers are not higher. Self-driving cars could free up drivers to accomplish other tasks during their drive times.

Horus now walks to work. Their boyfriend commutes 1.5 hours per day each way. Caltrain takes 45-57 minutes between Mountain View and San Francisco for the Baby Bullet. It is rare to get a seat and it is expensive. If that Baby Bullet is missed, the regular train takes 75 minutes. Horus gets carsick if someone else is driving. There's got to be a better way.

Horus referenced a book by Atul Gawande, called *Being Mortal: Medicine and What Matters in the End* about end of life issues. Horus' mother still lives in central China and has three sisters. When their grandmother was hit by a car, there were four daughters to look after her. Horus was born under China's One Child policy. Horus' parents are divorced, so Horus has sole responsibility for each of them from an ocean away. The mother no longer drives. The father still drives. In the U.S. you lose freedom and autonomy and can become isolated if you can't drive which contributes to depression and accelerated aging. Being mobile matters!

China has better public transit than the U.S. but the transit infrastructure in China is less friendly to the blind or those in wheelchairs than in the U.S. Driving is a high-risk activity. Just one accident can cause a driver to doubt their abilities. Self-driving cars can provide more freedom and autonomy for mobility- or sensory-challenged people.

The current research focus is on creating a fully autonomous self-driving car. One may wonder, "Why not take a more incremental approach?"

Cruise control has been around for many years. Adaptive cruise control allows this to work in traffic, keeping a safe following distance. Lane control is another feature becoming more common, but can lead to mistakes, depending on the strategy used. With some strategies, a car on the freeway may follow an exiting car off the freeway instead of continuing straight ahead.

Horus described five stages of automation:
Source: [Self-Driving Car Levels of Autonomy](#)
   0) No Automation: Zero autonomy; the driver performs all driving tasks.
   1) Driver Assistance: Vehicle is controlled by the driver, but some driving assist

features may be included in the vehicle design.

2) Partial Automation: Vehicle has combined automated functions, like acceleration and steering, but the driver must remain engaged with the driving task and monitor the environment at all times.

3) Conditional Automation: Driver is a necessity, but is not required to monitor the environment. The driver must be ready to take control of the vehicle at all times with notice.

4) High Automation: The vehicle is capable of performing all driving functions under certain conditions. The driver may have the option to control the vehicle.

5) Full Automation: The vehicle is capable of performing all driving functions under all conditions. The driver may or may not have the option to control the vehicle.

The most dangerous of the five levels of automation is Level 3: Conditional Automation. Most of the time the car seems to be safely in control and humans can be lulled into a false sense of security. Horus showed a startling video of a couple actually asleep in the front seat of their Tesla while the car was speeding along on Highway 90 near Boston! When the car is doing *most* of the driving it can be hard for humans to stay awake and pay attention to developing unusual or hazardous conditions.

Safety requires either lower levels of automation or a leapfrog to Level 4: High Automation, where the vehicle is capable of performing all driving functions under certain conditions.

How hard is it to get to Level 4? Horus showed a video of the 2005 DARPA Grand Challenge. Autonomous Vehicles had to drive from Los Angeles to Las Vegas on a dirt road. It seemed that the challenge had been met and we were close to success *15 years ago*. The vehicles could handle a winding road with sheer drops on the

side. A human might get flustered by this, but the autonomous vehicles just focused on the job at hand and drove (DARPA Road Challenge).

However, the problem in actual city traffic is much harder. Horus showed a video of common driving conditions in San Francisco: double-parked vehicles, delivery vehicles, scooters, bikes, pedestrians seemingly coming out of nowhere. How does a driver or an AV decide how to get around a double-parked vehicle or decide to back up or pull over so that another vehicle can turn around or pull through?

Waymo was formerly Google's self-driving car project. Its name apparently stands for the "New **Way** forward in **Mo**bility." We watched a video filmed by a reporter who followed a Waymo autonomous vehicle in Chandler, Arizona. Lane changes were tentative and somewhat agonizing to watch (thoughts of "Just go! Your hesitation is confusing other drivers!"). Often the human driver took over the Waymo vehicle. Waymo doesn't like its vehicles to be followed. In one case the human Waymo driver led the reporter to the police where the reporter was questioned and then released.

