Probable Causation, Episode 68: Andrew Barr

Jennifer [00:00:08] Hello and welcome to Probable Causation, a show about law, economics and crime. I'm your host, Jennifer Doleac of Texas A&M University, where I'm an economics professor and the director of the Justice Tech Lab. My guest this week is Andrew Barr. Andrew is my colleague. He's an associate professor of economics at Texas A&M University as well. Andrew, welcome to the show.

Andrew [00:00:28] Thanks so much for having me.

Jennifer [00:00:29] Today, we're going to talk about your research on how access to food stamps in early childhood affects criminal behavior when those kids grow up. But before we get into that, could you tell us about your research, expertize and how you became interested in this topic?

Andrew [00:00:43] Sure. I started off working mainly on topics in higher education and thinking about choices of non-traditional students thinking about kind of what influenced their choices to go to school, how those investments paid off, but more generally, I think I was just interested in kind of how we can provide opportunities for people to succeed kind of the most efficient way to do that. And in recent years, I think the evidence is kind of pointed to the period of early childhood as a period where we can make really efficient investments, that there are really high returns to resources targeted at this period in terms of early childhood education, like transfers to those families or mentoring programs and things like that kind of following my general interests and of trying to do the most to help people, I think I was drawn to that area. So I actually have multiple projects working in that area now thinking about kind of this early childhood period and kind of interventions or changes in environments that influence people. I think actually one of my coauthors talked about one of the projects on an earlier podcast, Chloe, and I'm thinking about the intergenerational effects of Head Start program.

Andrew [00:01:46] With respect to this project I think I again kind of came to it from this effective policy angle and actually thinking about class. I teach public economics both at undergraduate and graduate level. We talk a lot in that class about the motivations for government intervention, both from the perspective of market failures, but also thinking about kind of whether there are equity motivations for government intervention. And a lot of times these social welfare programs, like the program that we're studying this paper, are motivated from an equity perspective and the models kind of focus on that. They focus on this equity efficiency tradeoffs and we thought that was really interesting, but we thought that there kind of might be an efficiency boost that could come to this kind of market failure perspective and thinking about externalities of these types of programs. And that's how we got kind of interested in thinking about crime because we, you know, crime is kind of a natural externality example. And, you know, if there are those kinds of important crime effects of these programs, you might be able to motivate them from the perspective of kind of improving efficiency without having to kind of sacrifice on that front to get, you know, increases in equity.

Jennifer [00:02:56] So your paper is titled "Fighting Crime in the Cradle The Effects of Early Childhood Access to Nutritional Assistance." It's coauthored with Alex Smith and is forthcoming at the Journal of Human Resources. Congratulations on that. So in this paper, you focus on the rollout of the food stamp program, a component of the war on poverty. So tell us about that program and the context in which it was created.

Andrew [00:03:19] Yes. So I should start off by saying, and I'm not a historian. So there are many people who have studied this program at great length and know an enormous amount about it.

Andrew [00:03:27] I have a very cursory understanding of the development of the program, but I've learned a lot about it through the process of this project and it's really been interesting. The food stamp program was kind of the precursor to what today is known as the Supplemental Nutrition Assistance Program, or SNAP, and the initial program actually began in 1939 kind of following the period of the Great Depression, where there was a lot of surplus agricultural commodities, somewhat suppressed demand for food. And so kind of, I think, more motivated from the perspective of the farmers, there was an attempt to kind of distribute these surplus goods to individuals. This turned out to not be received that well by kind of consumers or grocers. The grocers have kind of cut out of the process because this was kind of a direct from farmer to consumer process, and the consumers didn't like it very much because there wasn't a lot of choice involved. There was just, you know, here's an enormous amount of this commodity that you can take some if you like it.

