

The Future of Work podcast is a weekly show where Jacob has in-depth conversations with senior level executives, business leaders, and bestselling authors around the world on the future of work and the future in general. Topics cover everything from AI and automation to the gig economy to big data to the future of learning and everything in between. Each episode explores a new topic and features a special guest.

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Jacob Morgan: Hi, everyone. Welcome to another episode of The Future of Work Podcast. My guest today is Paul Oyer, professor of economics at the Graduate School of Business at Stanford University. He's also the faculty director of a brand new executive education program called Big Data, Strategic Decisions: Analysis to Action. Paul, thank you for joining me.

Paul Oyer: Thanks a lot for having me.

Jacob Morgan: We have a lot of fun topics that we can explore because you have covered and written [00:00:30] and studied and explored all sorts of fun themes. We'll get to those in just a second, but maybe you can give listeners some background information about you. How did you get involved with the work that you're doing today, and what does a day in the life of Paul look like?

Paul Oyer: Well, there's no typical day in the life, I'm lucky to say. I'm sure at some point, we'll be talking about robotics. I try to mix it up because otherwise a robot can take my job over, so I'm very-

Jacob Morgan: Yeah-

Paul Oyer: ... very cognizant [00:01:00] of that. If there's an answer, if there's a simple answer to what the day in the life is, you'll be replaced in a matter of years.

I'm a labor economist. I got my PhD in economics a number of years ago, and now I've been at Stanford for about 18 years. My typical day includes either teaching, and the things I've been teaching a lot about lately are inequality, the gig economy is a big area of both research and [00:01:30] teaching interest for me, talk about the work place, the evolving work place and how trends in the labor market are affecting the future of the work place.

Then on the research side, I'm constantly looking for interesting things to study in the labor market. Right now, I've done, doing a lot of work on the gig economy. I have a new research paper that's been making the rounds looking at the gender gap for Uber drivers and the fact that despite the very [00:02:00] nondiscriminatory platform, men do make a little bit more as Uber drivers than women do and breaking down why that is.

Other sorts of research projects, I'm, have a interesting new study on entrepreneurs, which where we went all the way to Norway to do that analysis. Norwegians have great data. That's ... Then on the side, I've been developing this new executive education product in Big Data, Better Decisions [00:02:30] that will be running in the summer with a variety of teaching methods and a variety of people behind it.

Jacob Morgan: I also understand you wrote a book on dating.

Paul Oyer: I did. I actually wrote two books. One was, I wrote a book called the Roadside MBA where three economists, me and two others, went out and drove all around the United States and talked to small business people and write a strategy book. A few years ago, I also wrote a book called Everything I Ever Needed to Know about Economics [00:03:00] I Learned From Online Dating. Unfortunately, Valentine's Day has passed, so I've missed my big moment to suggest it to your listeners as a Valentine's present, but nonetheless.

Jacob Morgan: Well, there's always next year.

Paul Oyer: There's always next year.

Jacob Morgan: We'll make sure people can buy that book leading up to next year. Today, what does your typical day look like? I know you mentioned that you don't have a set day as far as work, but are there any daily habits or routines that you [00:03:30] practice? For example, meditation or running or something that you do every day that gets you started?

Paul Oyer: Yeah, exercise. I get up and before ... I'm a big believer that exercise is really important. I also am a big believer that you should get up, or at least this works for me. I won't tell other people how to do it. Get up and get it over with before you have any time to think about it and change your mind. I was in the swimming pool at 6:15 this morning.

Jacob Morgan: Wow. Just throwing yourself right in there.

Paul Oyer: Yup, [00:04:00] exactly. Even in California, it's cold. It's 6:15 in the morning. We have only outdoor pools, so that does-

Jacob Morgan: Man.

Paul Oyer: ... require a little bit of self-discipline, although-

Jacob Morgan: That's tough.

Paul Oyer: ... a lot easier than if you live in the East Coast or somewhere.

Jacob Morgan: Well, let's start off first with this new program that guys have launched, Big Data, Strategic Decisions: Analysis to Action, which I thought is pretty interesting. I've heard of a few universities that are launching big data people analytics programs. [00:04:30] I was curious why did you decide to do this over at Stanford?

Paul Oyer: Well, I think, this is ... I would hope the beginning of a broader set of big data offerings here at the business school. We have a lot of students both in the MBA level, but also at the executive level who have really good business skills, really knowledgeable about certain things. They're not necessarily statisticians or people who are going to write Python [00:05:00] or R code, but they have certain business knowledge and know that big data can be useful to them, but they're just not sure how. We've developed in our MBA classes, we have a lot more how to use data to make decisions, but at the executive level, we haven't really done that before, and so we're starting out with this, it's a one-week program. What we want to do is bring in people who will not play with data. Their job is not to code in R [00:05:30] or Python or anything like that.

What we have in mind is taking people who have a lot of great business acumen and helping them understand the tools at their disposal to go ahead and talk to the people who will put their hands on the big data and bring the information that's useful for, as the second part of the name says, making better decisions.

I think it's an imperative to understand that big data by itself is useless, [00:06:00] and on the other hand, in the modern business era, making decisions without data is very difficult, and so getting both sides of that equation together, getting the technical people who run, who really do the analysis, and then make it so that the people they feed the information to can make use of it and implement it in a way that's good for the business, that's what we want to try to help people with.

Jacob Morgan: Are you seeing a lot of demands for these conversations and for topics around [00:06:30] big data and AI and related themes?

Paul Oyer: Absolutely. Even in the other executive programs and in the MBA class, students are, of course, constantly asking us about AI and how that's going to change things and how they can win with AI or something like that. Now, of course, the questions they ask vary a lot. There are a lot of companies out there, and particularly, a lot within a 20-mile radius of where I'm sitting on the Stanford [00:07:00] campus as we speak, there are a lot of companies right around here that want to know, how can I make money, how can I build a business based on providing AI products or AI-enabled products? Tech companies are really on the cutting edge on this, but there's a real spectrum as well. I mean, if you just go down a level from that, there's a lot of companies that need to understand what can AI do for my business, how can I begin to find more cost- [00:07:30] effective ways of understanding my customer base using AI, how can I produce things, and so forth.

