Welcome. You are listening to a UC Davis Center for Poverty Research Conference podcast. I'm the center's Deputy Director, Marianne Page. In January 2014, the center hosted the War on Poverty Conference. The conference featured top poverty experts from across the country to discuss the U.S. safety net on the 50 year anniversary of the War on Poverty.

In this presentation, Greg Duncan discusses Douglas Miller's paper, Long Run Puzzles in Head Start Research. Duncan is an economist and Distinguished Professor in the Department of Education at the University of California, Irvine. He currently serves as chair of a National Research Councilâ€™s Institute on Medicine Committee on child research.

>> I wanna start with. A look, additional legacies. And now the pressure's on to show cute kids somehow. So here you go. That's, that, that's my attempt.
>> That is Mary Corcoran and me. You don't like that cute kid, how about that cute kid?
>> Okay, moving back here.

There was a research legacy, right? To the law on poverty. And one of the products was the PSID, the PSID really came out of the war on poverty. The Office of Economic Opportunity ran the Survey of Economic Opportunity in 1966. And then Jim Smith, not the, the ran Jim Smith, the, one of the other 2.1 million Jim Smiths in the country.

>> Came to Jim Morgan at the survey research center and said look, we have to understand something about poverty dynamics, funny you. Take a subset of the low income portion of the survey of economic opportunity and follow them for five years. Right? And Jim said that's a dumb idea.

>> You know, he was always writing these proposals, responding to calls for proposals and telling the people who issued the calls why they were looking after the wrong question, right? And here's the question you really should. So but, in this case, he said it's crazy just to start with a sample of low income families.

Let's start with a representative sample, over sample of income families so that we can get both directions of poverty flows and so forth. So it was set up as a a five year study. In the fifth year. That was the year that Nixon put the OEO out of business unceremoniously almost overnight.

And and Larry Orr claims, you never know about these these histories that when the file for the PSID was transferred from OEO into ASPY it was a five year study, right, it was the fifth year. Somebody wrote, this is a ten year study.
>> On the file. So there was support for it that they assumed it was designed to be a to year study, and after ten years then NSF started funding it.

So you know, the rest is history, as they say. So let me quickly go past that and.
>> Talk about first this really difficult puzzle, you know. What is it about what happens in between the end of the treatment and and the long run? That connects those two things, right?

And as Doug said, there's some very puzzling evidence about this. And my conclusion is darned if I know.
>> It's a really, really tough question. And if you try to make sense out of it from the literature this a an article of Catherine and Magnuson and I did last year, doing a summary of early childhood education programs, and we basically said this is a very important challenge and we don't have the answer to it.

You know, Heckman has an attempt to do this with the Perry study. It's really pretty inconclusive that you know. It seemed the, the one substantial finding was that anti-social behavior impacts seem to account for a substantial amount of the long run crime outcomes but none of the other stuff really behaved as you would of hoped it would and there was no kind of overall explanation.

Ron Haskins and many of you know was a staff person on the project in North Carolina. There are many stories that

people tell about his behavior back then.
>> But he estimated preverse impacts of on behavior. And yet has these positive outcomes.
>> And then as Doug said David Deming has a nice extension of the orignal Curry and Duncan study, of analyst Y using fixed effects and showing long run outcomes.

One way of summarizing the longer outcomes he finds is this kind of aggregated impact. He puts together a lot of achievement related indicators and comes up with a sibling based estimate of a 0.23 standard deviations, right, for an adult outcome. He's got some intermediate evidence. These are the PIAT test scores.

Again, these are sibling estimates, so they do persist through at least age seven through ten, and then they become insignificant. Right, that was the fadeout that Doug talked about. Males only they're more persistent. And actually this idea that these programs only work for females. If you look at a broader set of early child education programs, that result just doesn't hold up, right?

And it doesn't seem to hold up very well here either. There were, you know, some grade retention impacts, which were bigger for males. Some learning disability impacts, which were insignificant for males and there were no behavior impacts in the paper I thought I had seen a draft of the paper where he had some behavior problems, so I emailed him yesterday.

And he emailed back the results for the behavior problem index, ones some what wild although if you squinted you could see something right?
>> So it's a very spotty record of intermediate impacts. And you know I think a lot of people are thinking that it's it can't be cognitive because you did a test, the fade out in a number of these studies but sometimes I think it's important to distinguish between IQ measures and achievement measures, right.

And I think concrete achievement measures tend to show somewhat less fade out. And they're the ones I think that are the intermediate most likely to succeed. If you look into the developmental literature there's one study that that I did with a whole bunch of other people, where we took six data sets.

