

URL: <https://stvp.stanford.edu/blog/videos/animating-against-the-grain>

Maureen Fan, co-founder and CEO at Baobab Studios, shares how she blended her creativity and technical savvy in founding her virtual reality animation company. Undeterred by naysayers and an unforged path ahead, she encourages those with big imaginations to buck traditional career paths and to be persistent in asking for what you want.



## Transcript

- [Narrator] Who you are defines how you build.. (applauding) - Thank you and it's so awesome to be back but I'm deeply jealous because we didn't have this engineering quad when I was here.. Every single year I come back I get more and more jealous about how awesome you guys have had it.. But Stanford was the best place to have an undergraduate degree as you'll see in my presentation.. So to answer what the Baobab Tree is it's this tree that is native to Madagascar and my Co-Founder Eric Darnell directed all four Madagascar films so we thought it made sense.. Also it has an amazing story because I'm going to talk about storytelling today, about how the gods were angry at this tree so they threw the tree down and it fell upside down and it's roots were the branches instead and it's head became the roots and that's why it's such a funny looking tree.. But the mission of our company is to inspire you to dream by bringing out your sense of wonder and we felt this tree really showed that.. So I'm going to talk today about defining your own path.. I'm going to tell you about my path to becoming an entrepreneur.. I never expected to become an entrepreneur..

I'm deeply introverted, deeply insecure, all sorts of issues so I didn't think I would have what it took to become an entrepreneur but through my path from Stanford to Ebay, through Zynga, from Hollywood, Pixar, et cetera, I found my voice and that was always by not allowing other people to tell me who I was and who I could be.. It's like, am I a woman or am I a man, am I an introvert or extrovert, am I a fuzzy or a techie, am I a suit or a creative, and it's rejecting all that and defining your own path and saying that you can be whatever you want and don't follow the buckets that people want to put you in.. So, my path, I started off at Stanford.. I knew I wanted to do entertainment so I looked up all the studios job openings before coming to Stanford and saw what did they want me to major in.. It says communications and econ usually.. I took those classes but I loved computer science the most because it was the most difficult.. I found that really intellectually stimulating.. So I started doing that and then doing symbolic systems because then I started getting excited about logic, and then I took a class at Stanford University Digital Arts Center and realized I could combine art with the psychology, with the engineering and the amazing thing about Stanford is unlike the other schools out there which are mostly on the semester system, the quarter system allows you to take as many classes as you want.. So I took all sorts of classes like coastal environmental zone where I was supposed to travel to different beaches on the California coast and study them which is the best class ever.. Highly recommend that you guys take that class..

But I fell in love with animation in particular and I sought to design my own major and Stanford is one of these schools that allows you to do it.. I think Brown is the only other school I believe that lets you do it, Stanford doesn't believe that you know what you want to do until you've tried out a bunch of classes which is totally true.. So I designed my major here and then I went to Ebay.. So why did I go to Ebay when I wanted to do animation? It's called tiger parents! So I really wanted to do animation so badly but my parents, I'm Asian, my Chinese parents told me that I would be poor and destitute if I followed my dreams and that I needed to do something practical.. So instead of following my dreams to Lucasfilm I took a job at Ebay which was also super awesome so no dis on Ebay, because it also used art, psychology, and computer science so that was great.. But the entire time I was there I would take classes at De Anza College, Community College because all the Lucasfilm animators would teach there.. So at nighttime I'd take the classes thinking about the day that my stock options would be worth enough so I could finally escape and do my true passion but by taking these classes at night I really learned about the skill of animation and continued to define my own path there instead of just doing one thing.. I also found that by drawing every single day and doing art it made me better at my job at Ebay on the business side which I thought was really strange because I thought it was always about focusing and just doing one thing.. But by being cross disciplinary that's when you start

finding connections between the different disciplines.. The best advice I ever got was from a professor here, her name was Lorie Loeb, she was a visiting professor and she taught animation..

She's at Dartmouth now leading up animation.. Back when I was at Stanford when I was all angsty about wanted to do animation and my parents not letting me, she said don't worry about knowing what you want to do, the most important thing is to do whatever job it is that you have and do it really well.. Because you'll learn something that will help you in your path later and the people around you who see you work so hard with your work ethic will come out of the woodwork later on and help you, and I'll show you through the path how that actually did happen.. So finally after doing Ebay five years I'm like, it's time! I've saved up enough money, it's time to pursue my passion and I was going to apply to art center to get an MFA.. But guess what, the deadlines had passed and I was really sad and my mom said, why don't you apply to round three of business school? And I thought, because I hate business! But like a dutiful confusion daughter I applied to Harvard and I got in, but I was going to say no because I knew I just really wanted to do this animation thing.. I was very stubborn.. But my boss at Ebay said, don't be an idiot Maureen, you think Hollywood's so cool.. It's sexy but you don't know.. Don't say no to Harvard, first go try it out and then make your decision.. So I emailed everyone in the Stanford Alumni database that had anything to do with entertainment animation, like five people or so and they all responded to me because the Stanford Alumni database and network is very strong and they gave me all sorts of internships in Hollywood..