Then even further away from that, there are companies that are simply saying, "All these other guys are starting to develop AI and data analytics-driven programs. Well, my company isn't big enough to invest in those, so how do I make sure I don't get run over by those types of companies? How do I figure out ways to compete in a marketplace where [00:08:00] that's what's moving in?"

Jacob Morgan: Of course, all very, very important themes, but data has been around for, oh gosh, forever, but it feels like recently, the conversation around big data has completely exploded. It's all over the place. I mean, hence the course over at Stanford. How do you explain big data to somebody?

Paul Oyer: That's a great [00:08:30] question. I actually like the way you asked that question because you're pointing out the way we think about it and how, in a way, it's kind of wrong or absurd. It's not like big data came out of nowhere. It's not like we were adding on an abacus last week, and now we're overwhelmed. It's been a slow course. When I started graduating from college, I had a PC with two floppy disks on it, but even at that time, that was just [00:09:00] light years ahead of what people could do before, and then there's been a, well, a pretty fast evolution ever since. We're suddenly declaring, or at least a few years ago, we started declaring "this is the age of big data," but, of course we're already in the age of big data by relative standards, even if you go back a long way.

It's true that the amount of data's getting bigger and bigger, but, of course, you go forward a few years, and we're going to look back on the current [00:09:30] stage of big data as almost simple and we won't even be able to believe how complicated it was to get these computers up and running now that seem to incredibly easy compared to old standards.

Jacob Morgan: Especially we keep hearing about all these connected devices that are coming. Depending on the estimates that you look at, it's, what is it, 20 billion connected devices over the next couple years, if not more. Everything is basically producing data. I mean, wearables, everything [00:10:00] produces data nowadays. Clearly there's a lot going on.

Paul Oyer: Yeah, and you can get overrun by that, of course. I mean, there's a lot of data that's being created by wearables that figuring out what's really valuable in that, that's the big business imperative going forward. All our Fitbits are creating a ton of data. Is that doing any good for anybody? I'm not sold on that yet, but I believe some day, it will, [00:10:30] and we gotta figure out exactly how to make that work. My dog wears a Fitbit. Is that data doing anything for anybody? I'm not so sure it is.

Jacob Morgan: Yeah, I mean, those are definitely important questions as far as, like you said, data by itself it just useless, so what do we do with it? What examples, or do you have any favorite examples of what we can use big data for? [00:11:00] How does it help us, how does it help organizations by us being able to use and tap into big data?

Paul Oyer:

Sure. I mean, you can think about all sorts of examples from, again, from a spectrum of this company wouldn't exist without it to much lower level. I'm doing a research project right now with Uber. Well, Uber's entire business is based on the fact that they have and can use data in ways that we couldn't have dreamt of 10 or 20 years ago. [00:11:30] Why Uber's so much better than Taxis, because technology and the data makes it so that they can match supply and demand very quickly, and then also predict supply and demand a week out so that they can give incentives to drivers to make things run more efficiently. That's all driven by data. That company just couldn't possibly have existed or certainly wouldn't have been nearly as efficient, even if you go back 10 years ago.

[00:12:00] Then you can think of other victories for companies using big data. There's a nice example. There was an article on the McKinsey Quarterly a few months ago now about a fast food company. McKinsey went into this company and basically, they had all sorts of data already at their disposal about employees turning over, like any fast food company employee turnover was a real challenge for them. They spent some time and just analyzed [00:12:30] the data they had and figured out some things that predicted turnover, and they were able to make some simple changes around that, but more importantly, and firms have to remember this as they use their data, the first step of a big data project isn't always to analyze things and fix things. It's often to analyze things and figure out what other data do I need to collect?

In the case of this fast food company, they said, "Oh, we actually have some basic insights from the data we collect [00:13:00] as a course of doing business, but in order to fully understand and make decisions about what's best for employees we're going to have to go out and do some surveys and gather some other contextual data. It's not all just simple by-the-number stuff straight out of our HR system." They were able to take those next steps and then create more data, analyze that data, figure out what, again, sort of a little bit like what we said about the wearables, figure out which data they had that they could ignore because it actually wasn't that useful to them and so forth.

[00:13:30] It's a very iterative process, and that's a nice example of a company that figured out how to go through, step by step, gathering the right data, analyzing it, letting their, then following it further down the path until they got where they needed to be.

Then, of course, at the opposite, really going down the food chain, there are small companies now. As I mentioned, I wrote a book where we talked to a to of small businesses, and a lot [00:14:00] of them are starting to use social media and other things to gather data sets that wouldn't really be called big data by your standards or mine, probably, but they've really figured out how to gather enough information about their much smaller customer sets, and then to be analytical about when to offer discounts and things like that. You see it all throughout the food chain of companies, as it were, and it can be dramatic, a

whole business based on data [00:14:30] like Uber down to little tweaks that just add a lot of profits at your local café or somewhere like that.

Jacob Morgan: It certainly seems like a big part of the future of work and what companies of the future are going to look like is very much based on data. I mean, you need to make decisions based on data. But what about the human intuition, the gut feeling? Are you or any of the people that you're talking to worried that eventually [00:15:00] we'll get to a point where before making any kind of decisions, we're going to say, "Ah, let me conduct, or let me check in with my big data sources. Let me confer with my AI." Are we going to lose any kind of human intuition and decision-making, and is it all going to be done by software?

Paul Oyer: Yeah, I'm not too ... If I have to worry about the balance between people over-relying on their intuition relative to being hard [00:15:30] and analytical about what the data tell them versus being under-reliant on that and focusing too much on the data, I would still tip the balance a little more towards being analytical and getting away from people overemphasizing their own intuition.

