

[SQUEAKING]

[RUSTLING]

[CLICKING]

**ESTHER DUFLO:** So where we left it last time was that basically, the tests of the basic household models in particular, on the efficient household models, basically failed both in the production space and the consumption space. So we'd better think about something else in order to try to understand the family. And this is what a lot of the recent literature has tried to do without yet getting to another framework that would be a satisfactory alternative framework. But at least we have some clues.

So I'll talk about some of this paper first. And then I'll do a unit on female labor force participation in gender on the labor market to complete. So one first set of issues that people have looked at is the information flows.

Basically, one of the assumptions of the efficient household model is that people who are part of a family should do better than any random people playing some games simply because they know each other. And they have the ability to communicate easily. And this is something that has been put to the test most recently by a nice paper by Gautam Rao, Matthew Ridley, who is a student in the program who is on the job market this year, and Frank Schilbach, whom you know well, which looks at whether people share information that they both transparently know that they have.

And what I'll show you in a minute is that people do not share information. In particular, husbands pay no attention, or pay little attention to the information that they know their wife has for a simple problem. So the experiment is the following.

It's a social learning experiment with 400 couples and 500 strangers, which is trying to ask whether people respond similarly to info that was given to them or was given to their spouse, whether that's different from men and women, whether this is due to a lack of communication, or whether the information is not weighed appropriately, even if you know that it exists, and whether couples are behaving in any way differently from any random strangers on these dimensions.

So what they did is that they gave people one of these games where you are trying to guess the share of red balls in an urn. And then you are making more money if you get closer. People then are given signals on what the share might be, either for themselves or their spouse in the spouse treatment.

Their spouse can get a signal. And then they can discuss to find out whatever signal their spouse got. And then there is a third treatment where the spouse gets a signal they don't even need to discuss. Frank or Frank's [INAUDIBLE] is telling them, hey, it would be, for example, telling me, Abhijit has gotten the signal that there are 2/3 of blue on in the bowl or that in his own drawer, he drew mostly blue balls.

So the key outcome of interest is in the Bayesian updating as a function of your signal-- how much weight you put on your own signals depending on who uncovered them. So clearly, if there is information pulling in a household, it's nothing very tricky here. You should weigh your information, your own and your spouse's information equally. So in the third treatment, you should clearly weigh the information of the spouse equally.

And then maybe in the second treatment, if people find it difficult to communicate, you will lose something a little bit, not that here there is nothing like-- there is nothing strategic. The earnings, the proceeds of the experiment are shared between the husbands and the wife. So the dominant strategy is clearly to do as well as possible.

There is nothing that you can gain by not paying attention to the full signal. So it's really focusing on this-- are you even able to communicate or to pay attention to what the other has to say? So the bottom line-- and I guess that's the key result-- is that husbands heavily discount the weight information, even when it's perfectly communicated. So you can see, as a function of what people eventually-- yes, you can, backward in-depth. What is the weight that they give to their own information, to the information given to the spouse, either consummated directly or by discussion?

And basically, what they find is people put a lot of weight on any new information they get by signal, which suggests that their own prior is quite flat, as it should be. Because how would you know? So people put a lot of information on their own signal, but they put less information-- much less information-- on a signal that's given to their wife, and that they could discuss about.

And strangely enough, when they are told, instead of here's your signal, here is your spouse's signal, where the really should be exactly the same-- there is no discussion issue-- they pay zero attention to this. So that's pretty striking in the sense of it's not even about lack of communication. It's just they're maybe so used to not paying attention to anything coming from the wife that even in this case, where it's signals about how many balls there is in the urns, they don't pay attention.

For the wife, that's not the same thing. I used to pay-- the wives actually pay just as much attention to the information given to the husband and to the information that they get themselves, which is the rational thing to do. So you might wonder whether it's about gender in general, or just simply women being more smarter, or more open-minded, or more paying more attention to the information of others in general.

But in fact, when you do the information with strangers-- so you can do the same thing-- instead of pairing you with your spouse, I'd pair you with a perfect stranger-- similarly, with a perfect stranger, you should be able to discuss if they have the signal. And you have to elicit it from them. Or if I give directly, this is the signal that Ricky got, you should just treat this exactly as your own.

And then I didn't put back the graphs, I think. Yeah, I didn't put back the graphs. But the finding is that people pay little attention to the information given to strangers. And there, women do the same thing as men.

So the fact that we see women paying attention to their husband is not due to the fact that women in general pay more attention to information that is transmitted by other people. But it's something about the household. Women are used to listening to their husband.

And husbands are used to not to listen to their wife. And nobody listens to strangers. So irrespective of the household context, it's pretty interesting for social learning because that's going to limit a lot of social learning if nobody pays any attention to anything that someone else tells them.

But for the point of view of the household, this really puts a clear wrench in the theory that the information communication is perfect in the household, which would go towards efficiency. So that might be one reason why efficiency is not achieved within the household. Any questions on this study? Yes.

**STUDENT:** Did they offer interpretation for why they're perfectly communicated? You would think that the perfectly communicated in the discussion would--

**ESTHER DUFLO:** Yes. Yeah, this is quite surprising in that. Because it's not about the inability to communicate. It's just basically, you don't trust the information that comes from someone else even though it's information-- even though you're perfectly-- there's no agency of that other person.

**STUDENT:** Why does the discussion have a dead end treatment then?

**ESTHER DUFLO:** Then the direct-- I don't know. That's surprising and interesting. I don't think that we have a good answer.

I don't think that they have, necessarily, a good answer. Yeah. Erica?

**STUDENT:** Does the graph for when people have stranger-- when people are speaking with strangers look the same in terms of--

**ESTHER DUFLO:** Yeah, it looks like the husband's graph.

**STUDENT:** OK.

**ESTHER DUFLO:** I'm pretty sure. I certainly have a doubt of whether there is-- the order is the same. I don't know whether the jump is that big between directly communicated versus communication. You can probably check it by the end of this lecture. I have it somewhere.

**STUDENT:** I guess it would be interesting if the spouse is signal by discussion is fatter than a perfect stranger, or if it's exactly the same as as a perfect stranger.

**ESTHER DUFLO:** I'll check that for my phone. I'm very scared of moving my computer. Again, I have the slide somewhere. Yeah, that's the same except the stranger discussion is a little bit closer to the perfectly communicated signal, but the other is the same.