So I quit my job at Ebay, I drove down to Hollywood, and I took on every single internship I could possibly get my hands on to learn.. So I was doing script development with Michael Ellenberg who is now the HBO drama dude and also Talent Manager Assistant to Joseph Gordon-Levitt and Zach Braff and Paul Dano.. And I learned from that experience that everything is a business at the end of the day and that my mom is always right and I should go to business school.. So I went ahead and went to business school where I ran for President of Entertainment Media Club but there I was super angsty too because they are mostly from the East Coast and they would say, oh you're that creative person and I was put in Math Camp because I didn't come from a financing consulting background at the time.. And found my own path there.. So internship between business school years is the most important thing you can do in business school so I applied to Pixar.. Ali Roganie who is a graduate of Stanford TSB was the CFO of Pixar and he's like, oh you should totally come do accounting finance.. I hate accounting so I was like, no I don't want to do that.. I want to get paid minimum wage to bring coffee for the crew of the Pixar staff.. But they were angsty about that too because they said you're from business school..

You belong here with the numbers.. You're a suit, you're not a creative so I had to fight real hard to form a path to make sure that I got the internship that I wanted.. And the amazing thing there is because I told my boss on Toy Story 3 sets department what it is that I want to learn which was how to become a producer.. She designed an internship for me where usually interns get to only stay with one department, I was with the sets department, they make all the environments.. You can only stay with one department the whole time, she formed an internship where I could shadow every single department.. Editorial, art, characters, et cetera.. And that's because I told her what it is that I wanted.. The point is to always ask for what you want because people in general want to make you happy and want to help you.. If you don't ask for it it's not going to happen.. Especially for ladies out there..

You definitely have to do this because dudes just naturally do it, not to generalize.. So I worked on Toy Story 3 in production and then after that instead of going back to Pixar because I realized from my newly awesome Harvard Business School education that starting an animation company was really hard because if I had one flop of a film, if I didn't have a theme park division to buffer against the loss my entire company would probably go down.. Also unless I had huge amounts of capital or unfair distribution advantage it probably didn't make sense to go compete against a Disney, Pixar, or a Dreamworks.. But I was also attracted to startups and Pixar was a very mature industry at the time and I wanted to be part of something new.. Creating a new industry so I joined Zynga right when they started and was there for six years and I started off on Farmville and became Vice President of Games after six years looking over the Farmville franchise.. And that was crazy, I did not sleep and I slept four hours a night clicking refresh on my computer at like 2:00 A.M.. in the morning to see if the numbers are going to go down because I didn't want Mark Pincus to yell at me if the numbers went down because he has a dashboard every morning where he sees every game and day over day change and week over week and if it was red and down then you were in trouble.. So I was constantly clicking refresh, it was traumatic but I learned so much about what it meant to be an entrepreneur and what it took to start a company.. Because in business school they teach you to be a certain type of leader which is very different from what it takes to be a startup leader.. It requires different management styles for different types of company and if you've heard of War Time CEO versus Peace Time CEO it's very relevant, you should definitely read that..

I can't remember if it's by Ben Horowitz or Ed Driesen.. - [Audience Member] Horowitz.. - Horowitz, so you should definitely read that because it will turn your thinking upside down on what it means to be a leader.. So, but even when I was at Zynga I just loved animation so on nights and weekends, despite sleeping four hours a day, I worked on a short animated film called The Dam Keeper with my two friends from Pixar and we made a short film that ended up getting nominated for the Oscars! So that was awesome, I just couldn't stop doing animation but I couldn't figure out how to make it work from a business perspective.. So I had this art side of my brain right, what I really loved, my passion, my idealism, and then I had this super business school, practical, Asian parents side of my brain and what I was trying to do this entire time is figure out can I merge the two together.. Can I be both or do I have to end up choosing to be one or another.. But every single step I took I tried to create my own path in the role that I wanted instead of letting them put me where they wanted to.. Which is why I

started my own company because then you can make it whatever you want.. So, these are my three Co-Founders and Eric, like I said he directed all four Madagascar films and Antz and Larry Cutler, Stanford grad, both undergrad and masters in Computer Science and his thesis I believe was even on VR back long time ago when it was not even commercially viable but now very relevant and he went to Pixar right when he graduated, a Technical Director and then became Dreamworks head of all character technology.. And he's a judge for the Oscar Technical Achievement Awards..