The two British cohort studies, LSY, a bunch of others, all of which this is just a correlational study. But all of them had school entry measures of reading achievement, math achievement, attention problems. Anti-social behavior, where you're expecting a negative impact. Mental health problems where you expecting negative impact.

This is the kind of things that early education program might target. And it's useful just to see what the associations are controlling for family background. Controlling in five of the six studies for IQ. Controlling for temperament, right, so there are a lot of controls. And I would have expected, and you know, was on the neighborhoods report committee.

And there, the message was that the social, emotional behaviors were every bit as important for school readiness. So I would've expected a lot of action all across this table, but if you look at all the different achievement measures, sometimes test scores, sometimes teacher report. On average, maybe in third grade or fourth grade, but ranging from first grade to eighth grade, if you just do standardized coefficient standardizing the, the independent variable standardizing dependant variables.

Wih all the action really is in the achievement scores early on. So, kindergarten entry reading is most predictive of later reading and marginally predictive math scores. Math early on is just as predictive. It's very, it's surprising of reading as early reading is. And of course, very predictive of later math.

So you know, I could talk for a long time about this. If you can look at growth over the course of kindergarten, kids who grow the most at, most in math are more successful later on. If you look in early grades at things like highschool drop out and college attendance.

Math again emerges as the most important. But here you get some action with the, this attention behavioral problems. The hyper activity sub scaled. Of the behavior problem index. But really not, no action for anti social behavior or these mental health problems. And I think what's going on here you know if you look at a life cycle pattern of anti social

behavior it peaks at two and a half.

>> Right, I mean literally. And the big project for a two and a half year old is by the time they get to school to develop the kind of self regulation. You know to be able to control these reactions when you've got an emotionally laden kinda situation. And sometimes they do and sometimes they don't and a lot of the kids who show up with some anti social behavior problems in kindergarten aren't, most of them aren't gonna be lifetime anti-social, if you don't do something about it.

They just grow out of it within a year or two. Teacher can handle it. So it's very hard to identify in kindergarten who will be the life course system anti-social behavioral kid.
>> They are, you know, the anti-so, if you can identify them, that's very important. Cuz they have terribly trajectories, right?

But they're only about 15%, 20% of the initially anti-social kids. So in terms of, you know, what kinds of things do you try and develop in, in early childhood eduction program. I'm gonna go with achievement skills first and foremost. Because the gap as Sean's evidence shows between high and low income kids in reading and math 1.2 standard deviations.

It's absolutely enormous, it's grown, but that is the gap in kindergarten, that's the gap in fifth grade, it pretty much persists over the course of school. So, my money is more on the initial achievement measures. Maybe this the attention, executive function kind of things to a lesser extent.

But I'll, I'll get more into that there. So let me switch gears here and ask how should we think about Head Start? You know, it's important to nail down the long run impacts. But to what extent, even if you could nail down the long run impacts, is that relevant today?

Doug talked about this, right? Is it a so 20th century program? And I'm gonna argue yes, all right? I don't love Head Start, now. I love other things that I will talk about.
>> One of the projects I've been involved with is to try to identify all the early childhood education evaluations that were published between 1962 and 2007 and code up what their impacts were along with a lot of other characteristics whether random assignments.

How big were they, and so forth. And if you take Perry and Abecedarian and array them according to the, the date that they began, basically, right? You get this really big impact from Perry, big impact from Abecedarian. These are the cognitive impacts where we take all the available, either IQ or achievement measures around the end of treatment and just average them.

The size of the bubble is proportional to the size of the cynical, all right? So you want some idea of of how much weight you should accord these different studies. So those are the success stories, right. They're the rest. The Head Start studies really were a lot of experimental, quasi-experimental head start studies in the 1960's.

And then of course these are the the Curry and Thomas and the National Head Start study. We, we, we ex, we limited the the diameter to the equal 1000 just so that the, that some of these really big studies wouldn't dominate, but you get an idea of what the big studies and small studies are.

You know, you, not all these are random assignment, but the average effect size for random assignment is pretty similar to non-random assignment, so it doesn't seem to be a accounting for very much. But you get tend to get, considerably bigger impacts early on. Even among the, the Head Start studies.

Right? A little bit higher average impact early on. And if you do the, the weighted regression line, right, the big circles are carrying a lot of the weight here. Instead of thinking of these ECE programs as having impacts of one standard deviation. You should be thinking of the average as more like 0.3 standard deviations, right?

Not so big. And what's really worrying is it's declining over time, right? Why aren't we getting smarter about the design of early child education programs. But I think a lot of what's going on, is a kind of factual. Doug mentioned this a little bit. But if you look at a time series of what fraction of three and four year-olds were enrolled in some kind of center-based care with some kind of curriculum you end up with kids from all the points of the income distribution increasing.