Don't get me wrong. You absolutely need intuition, and if for no other reason than to know what's the right question to ask, I think it's less, data, intuition is maybe less important [00:16:00] for making the right decision, but really important for knowing what's the question I need to ask, how do I even begin to ask the right question? But I am not worried at all about people becoming so reliant on data that they don't use their own expertise.

That's, again, when we think in the classroom, in the executive education program we're planning, this is a big constant imperative, but also, in our MBA classes or any class we teach, we're constantly trying to think about [00:16:30] how do we take the tools allowed by current computing technology and big data and how do we wed that with good old business knowledge and institutional knowledge that comes from working in the taxi industry or the fast food industry for years. It's very ... You want the best of both worlds. We want managers who really understand their business and then can also look at the data and say, "Hey, wait a minute. Here's some new facts [00:17:00] that are going to lead me to, based on, and then combined with my knowledge, I'll say, 'Let's try this.'" That's where creativity comes from, and that's where the real big wins come from.

Jacob Morgan: I suppose that also ties into this notion of using algorithms because I know there's been some debate around over-reliance on algorithms and data because a lot of the algorithms are ultimately created by humans, and if humans have some sort of a bias or if they make some sort of a mistake in the algorithm, it'll lead to [00:17:30] faulty conclusions, and then if we make big strategic decisions on that, then everything can collapse downhill from there.

Do you have any advice on how to maintain that balance, because ultimately, humans create the algorithms. It's humans that ultimately create the software that makes, or helps us make decisions. Aren't ... What was her name? It was

Cathy O'Neil. She wrote a book called Weapons of Math Destruction. [00:18:00] She had a great quote I think where she said code is just basically like opinions, or algorithms, algorithms are code ... Eh. I'm going to butcher the code. Basically, your opinions are manifested in the code and the algorithms that you create is kind of what she was saying.

Paul Oyer:

Right. I'm going to have to admit I don't know that particular work, but the general criticism that we can rely too much on computers, that's absolutely well- [00:18:30] taken. Like I said, I really feel that in any situation, people using big data have to add something to it. If they don't, they're going to be out of a job because the computer will do the job they're doing. Again, letting the algorithm work, that's great. Asking the right question before the algorithm's developed to answer, that's the real important part. I think that there is a, that what, [00:19:00] the concern you just raised is a real one. I don't want to discount that, but I think that in the very competitive work place, in the very competitive environment we live in, if your algorithm is based on some bias you gave to it, then in the hopefully short-run but certainly in the medium-run, somebody's going to develop an algorithm that wasn't based on those biases, and there going to beat you.

We live in a pretty competitive environment, not always as competitive as we'd [00:19:30] like, but certainly a pretty competitive environment. I'm not that worried about, in the long-term, algorithm leading us down the wrong conclusions. Will there be short-term mistakes along the way? Of course. The other thing is, just on a much more simple micro level as it were, when you're developing out, any data scientist knows that the algorithm has to be done in a way that is externally [00:20:00] valid, it's tested very carefully. There's all sorts of methods for making sure we don't just jump to some conclusion that can't be replicated in other situations.

Absolutely, the concern, do we really want to let the computers make all our decisions for us? That's a big concern, but I would also say I would be happy to let computers make a lot more decisions for us than they make right now.

Jacob Morgan:

Fair enough. It's a good balance between the two. [00:20:30] Now, since you're a labor economist, of course, I have to ask you your thoughts on the whole AI debate. I probably don't even need to say more, but as you know, they're kind of two camps that have emerged: those who believe AI will create some kind of a job apocalypse, and those who believe that AI will work closely with humans and that new jobs will be created and everything will be fine. What's your perspective on the future [00:21:00] of work in AI?

Paul Oyer:

Well, I think it's an interesting debate to watch. What I think is ... As I said, big data has been an evolution, and we're suddenly using that term a lot, but along the same lines, all the AI and other things that are coming along that are supposedly going to have robots replacing employees, those are just continuations of long-term trends.

I fall pretty squarely in the [00:21:30] technology is disrupting the work place, and it's going to make the lives of a lot of people much more difficult. They're going to lose their jobs and have to find other jobs, but I just, I absolutely see no reason to be concerned that we're going not have mass unemployment.

A lot of jobs will go away. We're talking about Uber drivers. Uber drivers 30 years from now probably will not exist to a first approximation. [00:22:00] Cars will be driven by, autonomously. I don't know if it's 30 years. I made that number up. You get different answers depending on who you ask. There'll be a lot of disruption in the work place, but I feel that, when I think about trends in the work place, AI and technology, that's about third or fourth on my list of things I worry about in terms of big disruptions coming in the work force.

Now, I don't want trivialize that. There are people who are going to lose their jobs because [00:22:30] they're going to be replace either by a robot or some form of AI or some other form of automation, and I don't mean to trivialize that. They're going to go through some difficulties, but there's going to be plenty of jobs out there for those people if, there's a big if because we have a history of doing a lousy job of this, if we can retrain those people to do something else.

Jacob Morgan:

Now I'm curious. You said AI is third or fourth on your list. What are the top three on the list or the top four?

Paul Oyer:

I'll [00:23:00] give you those. Let me back up one second though and say the other reason I'm not worried, and that is, don't forget, as I said, this is an evolution. We've been through all this before. A couple of hundred years, 90% of us were farmers. If you had told the farmers, "Well, in a decade or two, we're going to have tractors, and we're now going to go from 90% farmers to 20% farmers over a period of time, and then within a hundred years, we'll [00:23:30] go to 2% farmers," or wherever we are now, that would've been the tractor apocalypse.

Well, the tractor apocalypse never happened because other jobs, suddenly, you had a lot of people freed up to provide all sorts of goods and services that people never imagined they could dream of having because they spent their whole lives plowing away on their farms. I think we'll get a little bit of that now where people will go find new opportunities to create products for people because they don't have to make products the old fashion [00:24:00] way. Now, there are-

Jacob Morgan:

Wait, wait. I have a question about that. What do you say to people that say, "This time, it's different because this time, the technology's progressing faster. This time, the scale is larger because we're not talking about thousands or hundreds of jobs. We're potentially talking about millions, hundreds of millions of jobs." That's usually the counter argument that a lot of people say, is it's "this time, it's different,"-



Paul Oyer: Yeah, I-

Jacob Morgan: ... and so what do you think?