So the reason I put this slide up isn't to brag even though they're sweet, the reason I put this up is to explain how I got in touch with these people and how the path helped.. Eric Darnell I met through Glenn Entis.. Glenn Entis is the Co-Founder of PDI Dreamworks Animation and the former CTO of Dreamworks Interactive and the CEO, wait became EALA, and he was the CEO of Dreamworks Interactive.. He was a consultant, advisor at Zynga and as soon as I realized what he did in the past I was like, you will be my mentor! He said, no, I'm retired.. I don't have time and my wife wants me at home, I don't have time for you.. And I said, I'm going to become best friends with your wife! And he says, we'll see about that.. So it all worked out, I'm friends with his wife and he's now my advisor.. So when I decided to start this company I asked him, hey can you introduce me to Eric because he hired Eric to Dreamworks for his first job.. Eric was an animation intern and became a big badass director.. So he introduced me to him..

Now Larry, remember when I said I emailed everyone in the Stanford Alumni database to get a job? He was one of the people I emailed and he was one of the people who responded.. He said, do not go to business school! Actually everyone said do not go to business school.. And I totally ignored everything they said.. Which he says was a good decision now.. You can always justify your past.. So Larry I kept in touch with and I ran into him during a Chinese New Year's parade in San Francisco where he was taking pictures of his daughter fan dancing.. I was like, hey! He's like, what are you doing? I said, I'm starting a company.. He's like, oh maybe I should join you.. And that's how it all happened.. So within one month I found my two co-founders and then Glenn Entis introduced me to Alvy Ray Smith, the co-founder of Pixar..

I emailed him to be my advisor, he's like, listen Maureen I hate games, I don't believe in VR, sorry it's not going to happen.. I said, let met just meet you.. So I met him at The Crepevine, I put the headset on him, which is a mobile headset, he's like, I'm going to be your advisor.. So it's about persistence and constantly asking.. And then he introduced me to Glen Keane, who is my favorite out of all these.. I know you're not supposed to have favorites but he's my favorite of all of these because he was the Directing Animator of The Little Mermaid, Beauty and the Beast, Pocahontas, all those things, Tarzan, Tangled, Aladdin.. He's the most famous animator alive.. So he joined our advisory board as well.. Eric knew Mireille Soria, she's now the President of Paramount, she was the President of Dreamworks Animation and then through all this stuff I applied to Tribeca Film Festival to show our piece and then became friends with Jane Rosenthal who heads up Tribeca Film Festival and is Robert De Niro's producing partner.. But the point of all this is it's all through networking..

And it's all through being persistent and asking each person to help you introduce you to another person and even if they say no you persist until they say yes because people in general do want to help you.. Okay, so then I went about getting investors and this all happened as well in a month.. I had unrealistic expectations.. I thought I would get funding in two weeks.. And it took me four weeks to get funding which is really good but I thought I was a massive failure at three weeks, oh no, and I was under the covers crying.. I'm like, oh no I'm never going to get money for this company but what was interesting is it was again through my network that I got all this investment.. The first one who lend my series A, six million, was Gavin Teo.. I knew him because he was a PM at Zynga and while no one believed in VR at the time and especially not content he told his bosses, like hey, it doesn't matter if you even believe in what Maureen's doing, she's crazy because I know she was at Zynga and she'll find a way to make money so just give her money.. So it was really helpful that worked at Zynga with Gavin.. And then through the Taiwanese Network, so Steve Chang was the founder of Timrod who makes all of EA sports and Madden franchise, EA bought them, he introduced me to Phil Chen who is the Chief Content Officer of HTC and the person who created the HTC Vive..

He introduced me to him because Phil Chen wanted to figure out how to bridge more Taiwanese Silicon Valley connections.. We spoke and then he liked what I was doing, introduced me to the CEO of HTC and she immediately said, I want to give you money.. So that was through that Taiwanese connection.. Samsung was just at a dinner, I met Ajay Singh who's the best VC ever and you should all go seek funding from him.. I sat next to him at a dinner.. He just really impressed me and he's like, all right I'll just give you money.. I know it's making is sound really easy, it's really awful, funding raising was the worst experience of my life other than getting broken up with but it was still a difficult experience but with the right connections and perseverance you can do it too.. Then Phil Chen eventually went to Horizon's Venture who is the biggest fund in China along with Alibaba and Tencent and so he introduced me to the head of the fund there as well.. And then Mark Pincus was my old boss and I was like, Mark you owe me, Farmville.. Give me money and so he also introduced me to Peter Thiel and through other connections to Youku..