And for women, again, the order is the same. And both bars are a little bit higher. So women don't apply zero information to the signals of others, but almost zero.

So that's a cool paper. Very interesting, very creative. So in this case, we found woman paying attention to what their husband tell them. We find husband not paying attention to what their wives tell them.

And then there is one more possible step, which is are you going to try and manipulate information when it's inconvenient for you? So in a paper by Nava Ashraf, Erica Field, and I think she's Jennifer Lee, women are proposed to jump the queue to get an injectable contraceptive that's valid for three months.

Now this is in Zambia, where, like in many African countries, women and men have different views on how many children they would like to have, with men wanting to have more children than women, partly because, probably, they are not internalizing the fact that the chance of dying in childbirth is not at all zero. So they have these different preferences. That's well established in this context.

So what they do in this experiment is that they are giving people-- so there is injectable contraceptive exists in Zambia, but there is a long queue to get it. They give people a voucher to jump the queue. And there are two treatments.

Either it's the individual who gets the-- the individual woman who gets the voucher, or it's the couple who gets it together. You don't go to discuss it. And in fact, in many of the discussions in population council, et cetera, people who are discussing contraception, there is that view that involving their husbands, having a discussion with the husband on contraception is a good thing. Because you need their go-ahead.

So in the policy world, the prior on this would be that the effect on in terms of taking an appointment and ultimately getting the shot would be larger if there is a couple discussion than if given straight to the individual. But of course, it omits the fact that the woman could just decide to go get it done. And nobody would be any wiser.

So if she anticipated a difference in opinion, she might just suppress the information and not tell anybody, and get it done. So that's basically a nice setup where you're running an experiment. And you don't know what the result might be.

And what they find here very clearly is that-- so you are now comparing the individual versus couple. And people who were assigned to the couple treatment are less likely to redeem the voucher, and ultimately less likely to receive the injectable. So that's not quite significant when we take all of the women.

But some women-- it involves a lot of 0 because many women never applied. If you look at the people who responded to the survey, there is a 26 percentage point decline in actually redeeming the voucher on a 65% basis. So it's something that people are interested in. 65% of the women do it.

But this gets done by 26% percentage point if the men are involved for redeeming the voucher in terms of actually receiving the injectable. 30% of women actually receive the injectable in the individual treatment. But it goes down to 7% in the couple treatment.

So here is clearly a case where the woman just didn't tell her husband and got it done. Yeah.

**STUDENT:** So why, if the voucher is for skipping the-- moving forward in the queue, why do we expect there to be different outcomes before redeeming the voucher and receiving the injectable?

**ESTHER DUFLO:** Yeah it's not till-- you redeem the voucher. You have your consultation. And then once you have your consultation, you discuss it.

And then they might decide that they don't want to do it. Because it's three months. And there are side effects. And so the voucher is for the consultation. So of people who get the consultation, some people might get cold feet in the process.

So that's the difference. So this is a setting where the most likely explanation is that the woman who got the [INAUDIBLE] never discussed it and then just got it done. So it's not necessarily the fact that households-- so this is woman suppressing information. Matt [? Lo ?] and Maddie McKelway, who were both students here when they were students here-- they're on the opposite experiment.

And in fact, I wrote not a generalizable result. But now that I think about it, I should have written, that was information given to women and then hidden by women. And now this is information given to men on a different topic. So it's a different context, different topic.

But one of the things that changes is the information is given to men. This is previewing women in the labor market. They gave either man or woman a voucher for access to a training program for women. So if they gave the voucher to the man, it was for his wife to access this training program.

So they either had it given to the man privately-- so if he was not interested, he could just eat up the information and never discuss it. Or they gave it to the woman privately, or they gave it to them, forcing a discussion.

So there again, the idea here in this case, the difference in opinion, as we will see, is that a lot of women would like to work. And most men prefer if their wives don't work. So the easiest thing for the husband would have been to just not even share it.

In that case, the final take-up of the experiment might have been lower in the case where the voucher is given to the man only. In fact, what they find in terms of final enrollment is that the final enrollment of the woman if the husband gets the ticket is as large when the woman isn't even informed that the ticket exists as when she's informed. In fact, if anything, slightly larger if the woman is not informed.

But let's say these two are the same. So it means that there is no additional-- there is no loss in allowing the husband to never discuss it with their wife because our wife is not even aware of the information. So even if a wife is aware of the information, finally, the outcome is the same, maybe because there is zero bargaining power that she has anyways.

We're going back to the Frank and Matthew and Gautam thing. If you pay no attention to what she's going to say, you can let her know. Or you can not let her know. Doesn't matter.

You are making the same decision eventually. But she doesn't seem to be hiding information. And then interestingly, in the discussion group, the final take-up actually goes down.

So forcing a discussion on the issue-- which their intuition was it's going to increase the take-up because it's going to give a chance to the wife to say-- so it's a discussion with someone like a facilitator basically being present in the discussion. And according to the transcript of the facilitator, they are very polite and discussed the opportunity, and so on. And so the prior here that it would make the thing go up because their husband could learn, the wife would have a chance to express her preferences, also to address, maybe, some of the concerns of the husband, and so on and so forth-- but in fact, the opposite happened.

And when they discussed it, it crashes. So we don't have a good model for that. They proposed something where just discussing, having arguments is too costly. And people hate fighting about things.

So if you force them to discuss, they actually shut down their mind. And they're like, don't even want to hear about it. When the wife get the ticket, the husband has to approve, at the end of the day.

So the wife doesn't get-- it is asymmetric here. The wife doesn't get to enroll in the program without her husband knowing. So here we would expect that with or without information would be a similar enrollment. And that's more or less what we find.

The discussion effect is lower in this case. It's clearly in the case of the husband, the fact that the discussion effect is lower. And interestingly, the overall take-up from the was getting the ticket from the husband getting the ticket is more or less similar.

So maybe it's a little different than what we found in [INAUDIBLE], where if the information gets from the wife, it's entirely discounted. Here it seems that the source of the information and the ticket doesn't seem to matter much for the final outcome. So just to say that these things are still-- I can't say that we have yet stylized patterns, but very interesting, very interesting set of facts. So let me stop here for general-- yeah.

**STUDENT:** To what extent has this literature on gender norms and information sharing been replicated in other countries, other cultures and stuff like that? I think all these papers we looked at were India?