Andrew [00:04:24] And so I think in 1939, they came up with this kind of new experimental idea of providing people with food stamps and so individuals could get a certain number of stamps of different colors. I think the orange stamps had to, you know, could be used on whatever individual wanted to purchase in the store. And then these blue stamps had to be used on these commodities, but individuals had a choice of what they could select and they could get those goods at the grocery store. So the program went away during World War Two, but then came back in the 1960s. There was an early pilot program by JFK, and then it became more permanent and the mid 1960s and really greatly expanded over that period and into the early 1970s.

Jennifer [00:05:03] So who was eligible for food stamps during this period?

Andrew [00:05:06] Yeah, that's a good question. You know, just stepping back for just a second and thinking about the context, the program, the program is really targeted at these low income kind of disadvantaged individuals. There was a sense at the time in the 1960s that there were a lot more hungry people out there than I think people are really aware of, particularly in the mid and late 1960s. There were kind of trips to Appalachia and Mississippi, and there were there was a television program that really highlighted all the issues with hunger that were occurring in the country and so that came alongside the implementation of the program in the 1960s. And reading about this stuff in books is upsetting, but it's also just it was really surprising to me. I wasn't really aware that kind of when my parents were growing up, there were areas really not very far away from where they were growing up, where there was, you know, pretty significant levels of malnutrition. So the program was targeted at low income individuals and answers your specific question. Initially, the rules were state specific, you know, as a means based program and so they were kind of income and resource rules across different states that were later standardized. I think the easiest way to think about it is it's essentially targeted at people who are below the poverty line.

Jennifer [00:06:13] OK. And you're going to be studying the effects on crime, so we might access to food stamps in early childhood in particular affect later criminal behavior.

Andrew [00:06:23] Yeah, that's an interesting question. I mean, it's not an obvious connection that one would think to make. I think it kind of circles back to what I was talking

about initially and why Alex and I were thinking about this and really, I think, started from these class discussions and thinking about these programs, and we started thinking a bit about crime, is this classic example of an externality we've worked on not just this food stamp paper, but also another paper looking at the effects of really childhood education on later criminal behavior.

Andrew [00:06:49] I think in both cases we thought, you know, this is this huge, hugely important externality, this really large kind of social costs that are associated with criminal behavior. If it's possible, do these programs, you know, through a multitude of initial channels that I'll talk about in a second might influence criminal behavior. There really could be this alternative justification for investing in these types of programs. Now again, like a lot of people, focus the investment choice on what do we care about efficiency or equity. That's kind of the traditional simple model approach of thinking about these programs and undergraduate economics course. And we thought, well, but maybe there's some reason that you don't have to think about that tradeoff as much. You know, maybe there is this efficiency motivation for investing in these programs as well. Maybe there's this market failure where actually know these crime reductions that occur later that are really helpful to society. But, you know, individuals are not going to think about investing in them themselves, necessarily.

Andrew [00:07:40] So, you know, why might we expect that to exist in the context of the food stamp program? Well, I think there are a couple of different mechanisms we had in mind. You know, one set of mechanisms is related to nutrition. There's some prior evidence that suggested a link between nutrition and later criminal behavior, just in a correlational sense. There's evidence that suggests that lower birth weight kids are more likely to have behavioral issues, you know, obvious link between behavioral issues and later criminal behavior. There's some reason to believe that these kind of investments in this early childhood nutrition or family resources is going to have long run effects on children and so even just through kind of those long run improvements in children, there might be changes in the opportunity costs of committing crime of individuals have higher incomes. They're going to be, you know, less likely to be willing to kind of put that at risk by committing crime.

Jennifer [00:08:32] So this is stuff like, are we thinking it affects your brain development or the amount you're able to pay attention in school? Or are those the kinds of stories you have in mind?

Andrew [00:08:41] Yeah. So those are the types of things that you know, perhaps are going to generate these later improvements in earnings or employment. It could be brain development. It could be kind of health more generally. You know, I think it's difficult to kind of separate out the ways in which malnourishment kind of influence later cognition versus kind of physical health and how those influence, you know, one's capacity to earn or be productive in the labor market. But there have been some evidence, you know, even at the time that we started working on the study, that there was some association between early childhood food stamp availability and later health outcomes. You know, the evidence was fairly compelling on certain margins, less on others, but reasons to think that, you know, there could be this effect on criminal behavior.

