

Video Scripts

Unit 1

Wide Awake Bakery

Stefan Senders: I don't want to say that the bakery is an experiment... but it's more like, it's more like saying *Why not? Why not do it right?*

My name is Stefan, Stefan Senders, and I'm a baker. I run the Wide Awake Bakery.

David McInnis: My name is David McInnis, and I am a baker at the Wide Awake Bakery.

Stefan: A lot of people think bread-making must be incredibly boring, so there was this first year where people would come stop by the bakery and they'd say, *Can you stand... you know, How's it going, man?* and they'd look at you with this way like, like, *How's your mental health?* you know? And... kind of figuring that at some point I'd be climbing the walls because it wasn't that exciting and every day I have to do the same thing over and over again. But actually, to me, there's a real pleasure in that; it goes back to this issue of practice, where this thing of getting deeper and deeper into something and figuring out the... the minutiae of it and how it feels. And there's always that kind of a sweet spot when you really just, just nail it.

David: You're learning a dance, and you're thinking about the steps all the time, and *What step am I going to do next?* And you're so conscious of like... the... conscious of the dance, you're thinking about what you're going to be doing and what you're supposed to be doing. And when you learn the dance, you just kind of do it; you don't have to think about it anymore. And I think that once you learn it and once you can just do it without being so conscious of it, then you really start to become it, or it starts to become you in a new kind of way, and I think you can really thrive within those... within those boundaries. You've now learned it, and you can now do something new within it.

Stefan: You're working with these microbes that you can't see, in partnership with them, and you're trying to think, you know, *What would they like? Would they like it a little warmer?* You know, and you're trying to make them happy. And, when do you have to get this bread out? How strong is the flour this week? And so you're trying to balance all these things, so it gets intellectually quite complex.

And then, when the loaves finally get to that point of being ready to go into the oven, you've done all this very physical work, and it sort of gets progressively finer until you're just putting that thing in. And you take that little razorblade, and you just say [Stefan makes cutting sound]. And you're making that beautiful visual pattern, and then you've got to catch it when it's at its peak, and you bring it out, and it's just full of charisma and its fabulous, and it's a very whole project.

David: Some objects suggest that the world is actually, basically banal and kind of perfunctory and ho-hum, and they invite kind of indifference I think is what those things do. And I think that other objects might suggest something more like that the world is full of grace and bounty and beauty, and they invite, instead of like, indifference, something closer to love. I'm interested in making something that invites love as a response.

Stefan: You know, we are fueled by, you know, this incredible energy around here. It's like a magic spot. People are so full of passion to make great food and to really change the way we look at the world. Right here, right, from their own houses and in their own ground. It's so inspiring, so it's easy to get up every day and think, *Let's go stack some wood, man! Light that fire!* It's not difficult.

Unit 2

Marie's Dictionary

Subtitle: In the United States more than 130 Native American languages are endangered. Several are on the verge of extinction with only a handful of fluent speakers remaining.

Marie Wilcox (in Wukchumni): A long time ago there were no people, only animals. Eagle, our leader, said to the animals, "We must make people." All the animals wanted people to have hands like theirs.

Marie: My name is Marie Wilcox. My grandmother delivered me Thanksgiving Day on November 24th, 1933. We only had a little one-room house. Grandpa and Grandma always spoke our language, Wukchumni. I just didn't hear my grandma speak too much English.

Jennifer Wilcox: Mom is our last fluent speaker now since my dad's uncle Felix Icho passed away. When I was growing up, I spoke English. I don't remember hearing Mom speaking the Wukchumni language. Mom worked in the fields. We picked a lot of fruit. And I think I missed a lot of school, but I don't know for sure.

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Marie: I left my Indian language behind when my grandma died. I didn't speak the language anymore until my sisters started to teach the kids. Hearing the girls try to speak their language again made me want to learn again. And I started remembering.

Jennifer: I was very surprised she could remember all that from her age... young age that her grandmother had left her. She just started writing down her words on envelopes and papers. And so she'd sit up night after night, typing on the computer which—she was never a computer person.

Marie: I'm just a pecker. One word at a time. And I was slow. Just peck, peck, peck. So when I had all these words together, I thought it would be a good idea to try to make a dictionary. I didn't say that I wanted to save it for anybody else to learn; I just wanted to get it together. Every morning, I'd, you know... have my coffee and have a sandwich or make me oatmeal or whatever, and then I'd get right on that.

Jennifer: It took many years for her to do this dictionary. She loved doing it. She would work many hours late at night and get up and work on it during the day.

Marie: And the X sound...

Jennifer: Oh, that's the hardest one for everybody.

Jennifer: I've been working with Mom on this dictionary for all the years, and I've helped her a lot.

Marie: The "A" right here.

Jennifer: Oh, there. It made the "tr" sound and the "ch" sound, sounds a little bit alike to me, but I don't...

Marie: [speaks in Wukchumni]... You got it?

Jennifer: I got it. I feel it!

Jennifer: It's very frustrating. Because she... she wanted to make sure I knew how to say the words right. So if I would say something, and she can't hear that well... *That's not how I said it.* You know, I would kind of get scolded.

Marie: We've got to go through this whole thing again because I didn't like the sentences. They didn't make sense to me.

Jennifer: It just seemed like it would take forever. I am very surprised that we've gotten as far as we have.

Jennifer: Do you want your jacket?

Marie: Yeah.

Marie (in Wukchumni): Coyote and Lizard wanted people to have hands like theirs. Eagle said, "Coyote and Lizard will run a race. Run to the top of the mountain and whoever puts their hands on top is the winner."