**ESTHER DUFLO:**No. The Ashraf and Co. is in Zambia.

**STUDENT:** OK.

**ESTHER DUFLO:**There is some work in the US, which I'm going to discuss in a minute, on women in the labor supply. So I can't say the entire globe has been covered, but it's not just India. India has a particularly anti- female labor force participation.

It does. The labor force participation is lowest in the world in India, lower in Saudi Arabia or other places that you would consider to be pretty antiwomen's work. So I think that's a good question that all of the work that is in India might be tainted by this particularly strong social norm against women working.

But for example, a lot of the work that we've seen on the household actually was not from India. For example, you'd read my paper with Chris Udry is from Cote d'Ivoire. The [INAUDIBLE] paper is from Burkina Faso.

So I actually do think there is a fair amount of things on the households that's not on India. And I think you're absolutely right that the culture setup matters a lot. In terms of women labor force participation, quite a bit of the work is on India, perhaps because this is such a surprisingly anti-women work setup.

OK. Let me just continue talking about-- very relevant. I just put them in a different set of slides for having logical consistency. But it's very much the continuation of talking about the family with the angle of talking about women in the labor market. So this is a very active area of work right now.

A lot of exciting stuff are being done. There's still more stuff to be done. But this is one of the places where there is a lot of recent papers.

So I thought it made sense to have a whole lecture about that. So interestingly, if you read papers on bargaining power in a household in the US, the outcome that they show to show that women have more bargaining power is leisure. That is, female labor supply, which is seen as a sign of low.

If women have to work, is seen as a sign of low bargaining power in the US. So for example, if you read Josh Angrist paper looking at the marriage market and showing that women who are from ethnic communities where there are more men relative to women have more bargaining power, the idea being that if the union breaks, it would be easier for them to remarry.

Well, in that paper, the outcome is female labor force participation. What it shows is female labor force participation is lower in these groups where women have higher bargaining power. And in the [INAUDIBLE] papers from the US as well, this is pretty much always woman labor supply.

They like that outcome because leisure is a good that is privately consumed and is a bit harder to share. So that makes sense. But of course, in most developing countries, that would be a silly outcome because female labor supply is actually considered to be, on the contrary, something that women want to do and their husband don't want them to do.

So there is a nice review paper by Rohini Pande and co-authors, which is basically descriptive evidence of what women want to do and what men want to do. And what it shows is that most women in most developing countries, particularly in South Asia, but not only, women would like to work. And their husbands don't want them to work.

And in fact, they are less likely to work. Just in terms of background, this is a bit anticipating what we're going to do in 772. But there is a recent paper by Hsieh published in *Econometrica*-- Hsieh and others, Chang-Tai Hsieh and a bunch of other people, which extend their framework, which you're going to become painfully familiar with in 772, on misallocation of resources to show that in the US, the entry of Black people and women in better paid occupations have led to a large increase in labor force productivity simply by allocating talent to where it should be going.

And in particular for students in the second year who are thinking about their paper somehow, I absolutely love the first sentence of their abstract. It says, "In 1960, 94% of doctors and lawyers were white men. By 2010, the fraction was just 62%."

So why do I love this way of writing the abstract? It gives you a very concrete fact that you might have known qualitatively, but not, maybe, quantitatively. And it sets the stage for their next question, which is presumably, it's not because they have become more talented at becoming lawyers.

So this is related in part to barriers-- institutional, cultural, and social norms, et cetera-- that made it harder for them to access these jobs in the first place. And therefore, it should lead to a better allocation of talent and more productivity. So that's what the paper went on doing. And so they calibrate that 20% to 40% of output growth in the US can be explained by this.

So given that it's a period where output growth was in general slower, this is saying it would have been even slower if women and Black people had not been able to access, in larger numbers, those occupations. So this first sentence of the abstract. It's wrap in one sentence. It just sets up the stage very nicely.

It said, this is an important question. And of course, from there, he could have gone, I'm going to explain why. And in fact, that's not what they are interested in. It's explaining the consequences. But it sets up immediately why we should care. Yeah?

**STUDENT:**

So just to understand, it's just the striking quantitative. I feel a lot of abstracts start with a very concrete sentence, some facts, but maybe not as concrete as this.

**ESTHER DUFLO:** I think it's a very concrete fact, somewhat unexpected in terms of the quantitative aspect. And that immediately shows-- I'm going to show you the impact of-- the next sentence goes, I'm going to show you the impact of this transition. And this is likely going to be large because that is a lot.

Other paper from the US, which relates to this idea of woman in labor supply as actually something that they would like and that is constrained by their husbands in the US as well. Paper by Leo Bursztyn, Thomas Fujiwara, and Amanda Pallais in MBA at the top business school that's not very far from here.

They had them work in their orientation session a very mixed group, mixed gender group, or in a single sex gender group. And then they had them say what type of job they want to apply to. And is there any way that they were supposed to say it.

Either it was said, this is going to be discussed in your entire group, or this choice, this survey is going to remain private. So this is a typical Leo Bursztyn trick that you also have in their education paper on basically threatening to make an affirmation of value, public or not, which therefore makes it social, and potentially has it hit the social norms or not. But this is perhaps my favorite application of this trick.

Because it seems very natural that you would either fill this survey privately or discuss it with the group. And this seems to be a large enough manipulation that people would be sensitive to it. Anyway, what they find is that when women are doing this choice of, are listing their choice of preferred careers-- this is very high stakes because it's information about careers. This is in the career field.

So what they report is what they would have believed at that time-- subsequently, I assume, they had another chance to report-- is going to be what the counsellors are going to use to find them internships, which turns into job. So this is a very high stake decision. And in gender unified group, single gender group, it makes no difference to do it publicly or privately.

But in groups where there are both men and women, women are less ambitious if they think that their choice is going to be publicly revealed. They display less ambitions in the treatment where they are made to believe that their choice is going to be publicly revealed. So that's why they call it acting wife because they think that the future wife-- sorry, let me finish-- that is true only for a single woman, but not for married women.

So for a single woman in mixed group, they are much less-- they are revealing less ambitious choices if those choices are going to be public than if they are going to be private. So they relate that to the thing that if you don't want to appear to be an overambitious woman if you're single. That makes you less marriageable, less attractive on the marriage market.