Andrew [00:09:21] There's kind of some separate literature, you know, not really done by economists that suggests there might be other physiological functions that are improved as a result of changes in early childhood nutrition. And so there we're thinking about kind of maybe there are changes in individuals. Capacity for self-control are being more or less

aggressive as adults. You know, while economists, you know, and I'll have to admit here that I don't think of myself as a crime economist, as you do feel free to jump in and say that this is not the way that crime economist think about it.

Andrew [00:09:49] But my impression is, is that, you know, traditionally crime economists have somewhat more of this kind of rational framework for thinking about crime. And, you know, the tradeoff for dissipating and criminal behavior. You know, there's some sort of return for participating in some sort of cost they're participating financially and individuals are kind of making those choices. You know, this is a little bit less along those lines. It's actually kind of changing the development of the individual early on. That might change both levels of cognition, but also kind of these health related things that influences someone's capacity to control themselves, things like that. I think for Alex and myself, you know, we really that seemed intuitive to us that particularly for things like violent crime. And again, I don't know how crime economists, you know at large think about this, but from our perspective, particular things like violent crime, it's it's harder to justify, you know, why in the context of kind of non acquisitive crimes where you're not actually trying to obtain much for yourself, what is the real advantage to the individual and committing these types of things? And so it seemed natural to us that there might be a developmental differences that made someone more or less likely to participate.

Jennifer [00:10:55] Great. Well, I hate to break it to you, but now that you're working on crime, you were definitely in the crime economists club. So for better or worse? OK, great, though mechanisms through actually getting more food and the various outcomes that could have. You also talk in the paper about potential income effects, like just the fact that this is sort of like a government program that's giving the family more resources, so you might expect that to affect things too.

Andrew [00:11:22] Yeah. So that's those are just some other possible mechanisms just coming back for the nutrition stuff for just a second because it's going away from economics, but I find it so fascinating. You know, these these physiological explanations, there's actually some evidence from even animal studies where they've kind of intentionally malnourished these animals in early life. I think the rats and the animals were more aggressive in adulthood. You know, as a as a parallel to kind of, you know, possible explanation for what could be going on here from the nutrition margin in terms of what you mean, you know, you were suggesting from the income front, you know, of course, there could be changes that you know are affecting the parents. This is an income transfer of the parents. They might have kind of direct effects on the parents in terms of their involvement with their children or expenditures on the children. And this is what we've talked about already that could be influenced through kind of the nutrition front. And that could influence these children through a variety of different channels.

Andrew [00:12:12] It could also be the case that, you know, these additional resources resulted in know better housing or better neighborhoods or health care or child care. And all of those things, you know, could also have influenced the child in terms of their later, you know, propensity to commit crime. Now it's also possible that, you know, the parents had, you know, stress reductions. There's been some evidence to suggest that kind of parents levels of stress might have important effects on children long term through brain development or other channels.

Jennifer [00:12:40] Yeah. OK, so food stamps here are going to be a package in some ways, a very simple package in other ways, a complicated package once you start thinking about all the different channels through which it can affect behavior. So before your paper,

what did we know about the effects of food stamps or SNAP today on various outcomes, not just crime?

Andrew [00:12:58] Yeah, I mean, there's a there's kind of a really large literature here, so I'll just touch upon one of the most relevant pieces. And there's a lot of, you know, fascinating descriptive work by non economists now thinking about the food stamp program and how people interact with the food stamp program. The work that's most relevant for our paper in terms of the effects of the food stamp program is predominantly coming from the work on the roll out of the food stamp program kind of similar strategy to what we're using finding positive effects of in utero exposure to birth weight and then some evidence of this before of these positive long run health effects. Kind of, I'd say, pretty compelling evidence, but very small sample suggesting these positive effects on health reductions and metabolic syndrome, things like that.

Jennifer [00:13:42] And then what did we know about the effects of early childhood interventions more broadly on crime outcomes in particular?