Marie (in Wukchumni): Thank you.

Donovan (in Wukchumni): You're welcome. Are you ready?

Marie (in Wukchumni): Yes.

Marie: Lake. Ocean. Sea. [words in Wukchumni] Leaf. [word in Wukchumni]

Marie: Me and my grandson are trying to record our dictionary from A to Z. The whole dictionary took me about 7 years. So that was a lot of work for me.

Marie: Language. Talk. Speak. [words in Wukchumni]

Marie: See, I'm uncertain about my language and who wants to keep it alive. Just a few. No one seems to want to learn. It's sad. It just seems weird that I am the last one. And... I don't know, it just... it'll just be gone one of these days maybe, I don't know. It might go on and on.

Marie (in Wukchumni): Put the rice in there. Actually get the...

Donovan (in Wukchumni): Colander?

Marie (in Wukchumni): Yes, the colander.

Donovan (in Wukchumni): OK. All of it?

Marie (in Wukchumni): Maybe. More. That's good.

Jennifer: I think she has a little confidence in me. And, but I know she has more confidence in Donovan because the way he's really connecting with her and learning the language so fast. Because I've been working on it all these years, you know, and I haven't been able to speak with her like he does.

Donovan (in Wukchumni): What now?

Marie (in Wukchumni): You need a lid like this for that. A little one.

Jennifer: My role, I feel, is to archive it all, make sure that it gets documented, and put somewhere to where, a hundred years from now, our families will be able to access and to be able to speak. And it will keep going with me and Donovan, I know.

Marie (in Wukchumni): Lizard was the first one to put his hands on the big rock and jumped up and down, laughing and saying, "Ha ha ha, I won! I won the race. Now people will have hands like mine."

Subtitle: Marie's dictionary is the first Wukchumni dictionary to be created. It serves as an inspiration to other Native American tribes working to revitalize their languages.

Unit 3

How to Reinvent the Apartment Building

Moshe Safdie: When, in 1960, still a student, I got a traveling fellowship to study housing in North America. We traveled the country. We saw public housing high-rise buildings in all major cities: New York, Philadelphia. Those who had no choice lived there. And then we traveled from suburb to suburb, and I came back thinking, *We've got to reinvent the apartment building*. There has to be another way of doing this. We can't sustain suburbs, so let's design a building which gives the qualities of a house to each unit.

Habitat would be all about gardens, contact with nature, streets instead of corridors. We prefabricated it so we would achieve economy, and there it is almost 50 years later. It's a very desirable place to live in. It's now a heritage building, but it did not proliferate.

In 1973, I made my first trip to China. It was the Cultural Revolution. We traveled the country, met with architects and planners. This is Beijing then, not a single high-rise building in Beijing or Shanghai. Shenzhen didn't even exist as a city. There were hardly any cars. Thirty years later, this is Beijing today. This is Hong Kong. If you're wealthy, you live there; if you're poor, you live there, but high density it is, and it's not just Asia. São Paulo, you can travel in a helicopter 45 minutes, seeing those high-rise buildings consume the 19th-century low-rise environment. And with it comes congestion, and we lose mobility, and so on and so forth.

So a few years ago, we decided to go back and rethink Habitat. Could we make it more affordable? Could we actually achieve this quality of life in the densities that are prevailing today? And we realized, it's basically about light; it's about sun; it's about nature; it's about fractalization. Can we open up the surface of the building so that it has more contact with the exterior?

We came up with a number of models: economy models, cheaper to build and more compact; membranes of housing which people could design their own house and create their own gardens. And then we decided to take New York as a test case, and we looked at Lower Manhattan. And we mapped all the building area in Manhattan. On the left is Manhattan today: blue for housing, red for office buildings, retail. On the right, we reconfigured it: the office buildings form the base, and then rising 75 stories above, are apartments. There's a street in the air on the 25th level, a community street. It's permeable. There are gardens and open spaces for the community, almost every unit with its own private garden and community space all around. And most important, permeable, open. It does not form a wall or an obstruction in the city, and light permeates everywhere.

And in the last two or three years, we've actually been, for the first time, realizing the quality of life of Habitat in real-life projects across Asia. This is Qinhuangdao in China: middle-income housing, where there is a bylaw that every apartment must receive three hours of sunlight that's measured in the winter solstice. And under construction in Singapore, again middle-income housing, gardens, community streets and parks and so on and so forth. And Colombo.

And I want to touch on one more issue, which is the design of the public realm. A hundred years after we've begun building with tall buildings, we are yet to understand how the tall high-rise building becomes a building block in making a city, in creating the public realm. In Singapore, we had an opportunity: 10 million square feet, extremely high density. Taking the concept of outdoor and indoor, promenades and parks integrated with intense urban life. So they are outdoor spaces and indoor spaces, and you move from one to the other, and there is contact with nature, and most relevantly, at every level of the structure, public gardens and open space: on the roof of the podium, climbing

up the towers, and finally on the roof, the sky park, two and a half acres, jogging paths, restaurants, and the world's longest swimming pool. And that's all I can tell you in five minutes.
Thank you.

Unit 4

Living Beyond Limits

Amy Purdy: If your life were a book, and you were the author, how would you want your story to go? That's the question that changed my life forever. Growing up in the hot Las Vegas desert, all I wanted was to be free. I would daydream about traveling the world, living in a place where it snowed, and I would picture all of the stories that I would go on to tell.