And presumably, the men around you in your MBA program are potentially mates. So that's to show that this phenomenon of maybe women anticipating the desire of their husbands or potential husbands that they shouldn't work or they should not be ambitious in their work is pervasive. So this last fact-- it's consistent with an efficient household model with limited commitment.



That is, one where the person who has-- people are bargaining efficiency based on how much money they bring to the household. But then if, for some reason, you have an exogenous shock, and suddenly your bargaining power increases, you channel your share to-- your outside option increases, then the bargaining power is renegotiated. So in a fully efficient household model, there would be no renegotiation every time someone gets more money.

But in a model with limited commitment-- which by the way, has become the workhorse model of insurance, both in developing countries and in developed countries, where bargaining power is affected by people's outside option-- means that a woman who works more, who earns more, has more bargaining power in the household. So she cannot-- this young woman finishing their MBA cannot say, OK, I'm committing to not bargain hard.

I'm committing to a low bargaining power in a household. But let me earn more money. It's going to be good. It's going to be more money for you to spend, after all, right?

They can't do that because once they have the money, they'll be in a position to say, fuck you. If we are not bargaining the way that I would want to bargain, I'm just leaving this household. So that's consistent with that.

And then maybe that's why they don't want to display that they have this kind of ambition. It is also consistent with more general social norms that women shouldn't be working or that, as we'll see more in a minute, they should not earn more than their husbands. So let's spend some time talking about these social norms about women working.

Even before the social norms, there is a legal framework. And often, we tend to forget as economists, we are [INAUDIBLE]. We consider that the legal framework is irrelevant. Any negotiation can happen anyways.

But in reality, the legal framework-- what is legal, what is not, what are their rights-- do determine the context in which these negotiations are happening. And Penny Goldberg, when she was chief economist at the bank, led a project where they put together a new exciting database on gender rights. They have rights in labor market, in property, anti-discrimination.

And that database is public. You can use it to do whatever you want. And it's updated every year. And they have a short paper in *AER Insights* where they are just putting together some descriptive data facts about this database.

And just a few things-- first of all, the average is 75 out of 100. That is, for every four rights that the husband had, that men had, a woman has three. It's particularly low in Middle Eastern, North Africa, and South Asia. It's not going to surprise you.

40% in MENA-- so women have 40% of the right of men. And 60% in South Asia. So it's not just about social norms in India, in Bangladesh. It's also the law.

And they also show a strong correlation between legal rights and female labor force participation and the gender gap. So it is not true that the laws on the [INAUDIBLE] are irrelevant. Except perhaps you could say, well, this is just all correlation. So in places where they are not interested in giving women access to the labor force anyway, it's also the places where the laws are less generous. So at this point, it's just a correlation.

**STUDENT:** Question?

**ESTHER DUFLO:** Yeah.

**STUDENT:** How should we think about how legal [INAUDIBLE] say 40% [INAUDIBLE] relate with underlying economic conditions? So in Saudi Arabia, that number probably has gone up a lot recently because they have labor mandates.

**ESTHER DUFLO:** Yeah.

**STUDENT:** So I wonder how we should think about--

**ESTHER DUFLO:** Yeah, yeah. So all of this is super [INAUDIBLE]. Yeah. Yeah, absolutely. All of this should be on the [INAUDIBLE].

In fact, one of the things that they also showed, which I have not put it-- it's gotten better. So not just in Saudi Arabia, not just in MENA, but all over the world, they are basically documenting the reforms that have happened over the last several decades. And it has gotten better everywhere.

And you're right. The fact that it gets better might be a product, in some extents, of labor market tightness, like in Saudi Arabia. That's not something that, to my knowledge, they discuss in the paper. But it's something someone could do.

**STUDENT:** Do we expect labor market tightness to necessarily reduce gender wage gaps or we might expect maybe it helps the men more, but [INAUDIBLE]?

**ESTHER DUFLO:** I don't think there would be-- I don't think there is-- I think it's going to depend a bit on the model.

**STUDENT:** OK.

**ESTHER DUFLO:** In general, yes. You would expect-- I assume you would expect that. But it depends on whether there are also restrictions on which market women can-- it's related to this misallocation point that is made by the Hsieh and others paper. Suppose that women can only work in textiles.

Then labor market tightness might not do much to the gender gap because what you're going to see is to have more women employed in textile, and then all the men that are freed from textile moving to the other sectors and getting increased wages there. It's also related to something that I'm not going to talk about today, but that there is starting to be some work on, and I think you might do more with Ben, is monopsonies in the labor market. So both women and men might be subject to noncompetitive or imperfect competition in the labor market.

Because it's hard to find another job once you have one. And this imperfect competition might be stronger for women because they are more restricted in the type of job that they can access. For example, they cannot move because they cannot move their family.

They cannot travel far because they cannot go on buses. They have limitation on the sectors in which they work. So in this kind of a model version, you might expect that an increase in the labor market tightness in general is not going to lead to much of an improvement for the women's situation. So I think it's going to depend on the model and on the setting, obviously.

So let's take a sidestep to think about culture and social norms, and in particular, culture and social norms in the labor market. So Nathan Nunn at Harvard is someone who has done a lot to bring back the study of culture and social norms as a legitimate object of study in economics in saying that it still has a lot of impact on the way that people live their lives, and academic outcomes, et cetera. One study is-- the paper is from a few years ago, but it's one of the great examples of his work.

This is joined, by the way, with Alberto Alesina and Paula Giuliano. What they do is to test an old hypothesis of a Esther Boserup-- or Boserup, I guess-- which is in regions where the plow was dominant, males were more involved in working at the fields. And women were less valued.

So for example, if you look at India today and you look at North India versus South India, a cliché which is correct is that women are better treated in the South of India. And the South of India is a culture of rice, where traditionally, it's done by hand. In fact, today, it's still done by hand.

It's always been done by hand. It's labor intensive, but not in a particularly-- you don't need to be super strong. You need to be patient and just get it done.

Whereas the North of India traditionally was not a rice place. Also now they aren't doing rice there. But it's not a place which is suitable to rice originally.

So it was more of a plow culture and a wheat culture, where the labor supply-- where mostly men were involved, traditionally, in agriculture. And in fact, you still see this correlation today, where any dimension of women empowerment is worse in the North than in the South.