Andrew [00:13:48] Yeah, this is, I think, a growing area. I think there's not a ton of work here again. You know, I guess I'm in the club now.

Jennifer [00:13:56] Yes.

Andrew [00:13:57] I'm interested in your thoughts on kind of my perspective. I guess prior to entering the club was that a lot of the economists working in the crime space were really focused on kind of these more contemporaneous effects of policies like pretty short term effects of policies on changes in criminal behavior or if they were longer term effects, it was more on kind of like recidivism or things like that. And it seems like, you know, maybe over the past, I don't know, five or so years, there's been a little bit more work thinking about kind of earlier things that might influences criminal behavior.

Andrew [00:14:29] Like there's some work on kind of intergenerational effects, you know, participation in crime. You know, we initially started this project. It seemed like there wasn't a whole lot thinking about kind of the potential development of a criminal and what did exist there was a lot of work on the early childhood education area. And so thinking about programs like Perry Preschool, which has been, you know, heavily cited for its effects in terms of reducing crime, other evidence from early child education programs is a bit more mixed on the capacity of early childhood education to reduce criminal behavior. There's some evidence from more health related programs, so this is coming from the nurse family partnership. It's a program that I believe provides nurses to mothers of children through the age of two that are low income, trying to provide them with advice on what they should be doing while they're pregnant. And, you know, when they have a young child.

Andrew [00:15:26] There's some other kind of, you know, small scale interventions with parents of young children providing some sort of, you know, mentorship. Some of these have evidence on crime. Some of them do not. You know, I mentioned before, the education literature is a bit mixed in terms of its evidence of effects on criminal behavior. You know, I think I mention this to you Alex and I have this recent paper in which we kind of revisit this question again using the North Carolina data. The advantages it provides much more precise estimates than a lot of these earlier studies that that rely on kind of these smaller panels such that as analysis why or experimental data with, you know, more compelling identification, but, you know, relatively small and very pilot style programs. And,

you know, we find meaningful effects of a couple of programs in North Carolina with these early childhood programs on criminal behavior.

Andrew [00:16:09] There's also some health specific more specific evidence like I was mentioning the nurse family partnership that does find effects on criminal behavior despite finding minimal effects on education margins. And then there was a program in North Carolina that uses the CDC's prescribed treatment plan for lead exposure and finds pretty large effects of that program on reducing criminal behavior, which, you know, makes some sense given that the prior events that we've seen on lead exposure and its influence in later criminal behavior.

Jennifer [00:16:41] Yes. So I will just make a note. We'll put links in the show notes to both Chloe Gibbs interview on the head start paper that you two have together, which definitely in the space. And then I also had Steve Billings on to talk about that lead paper, so we will put links there for people who are interested in either of those in general. I totally agree with you that this is a space where there is a lot more work to do.

Jennifer [00:17:05] So this leads me to my next question. Why? Why don't we know more than we do? What are the main challenges for researchers who might be interested in this topic? I don't think that this is necessarily the first time anyone has considered this question, but it is tough to answer these questions. Partly, I think, because of data challenges and partly due to identification challenges in your mind. What were the hurdles here? Was it both of those things? Was one a bigger challenge than the other?

Andrew [00:17:34] Yeah, no. I think you really put your finger on it there. I think anytime you want to study the long term effects of anything, it's just going to be really difficult. You know, you need a number of things to kind of line up in order to do that.

Andrew [00:17:47] You know, you need data that track individuals over a long enough time span, you know, which doesn't exist and number of data sets. You need data that contains information on that early childhood environment, and it can't just be any data it's got to be, you know, some information that is going to support, you know, strategy that we find compelling. You know, I'm sure you've talked before on this podcast about, you know, the type of quasi random variation that you'd like to be able to take advantage of, you can't just look in a study and say, well, let's just look at differences in malnourishment in childhood and then look at propensity to commit crime later.