How do vehicles communicate? Humans give gestures and make eye contact. "No, you go first. Will you let me merge?" etc. One could imagine a kind of tentative Chicken Dance among self-driving cars. They are not networked. Could they be equipped with electronic sign boards to communicate with each other? Possibly, but this solution was banned as a possible distraction!

Unprotected left turns are difficult for self-driving cars to handle. There are so many unpredictable things that can happen. The videos following the Waymo vehicle always seemed to involve a driver taking over for unprotected left turns. Chandler is much easier city for driving than San Francisco-- and even Chandler has not been mastered.

How is this challenge being approached? The problem is divided into four areas: **Perception. Prediction. Planning. Control.**

Among these, Control is relatively well studied in the field of robotics. Perception, Prediction, and Planning are more complex challenges.

Perception, identifying what is in the vehicle's environment (also known as computer vision), is a huge challenge. First, the city and the roads of interest must be converted into a "semantic map". Then the vision system has to identify (by marking it with an electronic box) everything of interest: pedestrians, cars, speed limit signs, etc. What about trees? The system separates out those things that don't change such as houses, fences, and trees. Everything else, all the elements that aren't in the semantic map, must be attended to. Pedestrians are marked with green boxes. Cars are marked with red boxes.

And what about a person with a bicycle? Will it be properly identified? Will it be expected to move more like a person or more like a bicycle?

Prediction is anticipating what all of these items in the immediate driving environment are likely to do. An Uber self-driving car did cause a fatal accident when it misidentified a woman on a bike, and ran into her. Of course, human drivers sometimes kill people on bicycles (857 bicyclist killed by motor vehicles in 2018 according to NHTSA), but we are more alarmed by the concept of an autonomous vehicle causing a fatal accident… even if there might be fewer accidents overall.

Tracking moving objects is a key issue. If two humans are walking together it is important to keep track of both of their positions. Seeing half a person does not change the fact that it is really a whole person walking with another person. The Uber car didn't do that well. Waymo cars do better at waiting until they understand the situation.

Planning is deciding how to deal with all these elements while making progress towards the destination. Horus shared the details of an actual accident that took place between a Waymo vehicle and a bus on El Camino Real in Mountain View. Waymo wanted to make a right turn and incorrectly predicted that a following bus wouldn't try to pass it. Waymo moved left before making the right turn and the bus side-swiped it. No one was hurt in this collision.

When will we get to Level 4? We hear both sides. Some say this year; others say not in 30 years. A lot is perception. The current systems are based on "deep learning" which is very data greedy.

Since Horus' talk this announcement of a Level 5 car was made by Cruise/GM and Honda!

CNN.COM
GM and Honda unveil self-driving car with no steering wheel or pedals

Humans learn the basics of driving in ~100 hours of practice. A child can see one cat and not only recognize other cats, but can recognize that a tiger is a cat. Deep machine learning may need to see tens of thousands of cats to recognize cats. This is not practical for autonomous vehicles. We don't really understand how we humans do many of the things we do with ease. We easily walk on two feet. The internet is full of videos of biped robots falling in embarrassing ways.

But even before having fully autonomous driving, there are potential benefits to be realized. Driving trucks on a highway has fewer surprises than city traffic so may be a better application of autonomous vehicle technology.

Tu-Simple has a video of their work on this self-driving truck technology. USPS has contracted this service. It is easy for robots to surpass humans at driving long distance trucks. Humans fall asleep and stop paying attention. Busses are also an easier application than cars in some ways. Horus showed an ST Engineering video of a proposed mini-bus which runs a planned route in dedicated bus lanes with signal communication. A bus can have many sensors to eliminate blind spots.

Submitted by Nan Cisney.

Horus also played a video of an Amazon Scout small delivery vehicle that would run slowly on sidewalks. It has low risk of injuring anyone. It could provide economic value by eliminating the need for humans to walk that last bit, going door to door.

What happens if we succeed? Horus showed a map of the top job in each U.S. state. In a majority of states "Truck Driver" is the most common job. A truck driver's life can be lonely with days spent away from home and family, but if those jobs move to autonomous vehicles what jobs will be available to the current truckers?

Horus also showed the hourly cost of parking in major U.S. cities. New York was top at $27/hour. Autonomous vehicles could reduce the need for parking as they could keep circulating. People might not need to own their own car if shared autonomous vehicles were plentiful and reliable. The cost per mile of a shared autonomous vehicle is just 17 cents per mile compared to 57 cents per mile for a personal vehicle according to one estimate.