So Esther Boserup's hypothesis is that that's a general fact. So what they do here to test the idea is that they use an FAO database on crop suitability to build an index of where the plow is more likely to be used in ancient times. And then they correlate it with today's social norm.

And then they put a fixed effect and some such to try and test it. So I'll just show you one graph, which makes it clear. Traditional plow use and female labor force participation.

So this is not real use. This is a expected use based on the crop suitability for the crop mixed. And you can see that the labor force participation is higher in places that were less likely to use the plow. So that's a cross-country interpretation.

I find the paper quite convincing in terms of the very many tests they do, et cetera. It's cross-country so it's never going to be completely, completely watertight. On the other hand, it's the entire world. And so there is some benefits to that as well. So I strongly suggest you have a look at this paper.

Now one more problem with the social norms is that-- and one reason why they might be very persistent is that even when they change, you might not know that they change. In particular, if, as we've seen in our first paper we discussed today, the discussions are-- you're not very good at discussing things with people. So if you find it difficult to learn from others about how many blue urns there is in a jar, you might find it even more difficult to discuss whether it's OK for your wife to work, or it's not OK for your wife to work, which might lead to a misperception of social norm.

And hence, the second or Bursztyn trick, which is basically-- which he has performed in several papers-- which is trying to see if there is a bias in the perception of social norms, and if there is one, to debias people. So this particular experiment, which he presented in this very room, I remember-- so he was there presenting it from this space from where I talk-- was with 500 young men in Saudi Arabia. And they put them in a room, or by groups of about 30.

And then they asked them first their opinion on whether women should be allowed to work outside the home. And surprisingly in this younger group, there is actually a fair number of people who think they would be OK. 87% of men agree with the statement, in my opinion, women should be allowed to work outside the home.

But then they asked, consider these other men in this home who are with you. How many do you think will answer yes to that same question? And there 3/4 underestimate the numbers.

So most of them say a number that is lower than 80%, that's less than 80%. Most of them say a lower number-- sometimes, much lower number. So what they do in the experiment is that then for half of these men after eliciting their own norm, their own view, as well as their view of other people's view, they give them the right number about other people's view.

Obviously, the answer is not yes. It is OK, or it's not OK. But the answer is-- by the way, 87% of people we interviewed think that it's fine.

And then they are given the choice between a \$5 Amazon certificate and the opportunity to sign up their wife for a platform on the job, and then they give them follow-up calls to try to look at longer-term outcomes. And then after that, actually, they do even better than that. They do another experiment where they are doing the same thing, but in the context where people are-- women are given a job, a real job.

Many women are-- they have a large sample of people who are given a real job. And this is marketing, phone marketing. And then they are given the opportunity to do it either from home or from office. And the office job pays more.

And the question is, how many people take the office job? So that's the second experiment which I'm not going to show you today, but has exactly the same type of results and is a stronger, more heuristic thing. Here this is a little bit-- this is just signing up for a job. That's not so much.

But for what they find here, on average, the people who are debiased are more likely to sign their wife up for the job platform-- 32% versus 23%. And of course, where it becomes more interesting-- so then we can look-- sorry. We can look at whether they, in fact, applied for the job. And you find a difference.

You can look at whether they are interviewed for the job. And you still find a difference. And then you can look at whether they are employed or driving lessons. And there you don't find a difference in these lower outcomes.

So this is why-- actually, I was editing the paper. And I got this-- I was editing the paper at the AER, and this is what they sent. And I was like, I don't know. At the end of the day, I don't know if this is-- the proof is the pudding is whether they are employed.

And maybe there is an effect, but maybe not. The p value of 0.24. I don't know what to think. At the end of the day, does it matter?

Or does it not matter? I need a real outcome, which is why they went and did this second experiment, where basically, they were thinking the problem with this one is that eventually, it's not very powered. Because there are so many steps between signing up for a job platform and actually getting the job that they were never going to be powered.

So my objection here as an editor-- this is a point about how you want to think about designing your research project as well-- my objection here as an editor was that this particular project was not powered to find employment effect. Because given the number of things that have been given the few people who are employed-- about 7%-- it would have taken a much larger sample to be able to detect any effect that is not ginormous.

So I was like, it's fine to find 0. I have no issue with 0. But your paper is not powered to find an impact on the outcome that you want to find an impact on. It's only powered to find an impact on these intermediate outcomes where we have it.

So it's promising. But it's not enough for the AER. So at this point, they could have said fine. We're just going to go one level down and publish without intermediate outcome.

Or they could have done what they did, which was the right move, in my opinion, which is to design a better power outcome. And to find a better power outcome, basically, that's why they did the second experiment by setting themselves in a context where already, people were working. And the decision was from home versus outside the home for more money.

So that's super powerful. And if they had found-- in fact, in my return letter, I said, compose me your design before you run it. I'm going to tell you whether I'm going to sign up whether that's satisfactory, whatever you find. And so when he proposed the second design, I was like, that's great.

Because if you find nothing, this is powerful. This is going to be a real 0. If you find an effect, then there's an effect. So go ahead and run it.

And basically, I told him that I would publish no matter what, in a sense, no matter what he found in this second experiment because that was well powered for the outcome we cared about. But we can do a little better than that. Already more interesting than that is you have one more prediction on the sign-up, which is the sign-up should come from the fact-- who were originally biased about, underestimating the fraction of people.

So some people were underestimating the fraction of people-- a lot of them. And some people were over-- but there are still some people who are estimating the fraction of people who found working for a job acceptable. And so the finding is that these guys, if anything, the control is slightly larger.

So the opinion didn't really change. Or if anything, it changed in the direction you expect. And so the effect on sign-up comes from the people who were initially underestimating the social norm.

So any experiments-- if you want to run this type of experiment where you're debiasing, it's really important to have the baseline value so that you can-- because the prediction is really not just about the effect of the treatment but how the effect of the treatment varies as a function of whether you're moving people up or down with your information. So that's important to keep in mind because this type of idea of I'm going to debias on something or the other-- it could be the social norm, the weather in California, or people's own ability in math-- I don't know.

All of these things, you expect different results depending on what you're given. So you need to estimate the baseline. So that's the idea.

So that's a social norm about women working outside the house. There are other social norms standing in the way of women success. So Marianne Bertrand, Jennifer Pan and Emir Kamenica have this paper looking at the norm that women must earn less than their husband.