Andrew [00:18:20] And that type of thing has been done. And it does in fact, suggest that there is a correlation between those things. But of course, there are a lot of other things that are happening there where, you know, the children that are more malnourished have a variety of other challenges across their life. They growing up in neighborhoods that have higher levels of crime, et cetera. and so you can't then kind of ascribe that relationship to the malnourishment itself. So you really need, you know, this data that track individuals need the data that contain this information on that early childhood environment that's going to support some sort of a compelling quasi experimental strategy.

Andrew [00:18:52] And then you need enough individuals in this data set to be able to say something that's meaningful. And so, you know, there are a number of kind of panel data sets, small sample panel data sets to track individuals over time, and they do contain some information on early childhood environment. You know, for example, the county of birth, but a lot of these these data sets only contain a few thousand people, and it's difficult to get meaningful estimates in that context.

Andrew [00:19:15] You know, in other datasets, you might have, you know, very large numbers of people, but you lack information on the early childhood environment or you lack information on, you know, key outcome that you're looking at. So in the context of thinking about crime, there are some small panel datasets that contain information on criminal behavior. They tend to be a little small for estimating effects on crime. And then, you know, moreover, there might be some questions about the crime measures that they've got and these data sets. Oftentimes, they're self-reported participation in criminal behavior, and we might have some questions about, you know, whether those are kind of meaningful measures of crime.

Andrew [00:19:52] And so you really need these things to line up, you know, in order to answer this question and we were just really fortunate in talking about, you know, these types of questions and thinking about these externality, as Alex happened to come across this really cool data set from North Carolina that, you know, contains administrative data on crime convictions over a really long period, but just also happens to, for some reason contain the county of birth of the offender.

Jennifer [00:20:15] Yeah, it's amazing. I feel like North Carolina is becoming a theme today. They're obviously doing something right with the data they're making available to researchers. OK, yeah. So let's talk more about your strategy first. So as you mentioned, you need some sort of experiment here. Right. And of course, we'd love to have a randomized experiment where some communities or some individuals get food stamps and others didn't. But of course, we don't have that for a variety of reasons. But in your paper, you're going to use the way that food stamps were rolled out across counties in the U.S. as a natural experiment that gave us something akin to this ideal randomized experiment that we want. So tell us how this program was rolled out.

Andrew [00:20:53] Yeah, exactly. So, you know, I think it's important to underscore that this is not ideal. You know, it would be ideal if we had something that was more like a random experiment, but this is a difficult question to answer and so we're going to do the best we can. And the idea is to use this roll out strategy. It's a strategy that's been used in a number of now, where programs are adopted at a certain geographical level, at different times, within different areas. And so in our context, the food stamp program was adopted in counties at different points between the mid 1960s and the mid 1970s. And so the idea is going to be to use this variation in the timing of adoption to get some traction on this question in terms of how is actually rolled out. We don't have a perfect information on the process by which they decided which counties got the program first.

Andrew [00:21:44] The information that we do have suggests that the program was in very high demand and that there were a significant federal funding constraints that dictated the movement of counties off of a waiting list. So there were a lot of counties that wanted this program, and there just wasn't enough money and over time, the federal government kind of loosened up the amount of money that was available for the program in additional counties came on the list. You know, we do a lot in the paper and not sure if we talk about it's now or later, but we do a lot of the paper to talk about whether the timing of when these counties are adopting the program is problematic. And we find that, you know, there doesn't seem to be much association with kind of county level characteristics or the types of things at the county level that would predict changes in criminal behavior. It doesn't seem to be associated with, you know, whether a county got a program earlier or later.

Jennifer [00:22:30] OK, so basically the intuition here is like they're a whole bunch of places that want food stamps. There's not enough money. And so they basically wind up on a waitlist, essentially. And then it seems somewhat random, at least with respect to underlying trends like when places get off the waitlist. Did I get that right?