Horus then answered some questions. What if an animal runs in front of the car? The car has sensors all around. It can see what you cannot and it will stop.

Ron asked about the possibility of having a smart road. China is working on that. It is expensive and not always the best use of public funds.

Is the bus video real? It is conceptual, but quite far along. Still, a lot of unexpected things can happen even in a designated bus lane.

We have self-driving planes (drones). Yes, but that is much easier in steady flight than navigating the complexities of city driving and yet we still have a human pilot (maybe in a control room at a military base flying the drone). Planes might be safer if we eliminated the human error from the cockpit… but how many of us would board a pilot-free plane?

What about the weather? All of the tests have been in good weather in places that have nice weather most of the time. "Snow will be a challenge," but Horus thinks it will be easier to add weather accommodations once good weather driving is mastered.

Wayne asked about the unfair higher expected safety standards for autonomous vehicle performance vs. human drivers. Horus agreed it

is not fair to hold self-driving cars to a higher standard. She noted that human fear is not always data driven: travelers may be more concerned about the dangers of their flight than the dangers of the drive to the airport when statistically the drive is more risky than the flight!

Mayor Sheila Lodge asked how this might help the toll plaza bottleneck on the Oakland Bay Bridge. Autonomous vehicles could bypass the toll plazas completely with a transponder.

What about the Boeing 737Max example and the failure of its automation? A good question. Horus opined that many "tech nerds" have been insufficiently exposed to ethics or management trainin.. Different companies are approaching this challenge in different ways.

I will add that several of us were privileged to have lunch with Horus before the talk. We learned that Horus wanted to be referred to by the pronouns "they, their, them", not due to an issue of gender expression, but for a "new to us" reason. Horus said that in job interviews there can be gender bias and these pronouns help reduce that bias. Horus is particularly keen on being referred to as "they, them, their" in situations where gender *shouldn't* matter.

Dave, Judy, Horus & Robert enjoying lunch at Beachside Café at Goleta Beach before the meeting..
Photo provided by Robert Bernstein.

Horus originally intended to be a tech manager and was writing software both as a hobby and as a step on that path. Horus thought they could hardly be outstanding as a software engineer, but could more likely be an outstanding manager and have greater impact. After a few years of practice, they developed impressive software skills, and had a good shot making a difference being a software engineer instead of a manager.

I should add that this issue of autonomous vehicles is of great interest to me. Sustainable transportation has been of interest to me for a wide range of reasons. As a child in the 1970s, I saw the inevitability of running out of oil and other fuels. In the early 1980s I became aware of the climate crisis and the urgent need to stop using carbon fuels even if we were not running out. I then came to understand the social harm caused by heavily subsidized forced dependence on automobiles in the U.S. even if they ran on a free, unlimited, non-polluting energy source.

One third of Americans cannot drive and they are severely limited as a result. I wrote a chapter called "The Speed Trap" in the popular Shorter Work Time book called *Take Back Your Time.* I have made my chapter available here.

In my view, autonomous vehicles could be good or bad, depending on the economic fairness of the incentives. The advantages would include:
- Those who cannot drive would have affordable door to door transportation.
- Shared autonomous vehicles would reduce the need for parking. Half of urban land in the U.S. is paved over for motor vehicles or parking.
- Users would pay by usage which tends to reduce usage.
- Shared autonomous vehicles also separate out the attachment people have to the status-symbolism of car ownership.
- Autonomous vehicles could solve the "last mile" problem of public transit, making investment in public transit more efficient and practical.

- Another possibility is that autonomous vehicles can form "trains" on the highway which would reduce air resistance.   At highway speeds, most of the energy is used to move air. Coordinated, closely following vehicles can minimize this load.

My biggest concern on the down side is that autonomous vehicles could encourage more rural and suburban sprawl which would be the worst possible environmental outcome. It all comes down to charging the true cost for environmental impacts.

A government report (Office of Technology Assessment; Saving Energy in U.S. Transportation; U.S. Congress, OTA-ETI-589, 1994 page 118) showed that we subsidize private motor vehicle use in the U.S. at a cost of about a trillion dollars each year in various ways. If more Americans were aware of that staggering number, our conversations about land use, transportation, and public policy might be very different.