Paul Oyer: Yeah, I [00:24:30] just don't see any evidence to back that up. I mean, it is true. When you look at ... My favorite way to scare myself into believing that I'm wrong about this is to go look at these videos of the, I think it's Boston scientific robots, have you seen these, and the things that some of these robots can do now. It's true. They can do amazing things. Of course, those robots probably cost 47 million dollars each. I don't think they're ... But the way these prices change in 10 years, they'll be \$ [00:25:00] 47 instead of 47 million dollars.

I just, I mean, I could be wrong. Maybe this time is different, but productivity increase don't, if you just look by the numbers, it's not happening yet. We still have very high employment levels in the United States right now. AI has not displaced any more jobs so far than technology. If you just look at the change in technology over the, if you look at how [00:25:30] technical change has displaced workers over the last few hundred years, I don't see any reason to think this is any different yet is how I would answer those people.

Now, at the end of the day, could this time be different? Could I and many other who believe this, who look at the old trends and think they'll still apply be wrong? I guess, but there's just no evidence to back that up yet. I just think there are more things to worry about [00:26:00] in terms of shortages of workers than in terms of an oversupply of people sitting around doing nothing.

Jacob Morgan: What do you think would have to happen in order for this jobs apocalypse scenario to happen? In other words, if you could purposely design a job apocalypse where AI displaces millions of workers around the world, what would you do to make sure that that does happen?

Paul Oyer: Wow. That is a great [00:26:30] question. I don't think I know the answer to that though. I don't know how you could, what could you do to make sure that there really is a job apocalypse, like if I had magical powers?

Jacob Morgan: Yeah. If tomorrow you woke up, and all of a sudden, AI was super smart.

Paul Oyer: Yeah, I think it needs, I mean, anticipating what people want, the combination of anticipating what people want and having the physical capabilities to do it, so you need a much [00:27:00] better version of Alexa mixed with a much better version of a robot. Then you need to add the fact that thing needs to figure out what to do on its own, not just in reaction. Jeez. I just ... I'm not, I don't have a good enough imagination to answer that question.

Jacob Morgan: Well, that's good. I mean, that means that you're very much more optimistic because [00:27:30] a lot of people say things like, "Well, AI will ... Self driving

cars. Millions of Uber drivers go bye-bye. In the financial sector, millions of traders go bye-bye."

Paul Oyer: Well, that's all going, that's going to happen, but remember, that'll take decades to sort out. Driverless cars, they're not going to show up over night. They're going to be phased in over some period of time, and a lot of driverless car jobs, it's not entirely clear that that will destroy all the jobs of drivers. [00:28:00] Cab drivers are in trouble 30 years from now. I will make that bold prediction, but truck drivers? Not as obvious. Are you still going to want a person on the truck to make sure that the goods get where they're supposed to be? Are you still going to need people to do a good amount of the loading and unloading? Sure. Now, some of that will get automated as well, but I think that in general, you're going to see a slow decay of [00:28:30] certain occupations, and we can predict pretty well what some of those are going to be, and some of them we can't even predict. There'll be innovations we hadn't thought of that will wipe out certain jobs, but I just, I don't ... It'll be slower. It's not going to be an overnight thing.

Jacob Morgan: More gradual. Which people should be worried, or people in which sorts of occupations that are maybe listening to this podcast do you [00:29:00] think should be worried and starting think, maybe I need to think about a different career or up-scaling myself. Who should be worried?

Paul Oyer: Well, I think the simplest test is just stop and think about, can a computer do what I do, or how much of my job can a computer do? If a computer can do what you do, then you're not going to be doing it, or [00:29:30] if the time will come when a computer will do what you do, then you're not going to be doing it. A cab driver fits quite nicely into that because the time will come. Some jobs that have already disappeared and will continue to disappear ... Actually, I just pulled up a slide that I use sometimes from the Bureau of Labor Statistics of the jobs predicted to die the fastest over the next 10 years.

It's interesting when you look at this list, there are some [00:30:00] that they're just jobs where if the person stops and says, "Will I have this job in 10 years," they're clearly going to say, "You know what? A computer can do most or all of what I do." Two examples on this list are parking enforcement officer and word processor and typists. Yeah, dictation software is getting better, parking can be done now through some sort of machine, but then there's a bunch of other things that are going away.

Again, I'm going to, [00:30:30] you asked me this question of other trends, and I deflected, but I'm going to come back to it on my own here. When I look at other things on this machine that are going away, on this list that are going away, it includes foundry molds and core makers, I'm not exactly sure what that is, but it's somebody that works in a foundry, and it's electronic equipment installers and repairers. Then another one is locomotive firers.

Jacob Morgan: Oh yeah. I even saw [00:31:00] butchers on the list, which, I mean, personally, when I buy meat, I like when a human cuts the meat-

Paul Oyer: Exactly.

Jacob Morgan: ... explains stuff to me, so.

Paul Oyer: Well, and straight-up butchers will probably go away, but artisanal butchers who provide you with much more nuanced versions of the meat you want, those will grow. What are all these people who are going to lose their jobs going to do? Where's the demand for them going to be created? Well, we're going to have [00:31:30] a lot of people who have a lot of money to spend who will spend it on craftsmanship and artisanal goods, so retraining as, taking your old, just hacking stuff up as a butcher, and retraining yourself as a meat provider, as some sort of artisanal meat provider, that's where we're probably going, but the thing I want to note from this list, the best one to make this point is foundry molds and core makers. Foundries aren't going away. [00:32:00] They're moving.