At the age of 19, the day after I graduated high school, I moved to a place where it snowed, and I became a massage therapist. With this job, all I needed were my hands and my massage table by my side, and I could go anywhere. For the first time in my life, I felt free, independent, and completely in control of my life. That is, until my life took a detour. I went home from work early one day with what I thought was the flu, and less than 24 hours later, I was in the hospital on life support with less than a two percent chance of living. It wasn't until days later as I lay in a coma that the doctors diagnosed me with bacterial meningitis, a vaccine-preventable blood infection. Over the course of two and a half months, I lost my spleen, my kidneys, the hearing in my left ear, and both of my legs below the knee.

When my parents wheeled me out of the hospital, I felt like I had been pieced back together like a patchwork doll. I thought the worst was over until weeks later when I saw my new legs for the first time. The calves were bulky blocks of metal, with pipes bolted together for the ankles and a yellow rubber foot with a raised rubber line from the toe to the ankle to look like a vein. I didn't know what to expect, but I wasn't expecting that.

With my mom by my side and tears streaming down our faces, I strapped on these chunky legs, and I stood up. They were so painful and so confining that all I could think was, how am I ever going to travel the world in these things? How was I ever going to live the life full of adventure and stories, as I always wanted? And how was I going to snowboard again?

That day, I went home, I crawled into bed, and this is what my life looked like for the next few months: me passed out, escaping from reality, with my legs resting by my side. I was absolutely physically and emotionally broken.

But I knew that, in order to move forward, I had to let go of the old Amy and learn to embrace the new Amy. And that is when it dawned on me that I didn't have to be five-foot-five anymore. I could be as tall as I wanted! Or as short as I wanted, depending on who I was dating. And if I snowboarded again, my feet aren't going to get cold. And best of all, I thought, I can make my feet the size of all the shoes that are on the sales rack. And I did! So there were benefits here.

It was this moment that I asked myself that life-defining question: If my life were a book, and I were the author, how would I want the story to go? And I began to daydream. I daydreamed like I did as a little girl, and I imagined myself walking gracefully, helping other people through my journey, and snowboarding again. And I didn't just see myself carving down a mountain of powder; I could actually feel it. I could feel the wind against my face and the beat of my racing heart as if it were happening in that very moment. And that is when a new chapter in my life began.

Four months later I was back up on a snowboard, although things didn't go quite as expected: My knees and my ankles wouldn't bend, and at one point I traumatized all the skiers on the chairlift when I fell and my legs, still attached to my snowboard, went flying down the mountain, and I was on top of the mountain still. I was so shocked. I was just as shocked as everybody else, and I was so discouraged, but I knew that if I could find the right pair of feet, that I would be able to do this again. And this is when I learned that our borders and our obstacles can only do two things: one, stop us in our tracks or two, force us to get creative.

I did a year of research, still couldn't figure out what kind of legs to use, couldn't find any resources that could help me. So I decided to make a pair myself. My leg maker and I put random parts together and we made a pair of feet, that I could snowboard in. As you can see, rusted bolts, rubber, wood, and neon pink duct tape. And yes, I can change my toenail polish. It was these legs and the best 21st birthday gift I could ever receive—a new kidney from my dad—that allowed me to follow my dreams again. I started snowboarding, then I went back to work, then I went back to school.

Then, in 2005, I cofounded a nonprofit organization for youth and young adults with physical disabilities so they could get involved with action sports. From there, I had the opportunity to go to South Africa, where I helped to put shoes on thousands of children's feet so they could attend school.

And just this past February, I won two back-to-back World Cup gold medals, which made me the highest ranked adaptive female snowboarder in the world.

Eleven years ago, when I lost my legs, I had no idea what to expect. But if you ask me today, if I would ever want to change my situation, I would have to say no. Because my legs haven't disabled me, if anything they've enabled me. They've forced me to rely on my imagination and to believe in the possibilities, and that's why I believe that our imaginations can be used as tools for breaking through borders, because in our minds, we can do anything, and we can be anything.

It's believing in those dreams and facing our fears head-on that allows us to live our lives beyond our limits. And although today is about innovation without borders, I have to say that in my life, innovation has only been possible because of my borders. I've learned that borders are where the actual ends, but also where the imagination and the story begins.

So the thought that I would like to challenge you with today is that maybe, instead of looking at our challenges and our limitations as something negative or bad, we can begin to look at them as blessings, magnificent gifts that can be used to ignite our imaginations and help us go further than we ever knew we could go. It's not about breaking down borders. It's about pushing off of them and seeing what amazing places they might bring us. Thank you.

Unit 5

Success Story: Recycling in the Philippines

Heather Koldewey: When we first came here, the fish were so depleted because the fishing methods have become more destructive. And you could go along a coral reef for ten minutes and hardly see a fish. As a marine biologist, I quickly realized that I really wanted to do something that was going to make a difference. We know that if these areas are properly protected, if they're looked after by the community, then we see recovery and protection of the ocean.

We're on the Danajon Bank, one of six double barrier reefs in the world. It's globally significant, this place, from a marine biodiversity point of view.

Plastic is not meant to be in the ocean at all, and it does no good to anything. Plastic has been found in every bit of the ocean that people have looked. What we have been working on is how do we solve marine conservation in poor fishing communities like we find here in this part of the Philippines. And if you're worried about where your next meal is coming from, how you're going to pay for your child to go to school, how you're going to treat a parent who's sick,... your needs are absolutely immediate. And that's the balance we've been struggling to find. Many of our team are also community organizers, people who can talk to people. So I can stand here and talk to the community about science, but without understanding what's going on for these communities, what their daily concerns and pressures are, we can't come up with solutions. We knew there were a lot of fishing nets on the island. You can see them lying around, entangled in the mangroves, lying on the beaches. More and more nets are being used as there's less and less fish, and people are more and more desperate. They're trying to find those fish, and they need more nets to do so.