And for entertainment we have Comcast Ventures like I said, 20th Century Fox, Chernin, Peter Chernin, Advancit is the company of Shari Redstone, the Vice Chairwoman of Paramount Viacom, and Evolution Media Capital which is CAA TPG, and SMG is the biggest media conglomerate in all of China because you know China is where all entertainment's going so you want to make sure to have access to that market.. One thing you'll find interesting here is they teach you in business school not to go for strategics, you should go for financial institutions.. I found that strategics have been incredibly helpful to me because I knew that VR was going to take forever.. All these people going to pitch, VC's are like, oh it's here, VR's here! I did

the opposite thing, I said, VR's not here.. VR's going to take forever and because of that I need an investor who's going to stay with me for the long term.. Are you the one because you should be honored that I'm even talking to you, you should be honored to give me money.. So that's the attitude, by the way, you have to take when you're seeking money.. But the strategics were helpful because they were investing in VR themselves so they cared about VR, they needed to succeed, so they need my content so they can ride out the waves, the bumpy, the hype cycle, you know the Gartner Hype Cycle, the Trough of Disillusionment, all that wave and so they've provided a lot of help and they know where things are going because they have all the data, right, for their headsets, they give me all that information, they tell me what their strategy is, they give me free technology, all that so it's been actually quite helpful for me to have strategic investors.. Okay, how many of you are athletes? How many of you are musicians or singer songwriters? How about astronauts? Come on, at least one.. Okay, so usually because you guys are young and idealistic and wonderful you guys actually raised your hands but usually if I were to ask those questions to a room of adults nobody would raise their hand..

And when you were five years old you all thought you could be all those things.. So the question is if you don't believe that you can be all these things now, what happened from when you were five to becoming an adult that made you think that some of these things were no longer possible? Maybe someone told you your sculpture in art class wasn't quite right or you had a tiger parent who told you you should be more practical.. But deep down inside we believe that everyone has a dreamer still inside and we know this to be true because it's why you guys all go to the movies, it's why you go watch games, play games, it's because you want to meet characters and be in situations and scenarios that you wouldn't necessarily encounter in real life.. And that is what we care about and this is why I love animation.. I love animation so much that I couldn't stop trying to get back to animation through that entire path, right? And animation to me is all about taking you to completely different worlds, one's that you could've never imagined and making them feel so real that you think you could reach out and touch it.. And those last two sentences that I just said down there takes you a different world and makes it real, that's the definition of VR and AR.. Which is why I think that VR and animation and AR are made for each other.. And the mission of our company ultimately is to bring you back to that five year old self that you have inside you, to bring out your sense of wonder and inspire you to dream again.. Because then you would all go for your dreams, you would realize how much potential you have, actually go for it rather than being scared that you can't achieve your dream and what an awesome place the world would be if everyone actually pursued their dreams.. So I want to show you really quickly what the company does and then I'll dive into storytelling, why I think it's important of humanity and evolution, and storytelling as well..

- At Baobab Studios we're focused on doing immersive storytelling in virtual reality with characters that audiences can fall in love with.. - When I watch animation I feel that I'm taken back to that five year old sense of self where I thought anything was possible.. And our mission is to inspire the world to dream by bringing out your sense of wonder.. - Whoa! - [Eric] I had been working for over twenty years directing feature animated films and put on a VR headset for the first time, it blew me away, it's like this undiscovered frontier.. - We see virtual reality as a new medium for telling stories and creating great cinematic experiences that are character driven.. It allows people to be taken to places and to worlds that otherwise wouldn't exist.. - When audiences saw Invasion they reacted to the world and the characters in ways we never imagined and that interactivity and that connection and that eye contact was really significant and we realized we were really on to something.. So then when hand controllers came out we started our next piece Asteroids determined to make the viewer a character inside this story that had hands that can actually interact with the world around them.. - Crow the Legend was a piece that we always wanted to do from the very beginning.. It started off as a Native American folktale that was spread through word and we are turning it into a VR animation to take the story to the next level..