And what they show is that there is a discontinuity in the fraction of people that you're finding precisely at the place where women and men would be earning the same in the household. So basically, you have a big hole of women who earn just above their husband. And [INAUDIBLE] is trying to do a second your paper on this topic, trying to see whether this can be replicated in experimental work.

So that's one, the social norm of women cannot earn more than their husband, which you find in the US. There is good reason to think you're finding it in other places that are even more conservative. But we'll find out maybe, soon.

And then there is Claudia Goldin, who has, of course, made a career looking at women in the labor market and is now saying that, for example, in a recent work, that the norm of the rigid full-time, full week, many hours may be the last thing that's holding women now in the US labor market. So for example, when you look at lawyers-- work very, very long hours. And women eventually don't go into this profession, or they quit them early, or they choose mommy tracks situation.

So here there are two social norms that in some sense could fight, could conspire to keep women, to hold women back in this situation. The one is that you're a good employee if you work all the time, if you work super, super long hours. And two is that if there is one person in the household that has to comply with that, it has to be the husband because the wife has to take care of the children.

So that idea that women are multitasking is one I'm going to come back to. Because I think for developing countries, that's a pretty essential one, that sphere of women being in charge of children pretty much exclusively, as the residual claimant, is actually the one thing that you're refinding interacting with other parts of the labor market to hold women back. So we'll go back to that towards the end of this lecture.

So one question then is that, OK, you have these social norms. They are very persistent. People might be, to some extent, misguided about them.

But an interesting question is whether these norms can be changed by teaching. That's not a very economics-y way of thinking. We tend to follow the Baker [? Stigler ?] or [INAUDIBLE] known as [INAUDIBLE] idea is like, whatever preferences are, what they have, what they are. And indeed, you can tell people what the preferences of others are and inform them about that.

But you can't really affect people's own view so easily. But so that's the traditional economics way of thinking. I already reminded you of the [INAUDIBLE] theorem that would think that laws doesn't matter because people bargain their way out of them anyways. And then that's the second one, second trope for the day is preferences cannot be changed.

But we are learning that that's not the case. Because on many things, people's own sense of what their preferences are is super vague anyways. So they have these interesting experiments about trying to make people value things like mugs, or bottles of wines, and their judgment being influenced by the last digit of their Social Security number, if they just had to write it down.

So people are first asked to write down their Social-- MBA students are first asked to write down the last two digits of their Social Security number. And then they are given a bottle of wine. And they are asked to bid for the bottle of wine. And people who have a higher Social Security number pay more for the bottle than people who don't.

So that's an example of saying people have-- on many things, we just don't know. But we have to express an opinion, we express an opinion. And that might be true for things deeper than bottles of wine, but for things like values, and things like that.

And if that's the case, then that means that perhaps norms are not a fatality. Perhaps it's possible to change social norms. And in fact, there is a literature on TV showing that TV entertainment can change people's social norms, so a great paper by Ileana La Ferrara on soap opera in Brazil to show that-- so in Brazil during the-- before the democracy came back, a lot of the film, cinema people moved to TV. Because this was less dangerous politically than doing films.

And they were doing this soap opera. And the model of the soap opera was usually a woman with no children, or very few children living this modern life, and attractive, in an attractive setup. And what she does is that she looks at how the soap opera diffused via cable TV all over Brazil with the introduction of cable and does a definitive to show that as places get access to the soap opera, the number of kids declines in those places. And one interesting supporting piece of evidence, that might, in fact, be related to that is that the name given to the kids are increasingly the names of the people in the soap opera.

[LAUGHTER]

So that suggests that indeed, people are paying attention. And something as important as fertility is affected by TV. Abhijit and Ileana La Ferrara, in another recent paper, are doing a randomized experiment of an MTV program in Nigeria looking at basically risky sexual behavior, respectful attitude of boys vis-a-vis a girlfriend, and these type of things, which also shows an impact of TV. So TV is one.

Another thing that seems to be changed by exposure is, I have a paper with Lori Beaman, Rohini Pande and Raghavendra Chattopadhyay by looking at women leaders in India through a series of papers. One of the papers is about what people think of-- whether it's appropriate for a woman to be leader. And what we find is that exposure to women-- it is imposed on you by quotas-- makes people more willing to accept the idea that a woman can be a good leader, and in fact, to vote for women, which again shows the fact that these ideas can change.

And you might imagine that they might change-- it might be easier to change the social norm when children are younger. And therefore, education would be a good place. Schools would be a good time to do it.

So Sima Jayachandran and Tarun Jain have done this paper in collaboration with an NGO in North India called Breakthrough to try to affect adolescent view of women and girls. It's a pretty intense program. It's a 45-minute classroom discussion every three weeks for two years. And they did RCT in 314 school in Haryana, which might be the place in the world where women are the least considered, maybe, with competition with UP-- extremely backward gender norms, huge discrepancy in the number of boys who are born versus girls.

In any way you like, Haryana is a pretty horrible place for women. So if you find an effect there, that's encouraging. And what they find overall is some effect-- a 0.25 standard deviation improvement on self-reported gender norms-- so whether it's OK for women to work, whether boys need to leave enough space for women, whether if there is not enough job, it's men who should have the first job, and so on and so forth.

And some effect on behavior, even among, in particular, among boys-- so this is the summary looking at their index. You should look at their paper to look at what goes into each of the index. So the general attitude I summarize-- the aspiration, or what you want to do with your career.

The behaviors-- what to do in terms of chores, and stuff like that, both for girls and for boys. And so they find this effect. They find that it persists over several years after the intervention. So they are now trying to scale it up in the rest of the state. So that's very encouraging in the sense that it suggests that it might be possible to teach directly teach social norms. Yeah?

**STUDENT:** Through a study like this, how important is it to have behavior measures? Could someone, say, let's demand effects? Or what do you think?

**ESTHER DUFLO:** Yeah, yeah. Someone could say that. And someone has said that.

This is also a paper I edited at the AER and I've decided to publish because I think the result is so important. But it's clearly come up in all of the reports saying, well, you just told the kids for two years that they have to be nice to their women. So they are parroting that back.

So there is an interesting twist in the paper, where they develop a test, or they use a test for testing for social desirability, trying to catch social desirability bias that they implement. It also helps that they are looking for long-term outcomes. So a long time after the intervention itself was stopped-- so if people still remember one year after the fact that you want them to say that one has to be nice to women, maybe there is no difference anymore between people wanting to say that and people actually believing it.