What is the real threat to American workers' jobs? Robots is one of them, but globalization has probably taken away a good number of ... I don't know which is bigger. Some economists have better estimates of this than I do, but both technology and globalization are taking away jobs. A lot of American jobs have gone away not because a robot replaced a person but because the person's job moved to Mexico or China or [00:32:30] wherever. That's just as important. I don't know if it's just as important, but it's another contributing factor to the disruption of the work place. Now, you could argue that's related to technology. Technology has made it so that goods produced in other countries can be efficiently made in those countries and then transported to the US, but again, that's just a big trend that's as important or on the same scale of importance as automation.

[00:33:00] By the way, but from a jobs' perspective, there's a trend that I think is much more important than any of these things and that gets lost in all of this, and that's demographics. I'm not worried about oversupply of workers sitting around because they've been replaced by robots. I'm worried about the day when everybody in the United States is 65 or over, and we don't have any people to actually do the work who are still young enough to actually, [00:33:30] or able-bodied and able to do work. I think that's a much bigger threat. If you look at the demographic trends in the United States, and especially in other countries, you'd be kind of shocked and worried about under supply of workers rather than oversupply of workers.

Jacob Morgan: When you look at those demographic trends, I mean, what are they, I don't know if you know any of the numbers off the top of your head, but in the United States, what is projected? It's just, are we seeing a shrinking of Millennial and Gen Z [00:34:00] and fewer younger workers and most people becoming older?

Paul Oyer: Yeah, exactly. If you just look at the percentage of people that are 55 and older, I have a number, I have something in front of me that between 2010 and 2020, that'll ... This is from, these are figures from the Bureau of Labor Statistics and The Federal Reserve Bank of San Francisco. The number of men in the labor force who are 55 and older [00:34:30] between 2010 and 2020 is going to increase by 33%, while the number of 16 to 24 year olds is going to decrease by 10%. That's for men, and by even a larger number for women. You're just going to see the work force aging, and as a result, as labor economists, we worry a lot about the labor force participation rate of the nation, what fraction of the people in the country are working.

That number is likely to go down. [00:35:00] That includes people either have a job or want a job. If there were mass unemployment, you'd still see a lot of people searching for job, and we would count them in the labor force participate rate, but if only ... Currently, that number is in the mid-60s, about 60% of the population, of the adult population either has or is looking for a job. If we get more and more 70-plus year olds, you're going to end up having that number [00:35:30] down in the 50, 55, 60 range, something like that, and then we'll suddenly all be wondering, it won't be suddenly, this'll be a very slow process, but after a certain point, we'll say, "Hey, wait a minute. Who's going to do all the work? Everything here is old and collecting social security."

Jacob Morgan: See, it sounds like you're, like you said, more worried that we won't have enough workers.

Paul Oyer: Exactly.

Jacob Morgan: I know people like Mike Rowe, who hosted the show Dirty Jobs on CNN, and many others, actually, have very heavily [00:36:00] been pushing community colleges, doing more traditional labor like electricians, plumbing, stuff that doesn't necessarily require a four-year degree because that's where a lot of the shortages for labor actually is. Are you on the same page there? Do you think we need more people in those fields because there's a strong demand for them?

Paul Oyer: Sure. Oh yeah, no question about it. People who were worried about getting [00:36:30] replaced by a robot, they should go out and get welding training or plumbing training or something like that. I mean, you might have different preferences, and that might not be a profession you want, but if those professions sounded all reasonable, go out and get some crafts and trade training because there's a lot of jobs out there that still need doing. Well, I don't understand how we have a big shortage of welders in this country, but we do.

Absolutely. Now, the thing to keep in mind is, [00:37:00] I'm not worried about there being a shortage of jobs. I am worried about individuals not being trained to do something useful because they only did things that get replaced by computers. What we do need is a lot more retraining. You mentioned community colleges. Community colleges are working so hard to try to stay

ahead of this and provide enough retraining, but that, retraining people is, and again, this isn't a new thing. It's [00:37:30] just an evolution. Retraining people is very important. The types of jobs that we need are constantly changing. We as labor economists study a lot the importance of retraining.

Now, unfortunately, we've come to a rather dire conclusion, which is that historically, we've been very bad at retraining people. If somebody loses a job that they've held for 20 years when they're 40 or 50 years old, they tend to never get back [00:38:00] to their earnings power they had before they lost their job. You can think of stories of this from the industrial Midwest where when the steel industry got decimated and other manufacturing areas got, the car industry got decimated, these people had very specific skills and never quite were able to get a new set of skills that came anywhere near the value that they'd held before. I don't know exactly what we do about that. [00:38:30] People are trying very hard to get better and better at retraining. So far, we're doing a pretty lousy job, and we need to work a lot more on that.

Jacob Morgan:

Who's responsible for that because it seems like you have governments that could step in, you have educational institutions, you have companies, but there's a lot a little bit of accountability that I think that needs to be on the individual right, the individual that says, "You know what? I know that things are going to be changing for my job, for my career, and I know that I need to take courses [00:39:00] or learn something on my own." I think that's kind of a new mentality because we've always been so used to other people just telling us when we need to learn something or to teach us everything. Who should be responsible for driving this?

Paul Oyer:

I think it's a combination of all of those things, but I absolutely agree that it's very hard for people to say, "What I used to do is no longer valued, and I need to change what I'm capable of doing." That's a hard thing to [00:39:30] tell yourself you need to go and do. I completely agree with the way you put it. People need to be accountable for saying to themselves, "I'm going to go get retrained," but that's an easier thing for me to say that they should do than for them to actually go and do.

Societally, we need to think about how to lower the stigma, as it were, of retraining, lower the stigma of working in, not lower the stigma, [00:40:00] but change the social dynamic so that men are happy to work in the health care field or do other things that historically they didn't do. Absolutely, we need to make some changes. There was an interesting article about a lot of companies, there was an interesting article on The Wall Street Journal that's a week or two ago now, a lot of companies complaining that they can't find workers to do certain things. Welding was one of the ones that was listed, but some of the craft things that you mentioned [00:40:30] like plumbing and what not.

Again, just getting people to think outside the box and say, "Hey, I used to be in manufacturing, but I'm handy and smart, and I can do plumbing or carpentry,

and that pays pretty darn well. Maybe I've gotta go ahead and rethink and go do that." I think people need to be much more open to that than they have been.