- [Butterfly] Hey that sounds like-- (gasps) - Crow! - Another way we look at what we're doing at Baobab Studios is to take advantage of what we already know about the empathy of filmmaking and cinema.. The interactivity with games and the motivation to act that we have in real life when things really matter and we really care.. And so when we have all those pieces of the puzzle working together then we have an experience that's unlike an experience you could have in any other medium.. - How many of you have tried VR? Wow, that's amazing.. Okay how about AR? AR's going to have the same problems that VR has, it's just a secret.. Anyways, okay so why did I start this company? So the first time I put on a VR headset I hated it.. I was watching that Paul McCartney music video and it's like, oh you can be right there but all I can notice was the poor resolution and the pixels because the headsets weren't advanced enough.. But when I put on the headset when I was at Zynga, we hacked our game into it for fun, it wasn't even moving.. There was no animated images, it was just a cartoon in the background and I realized that this is the future of animation because when you watch animation it's suspension of disbelief, right? You don't expect it to look real and you get completely sucked in so you're not noticing the pixels versus when you're doing real life or special effects.. We care so much about whether or not it looks real or not which is why sometimes if you guys watch the old Final Fantasy movies, you know, it feels kind of weird and you can tell that they're not really human..

So I was really excited, I'm like, oh my gosh I need to go do this immediately, I need to join a company but I couldn't find a company that did what I wanted to do.. So that's why I had to start my company.. So it wasn't even because I always thought, oh I want to be an entrepreneur, because it's really hard.. Totally worthwhile but really hard.. And so I kind of stumbled my way into it.. I love storytelling.. So there's this theory, how many of you have read the books Sapiens? So there's this theory, evolutionary theologians, not theologians, researchers believe that the reason why homo sapiens might have been survival of the fittest and won out is because of rumors, which is our ability to tell stories.. You can say there's a lion over there, don't go over there or someone's like, hey Hector killed the lion with this chisel in this way and all the kids around the campfire are like, oh my gosh, I want to be just like Hector! It's about putting yourself in another person's viewpoint and putting yourself in

another scenario and you kind of wonder what would I do if I were in that situation? But in VR you don't have to wonder, you actually are in that situation, you actually have to act and it reveals who you are.. The storytelling's extremely powerful because it gets you to care so much about a character that you want to watch to the end of it, right? Because you want to know what happens to that character.. You want them to fail, you want them to succeed..

And we believe that VR and AR lets you care about that character even more so than all it's previous mediums.. So to give you an example, you see this scene right here in Invasion which is our first experiment that we ever did.. This little bunny comes up and sniffs you.. Now this isn't crazy because if you think about, if you've watched Deadpool, right? Deadpool comes up and talks to you.. It's called breaking the fourth wall.. You don't usually in cinema break the fourth wall, the actors don't acknowledge you because you're in your theater seat and you kind of know that Deadpool is not actually talking to you.. But this weird thing happens in VR.. People would actually get on the ground and start bouncing around, mimicking her motions, absolutely sure that she was reacting to them when actually it was canned animation at the time.. They would try to reach out and pet her.. They would coo at her, they would talk to her, they would wave at her..

And there's this scene where the aliens have their lasers pointed at you and she's hiding behind you and people say, oh my gosh I'm a bunny shield, I need to save her! And I can feel the snow and her breath on my shoulder.. It was really the air conditioning in our office but they just believed it to be real because when you're in VR your animal brain makes you believe that this thing is real and how powerful is that? If you start believing that she's real how much more do you bond with her, how much more do you want to see what happens? How much more responsibility do you feel you have for her and want to actually help her, right? And this ended up, at the beginning no one would give us the time of day.. We started our company because they're like, no one wants to watch animation and comedy.. They only want hardcore zombie shooting games.. This ended up becoming the number one downloaded experience across all headsets.. Beating out all the games, beating out all the licensed IP and all that and we think it's because of this specific moment, because afterwards people are like, I want that bunny and we made a plushy bunny so they can hug it.. Tell your friends about it and then if you're a person and you buy at Christmas and you want to share it with your kids or your nieces and nephews or your grandma, what are you going to show them, right? You're not going to necessarily have them shoot zombies, right? You love showing them a cute bunny that's going to come talk to you.. So we want to take our learnings from that moment when she's making eye contact with you and put that into Asteroids and then hand controllers came out so we said, can we make you not only care about these characters because you believe their real but can you do something about that caring now? Turning empathy into action is called compassion.. Can we get you to act on behalf of these characters? So in Asteroids you are this menial task robot, you're the lowest of the low.. You're in space with Mac and Cheese, our two aliens and with Peas, is your robot sidekick and you're helping them on your mission but you suck and they don't respect you but by the end if you help them enough you redeem yourself, you have your own little character arc, you save somebody's life and you become a respected member of their team and they bow to you and thank you at the end and you become a respected member..