Book Review:

How To Tame A Fox (And Build A Dog)

By Diane Krohn

Here is a book to read in honor of Darwin Day (February 12, 2020): *How To Tame A Fox (And Build A Dog),* by Lee Alan Dugatkin and Lyudmila Trut. This is the true story about the famous Siberian fox study in which generations of foxes were chosen for calmness towards humans and what happened as each generation developed.

The story starts with Russian geneticist Dmitri Belyaez pursuing a theory about animal domestication and evolution. He and a colleague start an experiment in fox breeding which is daring and dangerous for the time: it's 1952 in the Soviet Union, and Lysenkoism is the prevailing ideology. To go against Lysenko was to be put into prison camps, deposed from your position, or killed (For those of you unfamiliar with Trofim Lysenko and Lysenkoism, it is the disproven idea that acquired characteristics of an organism could be inherited by that organism's descendants. It rejects Mendelian inheritance and the concept of a gene).
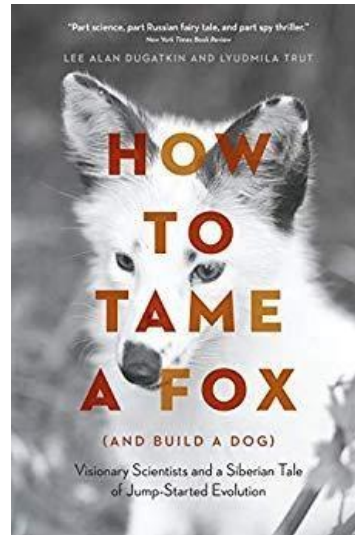
Fortunately for Belyaez and his colleague, the fox farm where they wished to try their experiments was located far from Moscow at an already-established fox breeding farm. Foxes are bred for their furs, a lucrative business in Soviet Russia at that time.   Belyaez wanted to mimic the evolution of the wolf into the dog, using foxes instead of wolves, and the fox farm provided a plentiful supply of animals for the experiment.

There are a number of questions about domestication that have not been solved: for example, why have very few animal species been domesticated; and why do domesticated species have certain characteristics in common with each other. These characteristics include such things as different coat colors not seen in the wild; ability to breed more than once a year; and neotonic features (babyish faces, floppy ears, curly tails).

Belyaez's idea is to select for foxes that are calmer around humans, and to keep breeding the calmer ones with each other. Control foxes are not selectively bred.   After about 8 generations of the selectively-bred foxes, some subtle new characteristics start to emerge; but it takes another four or so generations before a huge change is seen in the foxes: wagging their tails in response to humans. This is a signature behavior of dogs and unheard of in foxes, either in the wild or in captivity.

As the fox breeding program continued, more "dog-like" characteristics appear, such as spotted coats, floppy ears, and unique vocalizations. The foxes are noted to crave human companionship and are content to spend their days with humans. The foxes are not bred to emphasize the physical characteristics, but have continued to be bred based on calmness towards humans. The accompanying dog-like characteristics seem to demonstrate that various features of domestication are genetically linked to the animal's temperament: calmness and friendliness to humans.

This amazing experiment with foxes, and its implications for genetics, evolution and animal domestication, is still ongoing. As of the date of the book (2017), fifty-seven generations of foxes have been studied and domesticated. This is a fascinating book that should be read by all biologists. It is also highly recommended for those of us who are interested in the origins of the close relationship between humans and dogs. How To Tame A Fox. [Editor's Note: This fascinating study was also covered in the 10/18/09 episode of RadioLab on NPR.]

Unitarian Society of Santa Barbara Offering:
Great Decisions Foreign Policy Discussion Group

John Warnock, of the Unitarian Society of Santa Barbara (USSB) invited HSSB members to attend the 5th season of a program called *Great Decisions Foreign Policy Discussion Group* to be held twice a month on Wednesday evenings this spring at the Unitarian Society, 1535 Santa Barbara St. The sessions are typically taught by members of the UCSB faculty. Donations of $10 for each session are requested and there is a textbook available for $37.25 from the Foreign Policy Association. The Foreign Policy Association (formerly known as the League of Free Nations Association) is a non-profit organization founded in 1918 dedicated to inspiring the American public to learn more about the world. The Foreign Policy Association says they aim to spread global awareness and understanding of foreign policy issues. The text book and additional information about the Association can be found at www.fpa.org.
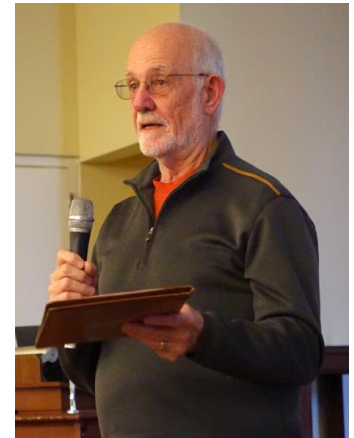
John Warnock, Unitarian Society Program Coordinator, announcing Great Decisions