Jacob Morgan: Well, I'm glad that you're optimistic [00:41:00] about the future of jobs in AI. Of course, you did point out, and I want to reiterate so people know, there will be disruption, but at the same time, we will see new opportunities created, and we're not going to see everybody walking around with, I always like to say shotguns and pitchforks like The Walking Dead. Hopefully, we won't get to that point. Now, I want to-

Paul Oyer: I sure hope not.

Jacob Morgan: Oh yeah, that would be quite bad. I want to transition a little bit to the gig economy because you've mentioned [00:41:30] that you're also doing some research and work there. This too has been an area where there's been a lot of debate as far as how big the gig economy is. You see some numbers from various invested parties that say 2020% of Americans are going to be freelancers, or no, 40% of Americans are going to be freelancers by 2020, and you see some very, very high numbers. Then you see other numbers, as I'm sure you've seen, by folks like Katz and Krueger [00:42:00] where they analyze and show that the gig economy is actually very, very tiny but growing. When you look at the gig economy, what's your take on just the gig economy landscape?

Paul Oyer: I think both of what, interestingly, both of what you just said are true. The gig economy is big, and I wouldn't say 40% by 2020 is out of the question. Probably a little high, but not out of the question, and yet [00:42:30] Katz and Krueger's numbers, which are in the neighborhood of 10 or 15% are also true, and that's because a lot of people think of the gig economy without realizing a very important difference, and that is people who are all-in on the gig economy, that is, they only work in the gig economy, versus people who are partially in the gig economy.

When you talk about ... The analysis done by Katz and Krueger shows, I forget what the exact percentage is, but remember, they are using data where people [00:43:00] are asked about their primary job. They only count people as being in the gig economy if when asked, "What's your main job," you say Uber driver or a freelance graphic designer or something like that, but there are I think roughly two or two and a half times as many gig economy participants as there are people who are primarily in the gig economy, Uber being a wonderful example. [00:43:30] Some of the drivers on Uber drive full-time, but they're the exception, not the rule. Most are driving 10, 15 hours a week taking some weeks off, coming back when they need more money. They have another regular job. When that job is slow, they go drive for Uber. I think if you take a broad look at the gig economy, you're already looking at over 30% of American workers participating to some degree.

The other thing you can look at ... I've done this in a paper, I wrote a paper in [00:44:00] association with a company, freelancing company called Upwork.

They did a big survey, and their survey, which was done in association with Freelancers Union was a nice, big representative sample of the United States. There, what you found was, first of all, the numbers are in the 30-plus range of workers who have at least some association to the gig economy, but what I found interesting and surprising is that people who [00:44:30] work in the gig economy, they look a lot like the work force in general. They're from all ends of the spectrum in terms of education and age and incomes. They're just, we think of, "Oh, these poor Uber drivers who have nothing else, that's the best they can do." Actually, it's just, all sorts of people are in the gig economy, and you might not realize it day to day.

Example [00:45:00] might be a videographer. Videography work or stenography work, these things are largely freelance and all done by the gig economy. Sometimes, you're an online portal or an app, and sometimes, just, you're the old-fashion network, people call each other and get gig setup.

Jacob Morgan:

The gig economy is also projected to grow quite a bit. You mentioned the Upwork study, which I actually use Upwork quite a bit. [00:45:30] I have a team of people that I work with, almost all of them I found on Upwork. The person who's actually going to edit this podcast after it's done being recorded is somebody that I found on Upwork. The person who will help create a description for this and post the podcast, two different people, both through Upwork, and I've never met any of these people, yet I've been working with them for several years now. It's really amazing [00:46:00] how different just the talent and the work landscape is.

Are you expecting that over the next 10, 15, 20 years we're going to see a lot more contingent labor? Are we still going to have full time jobs?

Paul Oyer:

I think another myth is that anytime, at least in my lifetime or probably even in my children's lifetime, the idea that traditional employment will go away. That's also just not true. Having said that, will [00:46:30] the gig economy grow as a share? Will there be more people working independently? Absolutely. Again, technology's made this all possible. You couldn't have had that cadre of workers working part-time for you independently helping you with your podcast if it weren't for the fact that remote work has become so much more convenient than it used to be, but there's still a use for companies. There's, oh, there's just so many reasons [00:47:00] for that.

We still ... There are so many things that just get done day in and day out and can keep multiple people busy full-time, well, the most efficient way, and require interaction, face to face interaction. A university, which is a good example because comes right to mind because I work in one, is a good example. At least for the time being, we're going to have classes, and it makes sense for me to work in the same building with the people who support [00:47:30] the classes I teach and the research I do. That's not going to change for a while. Sure, we'll bring in more outside talent over the Internet, and that will build up what we can do here at Stanford by using contractors and freelancers from time

to time, and that will increase as a percentage of the work that gets done here at Stanford in the economy, but I don't think big traditional employment will go away any time soon.

The other thing to keep in mind [00:48:00] is freelancing is great for a lot of people. A lot of people just love it. If you ask, "Why do you freelance?" flexibility is the first word people use. You can be much more flexible about the times you work, how many hours you work, all sorts of good reasons, and allows you to balance things that go beyond your job. It can be your children, your other family members, your interests, what have you. However, while freelancing or working [00:48:30] in the gig economy is great for a lot of people, it's terrible right now for most people. Most people are just not set up to be that flexible and to be that entrepreneurial. They would rather have a schedule and show up and know, "Hey, this is the time I've cut out to do my job, and here's my assignment. I'm going to go ahead and do that." Working, even as an Uber driver, you have to have the wear-with-all and the energy to get up and just start [00:49:00] driving and not have somebody tell you, "Hey, if you don't go drive now, you're in trouble."