So that was really interesting because we wanted to test with that but we also learned that interactivity, a lot of people have tried to merge games and film together, it's really hard because when you put interactivity in there people just want to push all the buttons and interact and they completely ignore the story, right? But by putting interactivity in there then they become even more immersed.. So it's trying to figure out the fine line between the two things.. So we iterated on Crow.. Oh by the way, we won an Emmy for both Invasion and Asteroids, they're really excited about that and we got Ethan Hawke for Invasion and for Asteroids we had Ingrid Nilsen, the famous You Tuber as well as Elizabeth Banks because I'm all about casting women.. And for Crow the Legend, this one's going to launch really soon, starring John Legend who is the star and also the Executive Producer.. Oprah, Tye Sheridan from Ready Player One, Constance Wu from Crazy Rich Asians and Fresh Off the Boat, my favorite show of all time.. Liza Koshy, the top number two You Tuber, and also Diego Luna from Rogue One.. So we have a sweet, sweet cast and we are poor start, okay not that poor because we raised 31 million dollars but still poor so like, you know, stars are expensive.. So it's like how do we have, like I have to pinch myself, how did we get all these people to be excited about being in our project and for them it was about the themes of this piece.. So Crow is based off of a Native American tale about how the crow used to have gorgeous rainbow feathers, colorful feathers..

And how he became the crow that you know today.. Black with the cawing voice.. And basically what happens is it becomes winter on Earth, before it was all just like Eden, beautiful, it becomes cold and Crow is the one who has to sacrifice himself by flying into the sun to bring fire and warmth back to the Earth but in the process of flying to the sun his feathers turn all black, they get burned and his voice becomes like the crow's voice today.. And there are deep Native American themes about sacrifice and community and what we learned through this process of adapting it is Native Americans were put into reeducation camps and told that they weren't allowed to tell these stories because they were Pagan.. And so we were really excited about being able to tell these types of stories and partnered with Native Americans in philanthropy in order to tell the story.. So we have Sarah Eagle Heart, which is the coolest name ever, and also Randy Edmonds who is a Tribal Elder who voiced characters in here but also helped us to make sure that we were true to the original vision.. But in this one we made you The Spirit of the Seasons.. So you are the asshole who makes it winter.. So you wave your hands around, sorry if I'm allowed to curse, but they say that there's a study that says that the more you curse the more successful an entrepreneur you are, so.. (laughing) So instead of having you push buttons because we don't want people, when you're in the headset we don't you to think which button do I need to press to make what happened because that takes you out of the experience..

We decided we wanted it to be seamless so you don't have to push any buttons, you just wave your arms around and that is

what insights the action and so when you wave your hands this way you make the flowers bloom and when you wave your hands you make the snow fall.. So you turn into winter and you make it so that the animals are frigid and maybe going to die and forcing Crow to go.. But we wanted to see if this time instead of being a fly on the wall or a passive viewer or someone just with arms what is it like if you have power over these creatures but they don't know you exist.. You have responsibility what do you choose to do as a human being? Like will you try to screw with them or will you actually try to help them? We were really excited about this piece.. As you noticed the cast that we cast I wanted to make sure that it was an inclusive cast because especially in Hollywood there are very few minorities or women behind and in front of the cameras so that's something that I felt was important.. Which I also think is very important in VR because it's combining two super male dominated industries, right? You have tech and you have gaming.. The two industries that I come from.. And when we're creating a completely new industry we have a chance to actually make sure that women are there from the really beginning, which by the way means that there needs to be women where the money's at.. Because there was a study I believe from Stanford that showed that a woman who was doing a presentation for pitching to a VC with the same exact pitch stack as a male is I believe 40% less likely to get funding, the exact same pitch and I think the Stanford study was showing slides with a female voice over versus a male voice over.. Same exact deck..