And then of course, there is a self-reported behavior. That's, again, self-reported. So it could be demand effect. It's whether you help at home and that type of things would be lying, which they might also do just to be nice.

But that remains-- that finding a hard measure of impact on behavior would be the cool thing to do there. Of course, these are adolescents. So you could try and trace them until they get married, like in our paper in Ghana, where we traced people forever.

But it's a pretty big commitment. So now given the disagreement, thinking now the social norm as given for women, to get women to participate in the labor force, you could either change husbands' opinion or change the wives' ability to advocate for themselves if there is this-- as long as people still have these different shared opinion. So a paper by Maddie McKelway looks at that.



That actually was a job market paper-- so in the experiments she conducted on her own on a shoestring budget in UP. She hails from Virginia, so UP was quite a different setup. So it's well worth reading.

First of all, it's a very good paper, second of all just to have a sense of what you can do as a graduate student if that's what you decide to do. She teamed up with a large carpet manufacturer in India, the largest carpet manufacturer in India. And they wanted to recruit women in part, and probably mostly because of tightness in the labor market. They just can't hire enough weavers anymore.

And weaving is traditionally actually a male occupation in UP. It's funny because in the 192 class, I think it's Arthur who mentioned this as an archetypal female occupation. Well, it turns out, in UP, it's a male occupation.

And they are trying to get women in it because there are no reasons why women couldn't do weaving. And so in fact, it's with this same partner that Matt and Maddie did their first experiment that I mentioned before, where they gave the voucher for the training. And so it's a second experiment with the same partner.

And there they did two things. She did two things. She did a psychosocial intervention called generalized self-efficacy training over several weeks. That's one intervention.

And the other is a promotion of the job to the husband and the in-laws, which is a six-minute video that was meant to address some of the concern that husbands might have had. So they did some focus group to figure out what people were worried about. And then they did this video.

And then they showed the video on the iPad when going from house to house. So the video had explained that it was women-only workplaces and what people would be doing there and the money they could make, and all of that. And then of course, so you have two treatments and the interaction because you might expect that the self-efficacy intervention would have different impact when the husband might be predisposed to be interested in the job versus when they are not.

So the general self-efficacy training-- so this is an old concept by Bandura from '77, which is actually very, very classic in psychology. But it's one of the concepts that has not yet made its way into economics and behavioral economics in a large way. Maybe after Maddie's paper, it will.

And it's the idea that you can affect the outcomes, you can affect your outcomes by your agency. You have agency on the outcomes that are around you. So they're basically going from case studies and discussing two situations or problems that women might have, and then how she can address it.

And there is a standard scale for general self-efficacy. So generalizes as opposed to in any particular area. You could have self-efficacy for child rearing, and no self-efficacy for labor market. General self-efficacy is across all areas.

So there is a scale for it. So she measured at the end and then at the beginning. And then the training took place. Importantly, in the training, she was sure to pick-- so she worked with an organization that was with psychologists who were specialists in that.

And she changed a little bit the curriculum to make sure that there was no examples that had anything to do with labor markets because she didn't want to directly lead in this direction. So in terms of the-- so the GSE questions are of the form, can you affect this outcome? Can you affect that outcome?

Generally, you would say that if a child is sick, you are able to do what it takes to help them, et cetera. So she looks at the impact of the treatment and the promotion. You can look at the impact of the treatment, the promotion or the two interacted.

Given what we discussed about interaction, let's focus on the interaction specification immediately. And you can see that-- you can look at the impact of the intervention after several weeks. And starting towards at the end of the program, the GSE leads to-- the two GSE specification leads to more GSE.

And the promotion itself doesn't lead to more GSE. It's not, perhaps, powered very much. So it's difficult to show that these things are significantly different, which is something she has been struggling with. The sample size is not enormous.

But you do find that over time, it seems relatively stable, that the GSE treatment seems to increase GSE. But you can see why she preferred to look at an interactive specification because then it looks like it's pulling these two, so you get some extra precision. And you're finding, then, across the board that being treated with GSE increases your GSE.

Then when we look at participation in the farm program-- so the main outcome was, is there participation in the farm program of working outside of the farm? You find that the promotion and the robust increase in signing up for the farm program and for doing any work, including this one, at least in the first five months-- though it was not durable over time-- the GSE had an impact that's not significant for signing up on the farm's program. It's significant for working on farms in general.

Remember that the GSE was not about-- the GSE intervention had nothing to do with the program. So it was not particularly promoting the program. It was just giving people, women agency to do whatever they want in their life.

It was not even about work. So that's probably a better outcome. So GSE alone increased the female labor force participation. So this is something that women tend to want to do.

And in fact, you see that they want to do about as much as the promotion treatment directly to the husband. But when you combine the two, instead of having a larger effect, which is what I would have expected, you find no significant effect or a smaller effect. And in fact, at six weeks, the effect is even significantly different from having just a promo. If you add the GSE to the promotion, you have the effect crashing.

So that's a bit surprising and maybe a bit reminiscent of this discussion treatment that led to, actually, less take-up than when either the wife alone or the husband alone was given the ticket, and again suggests that there is something about basically women-- one possible interpretation-- I'm not saying it's the right one, but one possible interpretation of this result is that women want to work. With the GSE treatment, they are given the power to advocate for what they want.

And then they do it. Or a husband that's in the GSE treatment alone, or husbands find out that actually, she can make money. And it's not a bad thing. Let's give this a try, and push them to work.

But when she has self-efficacy to argue for herself, she's like, I'm not going to take this new job that you just decided is interesting or something like that. She's sufficiently-- she's less-- she's resistant to this new idea that has been imposed to her. That's just an interpretation, which is hard to prove, but again shows how the things are complicated because again, my [? prior ?] would have been that combining the two would have a larger effect than doing either individually.

So one of the reason why men might be reluctant to see wives working is because it might increase bargaining power, their bargaining power. And in a limited commitment model, you don't want to do that. You want to keep your-- so men might want to keep women home in order to make sure that they remain-- they don't become snooty, and the man remains the boss of the house.

So there is an experiment, or a project, ambitious project by Rohini Pande, Natalia Rigol, Simon Schaner, Charity T. Moore and Erica Field, which is in Madhya Pradesh, where they didn't increase access to work. But they increased the control of the woman to the money coming from work that they were doing anyways. So this is in the context of the NREGA program.