Andrew [00:22:47] Exactly the timing of when they seem to get this program over this about 10 year period seems to be somewhat random. There are not strong associations between the characteristics of counties either at baseline or kind of the time varying county characteristics of the things that are changing over that time period. Neither of those seem to be very strongly predictive of the timing of adoption within a county. We also separately kind of use those characteristics to predict how we think crime would trend within a county across this time period. And then we look and see, Well, is there an association between what we would have predicted to happen with criminal behavior in a county based on its characteristics over this time period? And, you know, when they adopted the program and we see, you know, very little evidence that there's any association between those two things.

Jennifer [00:23:34] Great. OK. So then tell us a little bit more about how exactly you use this set up this natural experiment to measure the causal effects of access to food stamps in early childhood.

Andrew [00:23:45] Sure. So we're talking about before the intuition here is kind of to compare kids who were born earlier in a county who did not have access to food stamps in early childhood, which we're thinking about as the period from in utero to age five to children who were born later, who did have access for some or all of that early childhood period.

Andrew [00:24:05] And so we're going to compare kind of across cohorts within a county where one cohort did not have access to their own child and the other cohort did. And you can think about us having another county or another set of counties that perhaps got the program significantly later. And so now none of the equivalent cohorts had access to the food stamp program in early childhood in that county. And so we can kind of compare the change and the likelihood of criminal behavior across cohorts in the first county where there is a change in access to food stamps and early childhood, with the change in participation in criminal behavior and the second set of counties where there is no change in access to food stamps.

Andrew [00:24:44] So that's really a kind of the thought experiment I think that we have in mind. In practice we have a whole set of think around 3000 counties where there is kind of staggered adoption across counties, and we're using all the variation between all of those counties to answer the question.

Jennifer [00:24:59] OK. Yes. And as you mentioned, you're thinking about in utero. That's when the mother is pregnant with the child through age five. And I think in the paper, you're you're basically looking at like amount of exposure or so if you were three, when the county got food stamps, you had more exposure than if you were five when the food stamps came in. And then you look at a broader set of pages, I think in the paper, what are the ages of kids that you're focused on here?

Andrew [00:25:22] Yeah, no. I mean, you have a right. So we're particularly interested in the effects in early childhood that's in utero through age five. It's important, though, to

realize that, like all of our effects really are identified relative to effects at a later age because all the counties are eventually going to get food stamps during this time period.

Andrew [00:25:38] And so really, what we're seeing is kind of what is the relative effect at exposure early ages versus exposure at these later ages? There's some sense, you know, from prior literature that kind of the effects of malnourishment or susceptibility to environmental toxins, things like that are much stronger in this early childhood period. And so there's reason to expect that we would see and have stronger effects during this time period. We kind of map out the effects by doing this and saying the empirical imagery we frequently call it like an event study, but you know, we're going to actually estimate effects of being exposed to the program at a variety of ages, you know, we can look at people who were born, you know, several years after the adoption of a program.

Andrew [00:26:19] We can also look at people who were one two, three, four or five when a program was introduced in a county. And we can use this variation to kind of map out the effects of food stamp exposure starting at different ages. And so when we do this, we can kind of map out these effects and we see that kind of there's a consistent effect of the program. You know, regardless, if you were born, you know, one, two, three, four or five years after the program started adopting a county. And that makes a lot of sense because there really shouldn't be any difference in treatment for those individuals. They were all born after food stamps are to exist and they're all fully treated from the point of conception, you know, through their lives. But then when we look at, you know, whether a program showed up when you're one, two or three or four and five, we see there are smaller effects for individuals who had the program show up when they're one and even smaller for two and even smaller for three and four and five.

Andrew [00:27:08] And then it seems to flatten out. And so, you know, if you are in a county and you get food stamps that shows up after the age of five, there doesn't seem to be really any different effects for getting it at five or six or seven or eight or nine or 10. And then we use this kind of combined with his earlier evidence to suggest this early period is what matters to kind of focus on the percent exposure during this early childhood period, this 0-5 period, which is consistent with the earlier papers that are looking at food stamps as well.