Subtitle: Net-works pays local community members for recycling discarded plastic fishing nets.

Edrich Baron (in local language): It was easy to convince our community to participate. What was once just trash is something that serves as additional income to the poor in our community.

Heather: We were able to develop a global supply chain to collect nets, aggregate nets, bale nets, export nets from the Philippines to Europe, recycle those nets to nylon yarn that then can be made into carpet.

So, working with Madz, Net-works' regional manager, and he's been really one of the brainchilds, so we've worked together almost twenty years now.

Madz Blanco: The first generation of nets that we collected used to be very dirty because people were collecting nets that had been on the shoreline for years. But here we are collecting them straight from the areas where they replace and mend the nets. This is just proof that we are effective because fishers are no longer throwing their used fishing nets into the fishing grounds.

Heather: Just from this one island we've had 18 tonnes of nets. And so we can make a difference; there is hope; there is optimism, and there are solutions, but we need innovation and collaboration to do that.

What is so inspiring for me is actually seeing what communities who have so very little can actually do and how much change they can make.

Madz: Heather represents the science behind the scene. People can easily buy into something that is supported by strong science.

Heather: From a small island in the Philippines, we're part of a solution that works economically; it works environmentally; it works for the people who live here. All of these things are making a difference every day to people's lives.

Madz: We are very convinced that the tool that we have developed, that we have evolved, is highly applicable to solve other plastics issues.

Unit 6

The Magic Washing Machine

Hans Rosling: I was only four years old when I saw my mother load a washing machine for the very first time in her life. That was a great day for my mother. My mother and father had been saving money for years to be able to buy that machine, and the first day it was going to be used, even Grandma was invited to see the machine. And Grandma was even more excited. Throughout her life she had been heating water with firewood, and she had hand-washed laundry for seven children. And now she was going to watch electricity do that work.

My mother carefully opened the door, and she loaded the laundry into the machine, like this. And then, when she closed the door, Grandma said, "No, no, no, no. Let me, let me push the button." And Grandma pushed the button, and she said, "Oh, fantastic! I want to see this! Give me a chair! Give me a chair! I want to see it," and she sat down in front of the machine, and she watched the entire washing program. She was mesmerized. To my grandmother, the washing machine was a miracle.

Today, in Sweden and other rich countries, people are using so many different machines. Look, the homes are full of machines. I can't even name them all. And they also, when they want to travel, they use flying machines that can take them to remote destinations. And yet, in the world, there are so many people who still heat the water on fire, and they cook their food on fire. Sometimes they don't even have enough food, and they live below the poverty line. There are two billion fellow human beings who live on less than two dollars a day. And the richest people over there—there's one billion people—and they live above what I call the *air line* because they spend more than \$80 a day on their consumption.

But this is just one, two, three billion people, and obviously there are seven billion people in the world, so there must be one, two, three, four billion people more who live in between the poverty line and the air line. They have electricity, but the question is, how many have washing machines? I've done the scrutiny of market data, and I've found that, indeed, the washing machine has penetrated below the air line, and today there's an additional one billion people out there who live above the *wash line*. And they consume more than \$40 per day. So two billion have access to washing machines.

And the remaining five billion, how do they wash? Or, to be more precise, how do most of the women in the world wash? Because it remains the hard work for women to wash. They wash like this: by hand. It's a hard, time-consuming labor, which they have to do for hours every week. And sometimes they also have to bring water from far away to do the laundry at home, or they have to bring the laundry away to a stream far off. And they want the washing machine. They don't want to spend such a large part of their life doing this hard work with so relatively low productivity. And there's nothing different in their wish than it was for my grandma. Look here, two generations ago in Sweden: picking water from the stream, heating with firewood, and washing like that. They want the washing machine in exactly the same way.

But when I lecture to environmentally concerned students, they tell me, "No, everybody in the world cannot have cars and washing machines." How can we tell this woman that she isn't going to have a washing machine? And then I ask my students. I've asked them, over the last two years, I've asked, "How many of you don't use a car?" And some of them proudly raise their hands and say, "I don't use a car." And then I put the really tough question: "How many of you hand-wash your jeans and your bed sheets?" And no one raised their hand. Even the hard core in the green movement use washing machines.

So, how come something that everyone uses, and they think others will not stop it? What is special with this? I had to do an analysis about the energy use in the world. Here we are. Look here, you see the seven billion people up there: the air people, the wash people, the bulb people, and the fire people. One unit like this is an energy unit of fossil fuel: oil, coal, or gas. That's what most of the electricity and the energy in the world is. And it's 12 units used in the entire world, and the richest one billion, they use six of them. Half of the energy is used by one seventh of the world's population. And these ones who have washing machines but not a house full of other machines, they use two. This group uses three, one each. And they also have electricity. And over there they don't even use one each. That makes 12 of them.

But the main concern for the environmentally interested students—and they are right—is about the future.

What will happen is economic growth. The best of here in the emerging economies (I call them the New East), they will jump the air line. “Wopp!” they will say, and they will start to use as much as the Old West are doing already. And these people, they want the washing machine. I told you. They’ll go there. And they will double their energy use. And we hope that the poor people will get into the electric light. And they’ll get a two-child family without a stop in population growth. But the total energy consumption will increase to 22 units. And these 22 units, you know—still the richest people use most of them. So what’s needed to be done? Because the risk, the high probability of climate change is real. It’s real. Of course they must be more energy-efficient. They must change behavior in some way. They must also start to produce green energy, much more green energy. But until they have the same energy consumption per person, they shouldn’t give advice to others what to do and what not to do. Here we can get more green energy all over.