But the counter-factual Back for Pairing and Abecedarian and the early Head Start, or the early Head Start studies had kids, less than 20% of them, in in center-based care. They were at home for the most part. That's grown. And now it's up to over 40%, right? We know from National Head Start study that 40% or so of the kids in the control group were in center based care.

All right, buried somewhat by three and four year olds. But the counter factual the, the, the bar has risen, a lot. On the basis of of center based care. The bar's risen a lot in terms of maternal education, right? If you think of these kids as being at home with their mom this is PSID data, but kids born in the late 50s in the bottom quintile of the income distribution, the average level of education of the moms was a little over eight years, right.

That grew a lot and actually the bottom came closer, caught up a bit with the top quintile. But the, the kind of environment that the kids are in in terms of the home environment is measured by the maternal levels of education is presumably much better now than it used it.

Right? So the bar for, and then final things is family size. Right? Where big family sizes back in the 60s. So, the kids in Abecedarian and in Head Start and the studies that Europe got done and are talking about doing, are counter factual right? The kids learn in center based care the moms had low levels of education and they had a lot of siblings competing for the time and attention of their mom.

So. It, it, it was pretty easy to do a good job against that and much more difficult now. So, why am soured on Head Start? If you think about the latest, best evidence from the National Impact Study you know the impacts weren't very big. They were 0.2, 0.3 standard deviation.

Relative to that, 1.2 standard deviation gap between high and low income kids. That's not gonna be much of a dent. That's a pretty extreme comparison, but between them, top, bottom and the middle, it's about half that big. So how can we do better? And I would argue that the head packing plants are pretty discouraging.

Pre-K, right, is a totally different funding stream that comes from states for the most part. And it is set up in a different kind of model. It tends to have higher quality teachers, it tends to use more proven curricula, it tends to pay lot of attention to whether that curricula's well implemented.

There are certainly low quality implementations of pre-K and their effects aren't very big. But there are very high quality implementations of pre-K. And one of the places I've been doing some work is in Boston, which has set up a city-wide pre-K system. They run it for about almost ten years now.

They have designed a curriculum that's based on, you know, IES proven math curriculum, IES proven literacy curriculum. They've tried to integrate behavioral development as part of it. They do professional development. They spend a lot of money. I mean, it's $12,000 per kid. But the teachers get a lot of professional developement.

There's a coaching where the coaches are going in and trying to make sure that this curriculum gets implemented the right kind of way. And Chris Weiland and you know, Hilary Escola had done a regressionist continuity study of of Boston. And these are the kind of impacts that they estimate.

This, the receptive vocabulary Wilcock Johnson letter word, which is kind of early reading skills. The math section of the Woodcock Johnson, and then here's another math test. So these are, pretty respectable effect sizes. All right? It's an expensive program. It's implemented in a a very high quality way.

Tulsa is another example where it's, it was a high quality implementation and the impacts are not quite as big as this,

but they're, but they're almost as big as this. What Chris and Hilary did in addition to the conventional kind of academic measures was to look at various components of executive functioning.

Things like working memory. Took couple of measures of their pencil tap. If you've got a, four year old. I was telling my son about this. This, this is impulse control, right? You, you tell that child, I'm gonna tap my pencil twice. You tap your pencil once. If I tap once, you tap twice.

Right? So they have to inhibit the impulse to do exactly what you did, and do the opposite thing. It's kind of like Simon says, right? And right around age 4 to 5 that degree of self regulation, cognitive self regulation kind of kicks in but its better to do it early and its better to do it in the context of school, right?

So this is a measure looking at at impacts on those the affect sizes aren't as large. But, you know, I think people who advocate for for a curriculum exclusively focused on executive functioning and not on achievement, if you can get both at the same time in the context of doing a good achievement kind of intervention and get the executive functioning skills boost at the same time then I would always opt for that.

Right? I think Headstart is set up in a way, where this is never gonna happen. Right? If you look at just they have done a good job of trying to bring up the very low quality programs. They have a new quality improvement system that I think is gonna move the bar up more.

But but structurally it's just not set up in the kind of way where it's going to be easy to attain at scale, the really high level of quality that we need, and that are apparent and at least some of the pre-K programs. So that's kinda my my bottom line.

So we need as long as we can for these early impacts. But and this is overstating, keep in mind, they're inability to inform current policy. Thanks.
>> I'm Ann Stevens the director of The Center for Poverty Research at UC Davis and I want to thank you for listening.

The center is one of three federally designated poverty research centers in the United States. Our mission is to facilitate non-partisan academic research on domestic poverty, to disseminate this research, and to train the next generation of poverty scholars. Core funding comes from the U.S. Department of Health and Human Services.

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