There's a nice paper written recently by a couple of economists that I know. What they did was they posted some jobs and asked people about their preferences for jobs, and there were just a lot of people who will literally pay extra money not to freelance. They want to be told, "These are your hours. Come in then, and do this job at [00:49:30] that time." For those people, it'll be awhile until those people change their minds and realize, oh, the gig economy is better.

Then the final thing I'll say on this is, there's another problem with the gig economy for a lot of work, and that is it can be lonely. Work places are social places. We come in to work because we have friends there. Many people meet their significant others in the work place. It's just, the gig economy will grow, but it's [00:50:00] not right for everybody. It'll be a long time until it is.

Jacob Morgan: It's also pretty hard. I mean, I suppose I would be considered a gig worker, I mean, a speaker, author. I probably work with 50, 60 different brands, companies every year. I suppose, technically, that's gig-

Paul Oyer: You are a gig worker.

Jacob Morgan: Yeah. Exactly. I mean, I guess ... Small businesses, under the new definition, or I suppose whatever definition, are small businesses considered [00:50:30] part of the gig economy?

Paul Oyer: No. I would not ... If you have other employees, then you're part of a bigger-

Jacob Morgan: Contractors.



Paul Oyer: ... organization-

Jacob Morgan: Yeah, I have contractors.

Paul Oyer: Yeah. No, but then I would call you a gig worker. I would call you a gig worker. Once you start hiring on regular employees, then you become a small business.

Jacob Morgan: Got it. All right, well, good to know. Technically, I'm still considered a gig worker. I mean, you mentioned a lot of the benefits of gig work, [00:51:00] but few people realize that gig worker is synonymous with basically starting your own business, being an entrepreneur. It's not as if that you can just quit your job, put up a profile on Upwork, and just sit back, and the jobs will flow in. I think there's a lot sometimes of confusion of people who say they want to become a gig worker, but they forget that you need to learn things that lie outside of your core skillset. You need to learn sales and contracts and [00:51:30] putting together proposals, even if you're a graphic designer. You're right, it's not for everybody because it can be challenging to extend beyond what you're used to.

Paul Oyer: Absolutely. I mean, again, even if you become an Uber driver, you have to figure out some of the details of the reporting of income and things like that, but the other stumbling block is you've gotta make yourself get out there and go work. Nobody's going to do it for you. [00:52:00] No matter where you are in the skill level, the gig economy is a different, it's a different animal, and it doesn't appeal to everybody.

Jacob Morgan: Are there any other trends that you were paying attention to? We talked a little bit about AI. We talked about contingent labor. We talked about aging demographics. What else is kind of-

Paul Oyer: I really-

Jacob Morgan: ... catching your eye?

Paul Oyer: I'm really bullish on women.

Jacob Morgan: Oh okay, fantastic topic. I know we have a lot of women listeners. [00:52:30] Please explain.

Paul Oyer: Well, I think women have come a long way in the labor market, and I think all signs point to them continuing to do better in the future. I'll just give you two signs about that. The thing that's worked in women's favor for a number of, a trend that's work in their favor for a long time now is the value of strength in the labor market is just much less important than it used to be.

Why did men work in factories and do [00:53:00] the primary work on the farm? Well, I'm sure there was some sexism, and I won't get into that, and I won't try to figure out exactly how much that played into it, but certainly, one

contributing factor was just a simple, on average, men are stronger than women. In moving, in trucking, in farm work, in certain factory jobs, men were just better than women on average. Not all men were stronger than all women, of course, but on average, that was true. [00:53:30] Well, it still is true, but on average, that was valuable.

Well, as robots and as manufacturing jobs move overseas, as tractors replace farm hands, as all sorts of other trends in the labor force make it so that strength isn't as valuable as it used to be, that makes women much better substitutes for men than they were back when my grandfather was in the labor force.

Going forward, the trend that you see, there's a nice recent paper written by [00:54:00] some economists on this. What they did was they carefully looked through job descriptions and different types of jobs, and what they found is that if you look at what's valuable in the work place over time, a trend that's been slow but study is that social skills are worth more than they used to be. Being a social creature makes you better in many work environments, and that's become more true [00:54:30] over time, but-

Jacob Morgan: I actually found ... Speaking to that point, I was at a conference in Half Moon Bay not that long ago, and-

Paul Oyer: Ah, nice place.

Jacob Morgan: Yeah, and one of the presenters was Microsoft, and they acquired a data company called VoloMetrix. They published something for HBR where they found that inside of organizations, managers who have bigger internal networks within the organization usually have more engaged employees. I [00:55:00] think that just very much fits in with what you're talking about, about the social skills, networks, kind of the more the human aspect of work.

Paul Oyer: Exactly. Exactly.

Jacob Morgan: So sorry. Didn't mean to cut you off.

Paul Oyer: No, no. That's-

Jacob Morgan: Carry on with your-

Paul Oyer: ... fine. No, that's good.

Jacob Morgan: ... train of thought.

Paul Oyer: That's good additional point. Well, I was just going to say though that women, although sequel, are a little better socially than men, so this trend in favor of ... Now, that's if we could get rid of potential [00:55:30] sexism and other things

that have held women back in the social side. If there's an old-boy network, that's going to hold women back, but as we break down those barriers a little bit, women are just better at getting along and finding compromises. I'm talking at very broad generalizations, of course, but the data back this up in terms of things that have made women advance. I think that as the world gets even more social, that's a good thing.

Now, there is one trend holding women [00:56:00] back. There's one trend that's held women back for a while, and if it's not changed, will certainly continue to be an impediment, and that is, at least in the very educated part of the skill distribution, so-called STEM work is very valuable. STEM: science, technology, engineering, and math. Women have, if you look at what they major in in college, women tend to be much less likely [00:56:30] to major in STEM-based fields than, women tend to be much less likely than men to major in STEM-based fields.

Now, if you look at colleges now and graduate degrees as well as undergraduate degrees, women are getting them in much bigger numbers. That's another indication that women are doing very well, that are placed to do well in the labor market. They're becoming noticeably more educated than men, but the one caveat to that is, they're getting educated in areas [00:57:00] that might be, on average, a bit less lucrative because they tend to be a little less scientific.