This is what we hope may happen. It’s a real challenge in the future. But I can assure you that this woman in the favela in Rio, she wants a washing machine. She’s very happy about her minister of energy that provided electricity to everyone, so happy that she even voted for her, you know. And she became Dilma Rousseff, the president-elect of one of the biggest democracies in the world, moving from minister of energy to president. If you have democracy, people will vote for washing machines. They love them.

And what’s the magic with them? My mother explained the magic with this machine the very, very first day. She said, “Now, Hans, we have loaded the laundry. The machine will make the work. And now we can go to the library.” Because this is the magic: you load the laundry, and what do you get out of the machine? You get books out of the machines, children’s books. And Mother got time to read for me. She loved this. I got the *ABCs*. This is where I started my career as a professor, when my mother had time to read for me. And she also got books for herself. She managed to study English and learn that as a foreign language. And she read so many novels, so many different novels here, you know. And we really, we really loved this machine.

And what we said, my mother and me, “Thank you, industrialization. Thank you, steel mill. Thank you, power station. And thank you, chemical processing industry that gave us time to read books.”

Thank you very much.

Unit 7

The Dogist

Elias Friedman: There’s nothing really crazy about it. I walk around and say, “May I take a photo of your dog?”

Elias: May I take a photo of your dog? May I take a photo of your dog?

Elias: They say “OK, OK. Good luck trying to get his photo.”

Elias: Sit!

Elias: Squeak toy comes out. I start making a weird noise. One second later the dog is posing like a professional.

Elias: Very nice! Let me give you a card. I take photos of dogs.

Woman: Oh, you’re The Dogist! She follows you!

Elias: I ask people sometimes, “If you had all the money in the world, what would you do?” If I had all the money, I’d probably travel with my camera and hang out with dogs. I’m doing it. In the beginning of the project, no one knew who I was. I was just walking around every day and having these interactions with dogs. It made me feel good about being sort of unemployed. I just want to hang out with dogs. But as the project’s grown and everything, I’ve become this sort of figure.

So, here, we’ve got the image queued up, got the caption, and... post. At this point it’s 500 likes per minute, something like that. There’s a lot of activity. It’s still baffling to me how many people like each of these photos I put out. I haven’t done any outreach; I haven’t paid for any advertising. It’s something people want and need.

Elias: Very nice! Georgia comma Boston Terrier comma six months old.

Elias: It’s a beautiful sight for a dog photographer. New York is a special place to be a documentary street photographer. I can’t really imagine doing this blog anywhere else.

Elias: Very nice!

Elias: The city has its canine personalities in each of the neighborhoods. I like to shoot downtown. Weekends are the best because you get owners walking their dogs during the day versus the walkers with five other dogs.

Elias: Very nice!

Elias: Central Park has great dogs. The Upper East Side has a lot of poodles, exotic breeds. Brooklyn has more pit bulls.

Man 1: Cut it out!

Elias: Midtown doesn't have any dogs.

Elias: There's a lot of visual noise given the street context.

Elias: Woody! Woody! Treat! Treat!

Elias: But I shoot pretty shallow depth-of-field. I like to isolate this sort of moment in time for this dog in its life.

The dogs, they're not posing for a picture, they're sitting for the ball, they're sitting for the treat. It's my challenge to make it seem like there's something dramatic happening. I guess what it is, is personifying the dog and making them seem like a person. That's where, to me, the humor is.

I don't feature their faces, but when there's something interesting about the owners, I like to shoot a little wider and include their lower half because there's a lot to glean from that relationship.

Elias: Who are these guys? Both of them!

Man 2: I love what you're doing. It's so great.

Elias: Thank you.

Man 2: I tell everyone about you!

Elias: Awesome.

Elias: I don't have a dog right now; I don't have a girlfriend. I don't work with people in the same way that most people do. And I sometimes feel that sort of loneliness. I come home, and I'm like talking to my rug. But I do connect with people through their dogs, and I think even though I don't have my own dog, dogs have opened up a whole world for me that's made me less lonely.

I think they show just an innate human emotion... to want to love and to want to give love, and dogs have that in abundance. I've only been doing this for two years, but I do feel more sort of spiritually aligned. Dogs don't need that much to be happy. They need food and love, right? That's something I've always aspired to do, is to take a page out of their book, become more simple in the way I look at the world.

Unit 8

Life Lessons from Big Cats

Beverly Joubert: We are truly passionate about the African wilderness and protecting the African wilderness, and so what we've done is we've focused on iconic cats. And I know, in the light of human suffering and poverty and even climate change, one would wonder, why worry about a few cats? Well today we're here to share with you a message that we have learned from a very important and special character: this leopard.

Dereck Joubert: We found this leopard in a 2,000-year-old baobab tree in Africa, the same tree that we found her mother in and her grandmother. And she took us on a journey and revealed something very special to us—her own daughter, eight days old. And the minute we found this leopard, we realized that we needed to move in, and so we basically stayed with this leopard for the next four and a half years—following her every day, getting to know her, that individual personality of hers, and really coming to know her.