Women were less likely to get funding so you got to fix that and you guys can do it.. So for a lot of ladies it would be great if you guys didn't only be the one's to start companies but also are the money because that's where a lot of the power's at.. It's like who you decide to fund ultimately.. Okay, so if there was a little girl crying on a park bench, let's say Central Park, and she's too young to be by herself, if you see her crying in a film you're going to feel really bad for her but you're probably not going to get out of your seats, right, and go like touch the screen and try to help her because it's in the theater.. In a game you'd go talk to her but maybe the reason you talk to her is because you're trying to win, you're trying to get a key, get information to solve a quest, get to the next level, it may be very egocentric, it's a story of you.. In real life you would go talk to her because you genuinely care about her and you're worried about her and you want to save her, right? So we believe that VR AR allows you to have the empathy of film where you care so much about that character, you have the agency of games where you can do something about your caring, but you do it because you genuinely care not because you're trying to win.. And we think this is the magic of what VR AR gives us and it's a completely new medium and something that we are super excited about.. So I'm just going to conclude that's why I love VR, that's why I love animation but the real theme of the entire piece is to not allow anyone to ever bucket you into any category.. That you can absolutely define your own path.. Every single step of the way people were trying to tell me, even at Pixar, every step of the way people want you to be one thing or another..

You just refuse to do that and you say what it is that you want and the people around you who respect you will you help you get what it is that you want, but you have to say that you want it because you all have much more potential than you realize and as you grow older, you're still young and idealistic which is great and keep that but there is this tendency for society to try to get you to conform to societal values of money, fame, fortune, beauty.. Just resist that and remember who you are today because this is the version of yourself and the idealism that you want to keep, especially if you want to start something new.. Thank you.. (applauding) Does anyone have any questions that I can answer? You're going to make me feel like I suck if you don't ask questions so you have to ask questions.. Guilt works great, okay.. - [Attendee] I was just wondering, what are your biggest take aways from your time at Harvard Business School? - What was one of your biggest take aways at Harvard Business School? Three things.. So one is it gave me confidence in knowing what I didn't know.. So I don't remember a thing that I learned at Harvard Business School because you learn so many different topics it's impossible for you to remember everything but now I know a little bit about every aspect of business so I know that if, I know in general when I approach a problem I need to know more about finance for this thing then I can go back into my books or look or I just ask my friend who's really good at finance.. That's the other good thing about business school of course is the incredible network that it gives you.. The other thing I learned, so therefore I'm not scared..

Right before I'm like, business.. What is this business thing.. It could be all these things.. Now I know what are all the categories or things within business and I feel confident.. The other thing is in business school they have you go through real live cases that CEO's had to go through.. For example, like the Tylenol case.. So they're like, what happened if you found out one of them is tampered with and a kid ate it and passed away, you're the CEO what would you do now? What would you do in crisis management? So you deal with these scenarios like five cases a day where you have to raise your hand and say what you would do.. By training you to do that over and over again every day it trains a muscle in you of decision making, it teaches you like really quickly how you synthesize information and get to an answer as quickly as possible though you have to be careful because then you might start only thinking one way and the amazing thing about, at business school class is it's affirmative action to the exponential degree where they have, in every single classroom it's exactly this percentage of women to men, this many oldest children, this many middle children, was there races from all the industries.. The reason they do that is because every single person in that classroom will answer the question differently of what they would do as a CEO and they argue so convincingly that you realize that there isn't a right answer.. It's just who you are and the way you answer and you realize that strategy's important but it's actually not as important as being able to align your company around whichever direction you go..

Even if you have the perfect strategy you can't align everyone around it, it's totally useless.. It's better to have a crappy strategy, at least get everybody rowing in the same direction.. And the last thing I learned was, what was the third thing? I can't remember it but if I do I'll come back to you.. Another question? - [Attendee] Do you feel that virtual reality will ever

move from animation towards live action? - I'm biased because animation, why else, why would you want anything other than animation? He said would VR ever go beyond animation, right? Animation's perfect you don't need anything else.. Yes I believe that VR is not just about entertainment.. Entertainment happens to be what I'm excited about but I'm really excited about for example what Jeremy Bailenson at Stanford Lab is doing, right.. He's making, you look at mirror in VR and you see that you're a black woman, right? And after when you take off the headset after you've interacted as a black woman you feel completely different.. You empathize with different races, different cultures.. He had this one where you are homeless.. You go through the process of becoming homeless..

You lose your house, you have to choose which items in your house you want to save and sell and what not, it's really it's amazing and then afterwards he's proven that people are more likely to donate to homeless and they have different viewpoints.. It's this whole entire thing I just said about the empathy in action.. You actually care about these places more and that excites me because given the world today, I guess people have said that at every single phase of life, the world today, but given the world today and all the differences when you're in the headset it makes you empathize and puts you in somebody else's shoes literally.. It helps you connect with somebody else.. And it just brings out, I believe, our humanity but medical advances for sure, like practicing surgery or Jeremy has started his company STRIVR for example, which have I think Stanford athletes actually practice different scenarios in the line, I don't know anything about football but go Stanford! When you're in the lineup like what would you do when people are rushing at you.. There's so many, even think about browsing the web, right? Now we have this flat screen.. If you could browse in VR in 3D like would you actually have filing cabinets or how would you browse, how would you organize things? I think it's going to change absolutely every single industry, not just entertainment.. In the back.. Yes, and then you.. - [Audience Member] What do you think is in the future of VR tech, like beyond goggles and the handsets? - Are you saying what is beyond? - [Audience Member] What is the future of VR tech, besides goggles and handsets..