The NREGA is a workfare program in India whereby women and men, everyone, has access to a certain number of labor every year. So this is quite well paid because it sets the official minimum wage. And in some states, it's actually a big part of the household sustenance.

So what they look at here is a program where people, women-- the government gives access to bank accounts in randomly selected GPs. And in one treatment, the NREGA payment of the woman was directly sent to the bank account of the woman. So it doesn't change the access to job, which in a sense, they already have. But it makes sure that they control their own job.

And what they find in terms of impacts is that it increases a labor supply. So women who have now access to-- who can now retain their earnings are more likely to work in the short run, although not in the long run. And so this is just when this is happening because at some point, it stopped.

So this is while it's happening. They have more access to the program. This is true both in the NREGA program and in other forms of work, which is not directly deposited to this account. So their interpretation is that women found out about this-- that now they would be able to retain their earnings, they started working.

That increases their bargaining power and gave them the possibility to work even more. And so that's why you have an increase in labor supply in NREGA and in a non-NREGA program as well. And they show some evidence for that, which is that if you look at other dimensions of women empowerment-- for example, mobility, et cetera-- among the women who are the most constrained, among the women who are the least empowered at the beginning, you find some evidence that other measures of empowerment, like how much they can purchase, they have a say on decision-making, they can move to visit their parents or stuff like that-- and this is an aggregate of all of the measures that they have-- is affected by the program.

So this is the idea that indeed, the bargaining power might be an impact of how much you're working. So here you keep more of your earnings. And therefore, you work more. The two combined gives you more bargaining power.

You work even more. And that also increases your decision power in other spheres of the family. So that's the optimistic take.

This is the how the norms-- male and female reports of various things that are affected, and again, showing some impact on those social norms. So that's the optimistic take. The less optimistic take is from a third paper by Maddie, which looks at the long-run effect of the access to this employment opportunity due to the exogenously-- due to the promotion sample.

So now forgetting the general self-efficacy, which itself would have changed bargaining power-- and in fact, she does find some impact on savings and some impact on own decisions. The promotion gave access to women to this outside employment opportunity. So a natural question is whether there is an impact of that over time of this new work that they have on their on their decision-making.

So she follows decision-making in households where husbands were given the promotion compared to the control group, forgetting the GSE. And what she finds is that in the short run, women spend more time working, but just as much time on doing chores. So that they, in fact, have less leisure.

At four months, they think that they have more decision-making power, but their family does not. And then quickly, they just drop out of the job because it's incompatible with their other responsibilities. So that shows that this expected effect, this hoped-for effect of working on increasing your bargaining power-- it doesn't always happen. It didn't happen in our people.

So interestingly, they dropped out because that's incompatible with their other responsibilities. That linked to what we were seeing at the very beginning of the lecture, which is women often report that they would like to work, but they cannot. Because their husbands don't want, or they cannot because it's incompatible with their childcare responsibilities.

And they would like a part-time job. So that's related to this Claudia Goldin idea that the problem is mainly that the jobs don't have to all be structured full-time. So perhaps, the strongest norm is that women must take care-- the social norms that hold women back-- you find everywhere, and helps tying to a lot of the things that it is women who must take care of children.

We saw it in Cote d'Ivoire, where it's women who-- when women income goes up, there is more food on the table, which seems a bit absurd from the efficiency of the household point of view, but is related to this idea that it's women who have to feed kids. And this might explain another stylised fact, which was first established by the De Mel, McKenzie, and Woodruff. They show that when you give the same-sized grant randomly assigned to female business, there's no impact on the profitability of female business.

The same grant to male business-- and there are large effects. So basically, it seems that the profitability, the marginal impact on money on female businesses is zero when it's very high on male businesses. So it's this fact of maybe female businesses are less profitable than male businesses.

So why is that? And I'll finish on that. I am mindful of the time.

Another paper by Rohini Pande, Natalia Rigol, and Erica Field-- it's this trio plus another co-author-- argued by revisiting the same data plus other data that they bring to the table that it's not the female business that isn't productive. It's that the money is never invested in the female business, that in fact, if you looked at single women and you give them fellowship of money, grant money, the effect would be the same.

In fact, they don't really have very many single women to look at. But what happens, they show, is that the family income increases just as much if you give the money to the female business versus money to the male business. It's just that when you give money to the female business, it's invested in the male business.

So it looks like the female business is not productive. But it's because the money was never invested there in the first place. Solène Delecourt have a paper where they run an experiment with vegetable vendors, also in India. And they show that if you give them the same input-- so they replicate that fact that women-owned vegetable stalls appear to be less productive than male-owned vegetable stalls.

But then what they do is this fun experiment where they give traders-- they give them vegetables to sell. And they observe. They sell for one day or for several days. And then they calculate how much money they are making.

And they show that starting with the same endowment, women make the same amount of money as men. So it's not that women are less good traders, or it's not that customers discriminate against women. It's just that they probably start with a much lower endowment.

And that's very consistent with this idea of, in the Rigol Pande Field, paper that oh, the money was not productive because it was never invested in the first place. So then the question is, why is it that-- the lower investment in the female business is not, in turn, endogenously relating to the fact that the female business isn't productive. Because you could say, of course, you don't invest in women.

Female businesses are unproductive. That's why you don't invest. But the Delecourt paper suggests that's not that because if we invest the same, we get the same.

So maybe another reason why people are not investing in the female businesses is that the female business is never made to make much money in the first place. It's meant to be something that women can do while minding the kids near them. And so therefore, you can't really grow it because then you won't be able to take care of the kids.

And the same constraint is precisely what makes it difficult for them to get or keep jobs, and also the reason why promotions are constrained. So there is another paper by Woodruff and others in Bangladesh showing that even in factories, the perfectly good tailors are not promoted at the same rate as men, even though if they are promoted, they are just as productive. And there are many reasons for that.

But one of the reasons could be that there is an anticipation that they will not stay. There is, in fact, much larger turnover for women than for men. And [INAUDIBLE] has a paper on that also for women enterprises. And that may all be related to this child care norm.

So let me stop there, which I think is a good place to stop. There is a very active agenda on gender, labor market. Just scratched the surface. But it's a good place to do it because you have everything a little bit coming there-- the norms, the family situation, et cetera.