Beverly: Well, we certainly did spend a lot of time with her—in fact, more time than even her mother did. When her mother would go off hunting, we would stay and film. And early on, a lightning bolt hit a tree 20 paces away from us. It was frightening, and it showered us with leaves and a pungent smell. And of course, we were stunned for a while, but when we managed to get our wits about us, we looked at each other and said, "My gosh, what's going to happen with that little cub? She's probably going to forever associate that deafening crash with us." Well, we needn't have worried. She came charging out of the thicket straight towards us, sat next to us, shivering, with her back towards Dereck, and looking out. And actually from that day on, she's been comfortable with us. So we felt that that day was the day that she really earned her name. We called her Legadema, which means, "light from the sky."

Dereck: We were spending so much time with this leopard and getting to understand her individualism, her personal character, that maybe we were taking it a little bit far. We were perhaps taking her for granted, and maybe she didn't like that that much.

Beverly: But when this little cub saw that I had vacated my seat and climbed to the back to get some camera gear, she came in like a curious cat to come and investigate. It was phenomenal, and we felt grateful that she trusted us to that extent. But at the same time, we were concerned that if she created this as a habit and jumped into somebody else's car, it might not turn out the same way—she might get shot for that. So, we knew we had to react quickly. And the only way we thought we could is, without scaring her, is to try and simulate a growl like her mother would make—a hiss and a sound. So Dereck turned on the heater fan in the car—very innovative.

Dereck: But really and truly, this was how this little leopard was displaying her individual personality. But nothing prepared us for what happened next in our relationship with her, when she started hunting.

Beverly: And on this first hunt, we truly were excited. It was like watching a graduation ceremony. We felt like we were surrogate parents. And of course, we knew now that she was going to survive. But only when we saw the tiny baby baboon clinging to the mother's fur did we realize that something very unique was taking place here with Legadema. And of course, the baby baboon was so innocent, it didn't turn and run. So what we watched over the next couple of hours was very unique. It was absolutely amazing when she picked it up to safety, protecting it from the hyena. And over the next five hours, she took care of it. We realized that we actually don't know everything, and that nature is so unpredictable, we have to be open at all times.

Dereck: Okay, so she was a little bit rough. But in fact, what we were seeing here was interesting. Because she is a cub wanting to play, but she was also a predator needing to kill, and yet conflicted in some way, because she was also an emerging mother. She had this maternal instinct, and so this really took us to this new level of understanding that personality.

Beverly: And of course, through the night, they lay together. They ended up sleeping for hours. But I have to tell you, everybody always asks, "What happened to the baby baboon?" It did die, and we suspect it was from the freezing winter night.

Dereck: So, at this stage, I guess, we had very, very firm ideas on what conservation meant. We had to deal with these individual personalities. We had to deal with them with respect and celebrate them. And so we, with the National Geographic, formed the Big Cats Initiative to march forward into conservation, taking care of the big cats that we loved and then had an opportunity to look back over the last 50 years to see how well we had all collectively been doing. So when Beverly and I were born, there were 450,000 lions, and today there are 20,000. Tigers haven't fared any better: 45,000 down to maybe 3,000.

Beverly: And then cheetahs have crashed all the way down to 12,000. Leopards have plummeted from 700,000 down to a mere 50,000. Now in the extraordinary time that we have worked with Legadema, which is really over a five-year period, 10,000 leopards were legally shot by safari hunters. And that's not the only leopards that were being killed through that period. There's an immense amount of poaching as well, and so possibly the same amount. It's simply not sustainable.

Dereck: There's a burgeoning bone trade. South Africa just released some lion bones onto the market. Lion bones and tiger bones look exactly the same, and so in a stroke, the lion bone industry is going to wipe out all the tigers. So we have a real problem here, no more so than the lions do, the male lions. So the 20,000 lion figure that you just saw is actually a red herring because there may be 3,000 or 4,000 male lions, and they all are actually infected with the same disease. I call it complacency—our complacency. Because there's a sport, there's an activity going on that we're all aware of, that we condone. And that's probably because we haven't seen it like we are today.

Beverly: And you have to know that, when a male lion is killed, it completely disrupts the whole pride. A new male comes into the area and takes over the pride and, of course, first of all kills all the cubs and possibly some of the females that are defending their cubs. So we've estimated that between 20 to 30 lions are killed when one lion is hanging on a wall somewhere in a far-off place.

Dereck: So what our investigations have shown is that these lions are essential. They're essential to the habitat. If they disappear, whole ecosystems in Africa disappear. There's an 80-billion-dollar-a-year ecotourism revenue stream into Africa. So this is not just a concern about lions; it's a concern about communities in Africa as well. If they disappear, all of that goes away. But what I'm more concerned about in many ways is that, as we delink ourselves from nature, as we delink ourselves spiritually from these animals, we lose hope; we lose that spiritual connection, our dignity, that thing within us that keeps us connected to the planet.

And Legadema? Well, we can report, in fact, that we're grandparents. Thank you very much.

Unit 9

Searching for Genghis Khan

Narrator: Genghis Khan was born in the 1160s. He was originally named Temujin. When Temujin was born, Mongolia had about thirty nomadic tribes. His father was the leader of a small tribe, but he was killed by another tribe when Temujin was only nine. Temujin grew up to be a great warrior. He destroyed the enemy tribe that killed his father. In 1206, after many battles, Temujin became Genghis Khan, a name meaning “strong ruler” or “oceanic ruler.” In other words, he was ruler of the world. He was about 40 years old. As leader of the Mongols in the 13th century, Genghis rode far across central Asia with his troops. They conquered city after city, leaving behind death and destruction. But Genghis was more than just a fierce warrior. He unified Mongolia and built an empire that stretched across a continent.