Jacob Morgan: Interesting. Why do you think that is? Is it because of-

Paul Oyer: I am not going to weight into that question.

Jacob Morgan: Why are a lot of-... debates even of-

Paul Oyer: I am merely going to tell you that that's a fact, that women are much less likely to major in STEM-based fields than men, and the reasons for that are of great deal of debate right now, and I don't want to dog [00:57:30] in that race.

Jacob Morgan: Got it. All right. Fair enough. No, I understand. There's a lot of debates on that. I know we just have a couple of minutes left. We touched on a lot of themes. To wrap up, I think it would be really interesting to get your perspective on the future of work. This is a very open-ended broad question that sometimes people ask me, so I'm going to ask you. What's the future of work?"

Paul Oyer: Wow. It is a great question. I think [00:58:00] it is not, in my lifetime, it's not as different. I'm in my early 50s. In my lifetime, it's just not as different from what it is right now as you might think. The work place is a constantly-evolving place. For some people, it evolves in a very scary and quick way, but [inaudible 00:58:26] it on balance, the work place evolves slowly, and [00:58:30] that will continue to be true.

I think the thing to keep in mind is that if I took a hundred random people, and I looked at them now, and I looked at their work place 10 years from now, I think what you'd probably find is that 15 of them would've gone through some dramatic change in their work environment, and they would be in a radically different setting than they had expected or than they were in the 10 years' earlier. The other 85 [00:59:00] would say, "Wow. Things have changed quite a bit in these 10 years," but they will be much more along the lines of, "We built some new building, I moved ... " They will be much more on the evolution side than the revolution side.

I would keep in mind that the big changes we expect, they're going to be huge in any given period of time for some small subset of people, and they're going to be slow [00:59:30] and steady over a period of time for most people.

Jacob Morgan: Yeah. That's an interesting way to think about it, but in general, it sounds like you are optimistic about the future of work?

Paul Oyer: I'm very optimistic about the future of work. Of course, the little bit of advice I would give to anybody out there who cares about my advice is if the future of work is going to be good for you, you have to be looking for opportunities to constantly update your skills and say to yourself, "What [01:00:00] can I do so that make sure I'm doing something that a computer cannot do?"

Jacob Morgan: Perfect. I think that's wonderful advice. Just to wrap up, just a few very fun rapid-fire questions for you-

Paul Oyer: Excellent.

Jacob Morgan: ... starting off with what is the most embarrassing moment you've had at work?

Paul Oyer: Wow. I can't believe nothing is literally, I can't believe nothing is happening [01:00:30] as, I'm not having a good answer. I'm sure I have a better answer than this but I will tell you one that comes to mind: When I talked for three whole hours wearing a very nice suit in a MBA classroom, for three hours wearing a nice suit and tie and everything, and then I looked down at the end of the three hours, and I had one of those fluorescent bike things still holding my pant leg in place.

Jacob Morgan: All right. [crosstalk 01:00:58]-

Paul Oyer: I'm sure I can come better with answer [01:01:00] if I was given more time. I'm not too sure I would reveal them on your podcast, but that's all I can think of right now.

Jacob Morgan: What's a book that you recommend, and it could be a business or a non-business book.

Paul Oyer: A book I recommend. I love the Rabbit books by John Updike. They-

Jacob Morgan: Huh. Never heard of those.

Paul Oyer: Transformational for me, but they're kind of midlife crises books, so they might not be right [01:01:30] for everybody.

Jacob Morgan: Huh. I'll check those out. If you could have dinner with anybody in the world, who would it be? They could be alive or dead.

Paul Oyer: Oh wow. So many people to choose from there. For lack of a, I mean, Abraham Lincoln would, I might be able to come up with someone that would excite me even more, but I'll go with Abraham Lincoln.

Jacob Morgan: I think I've had one or two people in the past mention Abe Lincoln as well. If you could live anywhere in the world, [01:02:00] where would it be?

Paul Oyer: Stanford, California.

Jacob Morgan: Hey, and I'm guessing you live in Stanford, California.

Paul Oyer: That's how lucky I am. That's correct.

Jacob Morgan: Last two for you. If you could get rid of one work place practice today, what would it be?

Paul Oyer: This isn't really a practice, [01:02:30] but I think if I could come down and sprinkle fairy dust on everybody and make it so that they carefully think through whether or not they really need to have a meeting, and if so, how long it really needs to last, boy, you could unlock a lot of productivity in your average work place.

Jacob Morgan: Oh, I'm sure people would love you if you could do that. Very last question for you, if you could implement one work place [01:03:00] practice or policy, which one would you add?

Paul Oyer: That's a great question. I need more time on it. You're asking much deeper questions.

Jacob Morgan: I know. That's why they're rapid-fire. Kind of surprise you.

Paul Oyer: Better coffee in the work place is all I can come up with, but I-

Jacob Morgan: Hey, that's not bad. Better coffee. A lot of us are powered by coffee so, hey, that works.

Paul Oyer: Exactly.

Jacob Morgan: Perfect. Well, where can people go to learn more about you and connect with you. I know you're on LinkedIn. You have this new program that you're [01:03:30] launching. Anything you want to mention for people to connect more and learn, please feel free to do so.

Paul Oyer: I am on Twitter, @pauloyer, P-A-U-L-O-Y-E-R, all one word. Also, if you want to know anything about any of my books, just google Paul Oyer, that one's two words.

Jacob Morgan: Perfect. Well, Paul, thank you so much for taking time out of your busy schedule to speak with me.

Paul Oyer: Thank you for taking the time. This has been really fun.

Jacob Morgan: Yeah, likewise. I enjoyed it. Thanks everyone for tuning into this week's [01:04:00] episode of the podcast. Again, my podcast guest has been Paul Oyer, professor of economics at the Graduate School of Business at Stanford University. He's also the faculty director of a new executive education program called Big Data, Strategic Decisions: Analysis to Action. Hope you guys enjoyed it, and I will see all of you next week.