- What is the future of VR tech, besides like goggles and hand controllers? So the idea is that you don't have all this equipment because all this equipment serves to take you out of the experience so that you forget that you're totally immersed when you have to fumble around with buttons or you have this big super heavy thing on your head that is awful for women with bangs, or for tiny heads because they're made for larger heads.. Right now we're moving towards the next generation of headsets.. Oculus Connect, this was last week, just announced their wireless headsets, six degrees of freedoms that you can look and move in every single direction that's run on a unit that's not a cell phone or a PC.. Everything else, previous generation of headsets were always tethered to say a mobile phone or to a PC, something that wasn't built for VR and now they're creating stand alone headsets that are made specifically for AR and VR so that's great.. But it's still big and heavy so it's exciting when we don't have that.. And the exciting thing about the next generation doesn't have wires.. Because it's really difficult right now, to set up all the headsets, you have to mount the light stations, they can't have two shiny mirrors, objects or else it messes up the positional tracking, you might walk into a wall, all these difficult things.. So they're working on all these different areas to make it easier but I'm hoping eventually it's like the Holodeck where you can do anything and you just interact freely and maybe just you wear the clothes and the clothes automatically, like Ready Player One so you're ready in the experience without needing to put anything on.. And then you had a question? - [Audience Member] Yeah.. I just wanted to know what tools do you use to escape the box when you feel like your artistic mind's being trapped by more logical and rational side? - What do you do when you feel like you're trapped in the logical box, your artist is contained basically..

Am I asking the question correctly? Okay, what I do is I draw.. That's what I learned at Ebay.. I just kept on drawing every day whether it was for five minutes or ten minutes because I thought I didn't want to lose the artistic side of me but the strange thing is it actually made me think more creatively on a business strategy point of view because everything starts blending together.. I think that was one of the greatest strengths of the major that I created.. You would think that psychology, art and computer science are so different but I learned that they're all actually the underlying theory is similar.. It's about when I learned about paradigms, right? Like when you're painting do you start with the fuzziness first and then go into detail or do you start in light and shadows or do you start with the details first and go wide.. Same with coding, do you start with object oriented or straight forward.. Like all these different things.. You start realizing that there are connections between all disciplines that you didn't know were there and it helps you think at a higher more abstract level.. I know that sounds really abstract but trust me on this..

So when you do try to do things other than what you do normally in your job I do think that it makes you better at your existing job.. - [Host] We can do one more.. - Okay, all the way in the back there.. - [Audience Member] So my question is about the programming, how much does the audience have control over the plots, do you have like two, three arcs kind of (indistinct) and not need the graphics.. How do you control the moving of the plot given the audience control, that's question one.. And two is, is there any two way connection from the animation to the audience, are you working on anything that makes me feel the sense of touch, maybe, I don't know what is up, is there anything up? - Okay we have a two parter here.. So number one is how much control and agency do you have in the experience? And two, do you have feedback back from the animation, like feeling touch and things like that? So for the first one, every single experience that we've done has been different and there's not one right way.. In some you have less, the only interactivity where the game engine detects where you are is where you are in the scene and then the other characters follow you with the eyes.. That's the only interactivity in Invasion.. With Asteroids you literally have hand controllers and you actually can decide to save the alien or not..

In that one we made it so that even if you don't the other character rips off your arm and does the right thing anyway.. But

the audience doesn't know that it's still going to happen the same way no matter what but the ending does change because you no longer become a respected member of their team.. So you no longer have your awesome character arc because you did nothing.. So instead of branching narrative we thought about it as branching emotions.. The relationship that you have with a character changes based off of what you do and don't do.. And about the two way feedback, right now the feedback is dependent on the controllers and the devices that you have and the best we can have right now is like rumble.. Like rumble pack, it rumbles and then you have like sound feedback and visual feedback but the only haptic feedback so far is that rumble.. That being said people are creating jackets and different types of things that can give you different types of feedback as well and people are also working on olfactory devices that actually give you smells based off of what you do as well.. (applauding)..