Dr. Albert Yu-Min Lin is a researcher and engineer at the University of California at San Diego. He is also a National Geographic Emerging Explorer who travels to Mongolia to search for Genghis Khan’s lost tomb. It’s an exciting career, but it almost didn’t happen. Lin was studying materials science and engineering when he realized that he wanted to do more with his knowledge. He wanted to explore. He also had a personal connection to Mongolia. Lin, whose family is from China, grew up hearing that his family was “from the North.” In other words, they were from Mongolia.

Lin’s research is focused on looking for ways to use cutting-edge technology, such as satellite imagery, ground-penetrating radar, and remote sensors, to collect and synthesize data in a way that allows him to conserve archaeological sites, rather than destroying them. Because Genghis Khan’s tomb is considered a sacred place, it would be disrespectful to disturb it. The area where it is believed to be located is called “The Forbidden Zone.”

Using crowdsourcing, a way to let people from around the world participate in his research, Lin’s team is examining satellite images that show where Genghis’s tomb might be located. Hundreds of people that Lin calls “citizen scientists” spent months looking at 85,000 images, tagging roads, rivers, and ancient structures that might show where the tomb is located. Now, Lin’s team is visiting the most promising sites on the ground in Mongolia. How long will it take them to find Genghis’s tomb? Only time will tell.

Unit 10

Why Art Thrives at Burning Man

Nora Atkinson: It’s like a dream. Imagine, in the empty desert, you come upon a huge wheel ringed in skeletons. And someone invites you to come pull a series of heavy ropes at its base, so you walk to one side, where a team is waiting, and you all throw your backs into it, and you pull in turn. And eventually, the wheel roars to life, lights begin to flicker, and the audience cheers. And you’ve just activated Peter Hudson’s *Charon*, one of the world’s largest zoetropes. This is the farthest thing from marketable art. It’s huge, it’s dangerous, it takes a dozen people to run, and it doesn’t go with the sofa. It’s beautifully crafted and completely useless. And it’s wonderful.

You’re unlikely to see works like *Charon* in the art world headlines. These days, the buying and selling of artwork often gets more attention than the works themselves. In the last year, a Jean-Michel Basquiat sold for 110 million dollars, the highest price ever achieved for the work of an American artist, and a painting by Leonardo da Vinci sold for 450 million, setting a new auction record. Still, these are big, important artists, but still, when you look at these works and you look at the headlines, you have to ask yourself, *Do I care about these because they move me, or do I care about them because they’re expensive and I think they’re supposed to?* In our contemporary world, it can be hard to separate those two things. But what if we tried? What if we redefined art’s value—not by its price tag, but by the emotional connection it creates between the artist and the audience, or the benefits it gives our society, or the fulfillment it gives the artists themselves?

This is Nevada’s Black Rock Desert, about as far as you can get from the galleries of New York and London and Hong Kong. And here, for just about 30 years, at Burning Man, a movement has been forming that does exactly that.

This is me on the desert playa last year with my brother, obviously hard at work. I’d been studying the art of Burning Man for several years, for an exhibition I curated at the Smithsonian’s Renwick Gallery, and what fascinates me the most isn’t the quality of the work here, which is actually rather high; it’s why people come out here into the desert again and again to get their hands dirty and make in our increasingly digital age. Because it seems like this gets to something that’s essentially human.

One thing that sets this work aside from the commercial art world is that anyone who makes work can show it. These days, around 300 art installations and countless artistic gestures go to the playa. None of them are sold there. At the end of the week, if the works aren’t burned, artists have to cart them back out and store them.

Much of the distinctive character of the work here comes from the desert itself. For a work to succeed, it has to be portable enough to make the journey, rugged enough to withstand the wind and weather and participants, stimulating in daylight and darkness, and engaging without interpretation. What looked enormous in an artist's studio could get lost on the playa, but there are virtually no spatial limits, so artists can dream as big as they can build.

At night, the city swarms with mutant vehicles, the only cars allowed to roam the playa. And if necessity is the mother of invention, here, absurdity is its father. They zigzag from artwork to artwork like some bizarre, random public transportation system, pulsing with light and sound. When artists stop worrying about critics and collectors and start making work for themselves, these are the kinds of marvelous toys they create.

And what's amazing is that, by and large, when people first come to Burning Man, they don't know how to make this stuff. It's the active collaborative maker community there that makes this possible.

Skilled or unskilled, all are welcome. In fact, part of the charm and the innovation of the work here is that so many makers aren't artists at all, but scientists or engineers or welders or garbage collectors.

In museums, a typical visitor spends less than 30 seconds with a work of art, and I often watch people wander from label to label, searching for information, as though the entire story of a work of art could be contained in that one 80-word text. But in the desert, there are no gatekeepers and no placards explaining the art, just natural curiosity. You see a work on the horizon, and you ride towards it. When you arrive, you walk all around it, you touch it, you test it. Is it sturdy enough to climb on? Art becomes a place for extended interaction, and although the display might be short-lived, the experience stays with you.

Every year, something compels people from all different walks of life, from all over the world, to go out into the desert and make art when there is no money in it. The work's not always refined, it's not always viable, it's not even always good, but it's authentic and optimistic in a way we rarely see anywhere else.

Forget the price tags. Forget the big names. What is art for in our contemporary world if not this?

Thank you.

Unit 11

Joel Sartore: The Photo Ark

Joel Sartore: Hi there, I'm Joel Sartore. I'm a photographer with National Geographic. I've been a photographer there for a long time, almost thirty years now. For many years, I've photographed animals in the wild, in many countries all over the world: lions in the trees in Uganda, hippos at mudholes in Mozambique, bald eagles in North America.