Here are the topics and dates.
Feb 5: *Climate Change and the Global Order*
Feb 19: *India, Pakistan and Hindu Nationalism*
Mar 4: *Modern Slavery and Human Trafficking*
Mar 18: *The Middle East: What To Expect*
April 1: *U.S. Relations with Central America*
April 15: *China: Challenges to U.S. Commerce*
May 6: *The Philippines and the United States*
May 15: *Artificial Intelligence and Data*

Contact John at johnwwarnock@gmail.com if you are interested in attending USSB Great Decisions Group.

Submitted by Diane Krohn

Non HSSB Events of Interest

Upcoming Events in California:
- February 6: Dr. Mary-Claire King: *Understanding Genetics and Cancer.* UCSB Arts & Lectures event. Campbell Hall, UCSB. King Event
- February 19: Anita Hill: *From Social Movement to Social Impact: Putting an End to Sexual Harassment.* UCSB Arts & Lectures event. Campbell Hall, UCSB.
- February 29: Bill McKibben: *Our Changing Climate: A Global Movement of Reform.* UCSB Arts & Lectures event. Campbell Hall, UCSB. McKibben Event
- March 5: David Wallace-Wells: *Surviving the World: Making the Best of a Burdened Planet.* UCSB Arts & Lectures event. The New Vic Theater. Wallace-Wells Event
- March 10: *Anthropocene: The Human Epoch.* A film by Jennifer Baichwal, Nicholas de Pencier and Edward Burtynsky. Q&A with filmmaker follows the screening. UCSB Arts & Lectures event. Pollock Theater, UCSB.
- March 15: Eddie Tabash. *Why Atheism is True: Philosophy and Science Point to Naturalism.* CFI West, Los Angeles.
- March 31: Dr. Jane Goodall, DBE: *Gombe: 60 Years of Discovery.* UCSB Arts & Lectures event. Arlington Theater. Goodall Event
- April 5: Bryan Stevenson: *American Injustice: Mercy, Humanity and Making a Difference.* UCSB Arts & Lectures event. Granada Theater.
- February & March (multiple dates): *For the Love of a Glove: An Unauthorized Musical Fable About the Life of Michael Jackson, As told by His Glove.* CFI West, *Los Angeles.* https://cfiwest.org/events/

Upcoming Events Outside of California:
- April 9-12, 2020: American Atheists 2020 National Convention. Speakers include Allison Gill, Andrew Seidel, Katherine Stewart, Nick Fish, Seth Andrews, among others. Phoenix, AZ.

HSSB Calendar

Tuesday February 11: Board Meeting**.** 5:30 p.m. Home of Mary Wilk. Members are invited to attend. Dinner provided by David Echols.

Saturday February 15: Monthly Meeting 3:00 pm. Speaker: Melissa Krawczyk, Center For Inquiry/Richard Dawkins Institute. *Secular Rescue & The Translations Project*. Location: Valle Verde Theater, 900 Calle De Los Amigos, Santa Barbara.

Tuesday March 10: Board Meeting**.** 5:30 p.m. Home of Mary Wilk. Members are invited to attend. Dinner provided by Clover Brodhead Gowing.

Saturday March 14: Speaker: Hugh Neighbour, Smithsonian Lecturer & former U.S. diplomat. *How Foreign Policy Really Works: Diplomats' Tricks of the Trade*. Location: Valle Verde Theater, 900 Calle De Los Amigos, Santa Barbara. ****NOTE THIS IS THE 2ND SATURDAY (not our usual 3rd Saturday) OF MARCH****

Tuesday April 14: Board Meeting**.** 5:30 p.m. Home of Mary Wilk. Members are invited to attend. Dinner provided by Neal Faught**.**

Saturday April 18: Speaker: State Senator, Hannah Beth Jackson. *2020 Election & Coastal Development Issues*. Location: Valle Verde Theater, 900 Calle De Los Amigos, Santa Barbara.