People often ask me how I got my job with National Geographic. Well, I grew up in Nebraska, which is in the exact center of the United States. It's mostly farm country. I started taking pictures in high school, mainly of things that I thought were funny, to impress my friends, I guess. Pictures of dogs that were mean to me, or carnivals, anything I thought would be amusing. And fortunately, National Geographic had a good sense of humor, liked what I did, and hired me.

But lately, for the past dozen years or so, I've been working on a project called The Photo Ark. The Photo Ark is my twenty-five-year effort—I'll go until I'm about seventy years old—to document every single animal species in human care around the world. This means going to zoos, and aquariums, wildlife rehab centers, and private breeders, to try to show the world what biodiversity looks like. What do all the other animals of the world really look like? And why should it matter to us?

Well the reason I feel very strongly about documenting these animals is that many of them now are at risk for extinction. Small animals like frogs and stream fish are especially vulnerable. They've been around for hundreds of thousands, or even millions, of years. And yet now they're on the very cusp of extinction, many of them. I'd like to change that. And I'm very hopeful that we can turn this around in time.

So that's the purpose of The Photo Ark. We use studio portraits of animals on black and white backgrounds to get people to look these animals in the eye and fall in love with them as I have. Each animal, then, represents an opportunity to get someone into the tent of conservation and want to learn more, and perhaps even be inspired to take action to save these animals. So far we've photographed many thousands of species this way. But it'll take another fifteen years or so. We're going to try to have about fifteen thousand species photographed, all as studio portraits, by the time I'm done.

We use these black and white backgrounds for a couple of reasons. First, with no distractions and good lighting, we can really see what these animals look like. Many live their lives in muddy water, under rocks, in the soil, high up in the trees. This gives us our first good look at many of these species. And this is often the first and only time these species will be photographed well alive. The other reason we do it is there's no size comparison in these photographs, so an ant is every bit as big as an elephant. They're all the same size; they all have an equal voice.

So in the 12 years I've been taking pictures for The Photo Ark, I meet about one animal a year now that's so close to extinction we know it will vanish, in my lifetime certainly. In fact, this one that I photographed alive is now gone, extinct. That means forever vanished. And this one is gone. And this one is extinct as well. So far, we've photographed about a dozen animals we think are extinct. That's about one a year. But this is just the beginning if people don't turn things around.

Now it's not all gloom and doom; it's not all sad. I meet people every month that I consider to be conservation heroes. These are people who have single-handedly saved species just through their own initiative. Their passion, their energy has saved species. These are not people of great wealth or great knowledge. These are just people with ambition and, really, energy, to focus on one thing. I've met people who have saved pheasant species from extinction. I've met people who have saved butterfly species from extinction, and rodents. You name it, there are people out there who are very, very interested in doing what they can right now.

I don't think about the world as it's going to be in fifty years. I think about the world as it is today, and what can I do to make a difference? It's a very good way to live. At the end of my days, in my declining hours, when I look in the mirror, I want to see a smiling face, someone who did all they could to save nature. Now how about you?

Unit 12

Dance of the Flyers: Jacinta's Journey

Narrator: My first flight was at 18 years old. The first time I flew, it was really beautiful because I felt happiness, sadness, and a bit of fear. The pole was no more than 15 meters high, but I felt it was like 40 or 50 meters high. Going up the pole felt like I had a really, really cold bar of ice in my stomach. Being able to climb the pole was something wonderful because then I knew what it was like to fly. I could see myself as a bird, flying.

I was the first female flyer in Mexico. Before, women were not allowed to participate. In other villages, we can't touch the pole or be part of the ceremony because they say it could have serious consequences, that it could cause an accident. But women used to participate in the old times, so I feel it's just a myth.

When I decided to become a flyer and participate in this dance, the biggest obstacle was from my own family. Due to sexism, they said I couldn't because I was a woman, that it didn't look good. But little by little they got used to it since I kept doing it, so they had to accept my decision.

This ritual is done to call for rain. In the past, it was meant to secure a good harvest. It's also a ritual to the sun because from the moment we go to the forest to cut down the tree, we do an exchange with Mother Nature since we take one of her children, which becomes part of our dance.

This dance originates in Mesoamerica. We don't know exactly when it started, but we know that it's a pre-Hispanic dance because they used to worship the gods. Today we worship a saint here in Cuetzalan. We worship Saint Francis.

Man (singing in Spanish): Jacinta, the flying woman, the one who flies on the flying pole. Jacinta, such a famous flyer, the one who flies on the flying pole. With the 15 turns, the famous Jacinta shows off her skills. From all over the world, people come see Jacinta on the famous flying pole of Cuetzalan, Puebla.

Narrator: I suffer from vertigo when I'm on a 4th or 5th floor, but when I'm up on the flyers' pole, I feel safe. I am not afraid. The moment becomes magical. When I start going up, I just focus on every step. I'm a hundred percent focused on the dance in that moment.

When I open my arms, it's something wonderful and fantastic because that's when I know what it's like to fly like a bird. I don't feel like a bird in a cage anymore. I don't feel locked up; I feel free. The moment of flying is spectacular and dangerous. My life hangs by a thread, by a rope. I know I'll go up, but I don't know if I'll come down. Nowadays, my family has changed its mind, and they think of me as an artist. I come from a family of flyers, and I feel very proud to be a woman, and above all a female flyer in a dance that was only done by men.