Jennifer [00:27:37] Yeah, that graph in the paper is just beautiful. It is like the key graph that everyone wishes they could have, right? And you oh, you always wish for one graph that tells the whole story. And that is the graph that tell us your story, and we'll talk more about the results in a moment before we get more into that. Tell us about the cool data that you were able to find for this paper.

Andrew [00:27:56] Yeah, Alex happened to come across these data. You know, it's been so many years now since we initially started working on the paper. You know, you said you were talking about this paper and I thought, Oh man, I totally forgotten so much about.

Jennifer [00:28:07] It's forthcoming.

Andrew [00:28:09] But I know it's just really says something about the publication lag in the process. I don't even remember what year we started working on this paper, and this is better not to know. This is not my longest lag, but I really had to think hard about some of the things that we did in the paper because it's been so long, but I do remember that Alex came across this data.

Andrew [00:28:31] We had been talking about this stuff because he teaches public economics as well, and he came across this, this cool data from North Carolina. You know, this administrative crime data that contained the universe of convictions over a pretty significant span. And the really cool thing about them was that they contained the county of birth and so we could then use the information to construct birth county by birth cohort conviction rates in order to be able to leverage this variation in program exposure, which we do with the food stamp program. And then, as I mentioned before, as a separate paper looking at the effects that had started smart start a very similar idea, but we wouldn't be able to do it if we didn't have this information on county of birth to get this variation in early childhood exposure to these programs.

Jennifer [00:29:13] And so what outcome measures are you focused on here?

Andrew [00:29:16] Yeah. So we're primarily focused on the probability of conviction by age twenty four. We focused on age twenty four because we also separately use data from the uniform crime reports, the arrest data. I can talk about that more in a moment. But the data there only show up, I think, in single age ranges through twenty four. And so we thought for comparability, we wanted to focus on that. Most violent crime does occur by age twenty four. So we did think there was a huge limitation in focusing on that. I think in the appendix, we we show the results are, you know, robust to looking at older ages as well. And in the final reason that we wanted to look at age twenty four is there are some concerns with using the North Carolina data in terms of out-of-state migration that we can come back to you later.

Andrew [00:29:59] But we thought that by looking at a younger age, we would minimize that type of concern as fewer individuals would have kind of migrated out of the state at that point.

Jennifer [00:30:07] OK. Yeah. And just to make it super clear for people who might be wondering about this, you don't have data that you're like linking whether they got food stamps when they were kids with whether they were convicted later. You're going to be doing all this. It's sort of like a county cohort kind of level. So if you're a certain age, you're born a certain year and you were born in this county and then you're going to look at what the conviction rates for people born in that county in that year are. Is that right?

Andrew [00:30:32] Exactly. We're going to take the data on convictions, which is just all the individuals have been convicted, and we essentially just summing those up by, you know, county of birth and birth cohort year and then dividing that by the number of births that we're in that county and birth cohort, which we get from a separate data source. And then we can't link those specifically to the information on the availability of food stamps for an individual. So we're looking at at the the birth county by birth cohort level, right.

Jennifer [00:30:59] And you know, when that county got food stamps? Exactly. Great. All right. Well, let's talk about the results, more about the results. You've already given us a little bit of preview. Tell us again what you find. Is the effective food stamp access in early childhood on later criminal convictions?

Andrew [00:31:15] Sure, yeah. It's interesting to look through the paper on this as well. It occurred to me that we have about a paragraph or maybe two on the results, and then there are about six or seven pages on the various threats to validity for the imperialists.

Jennifer [00:31:30] Like any good econ paper.

Andrew [00:31:31] Yeah, it's just it's fascinating to see kind of the distribution of the text on the different parts. You know, sometimes you're in the trees when you're working on these things and then you step back and recognize what it looks like. But anyways, in terms of the, you know, the results, we've touched upon it before, there is a reduction in the likelihood of later criminal conviction as a result of greater exposure to food stamp access and early childhood. So specifically, we can think about it as each additional year of availability of the food stamp program early childhood. So the period from conception through age five reduces the likelihood of any criminal conviction by age 24 by about point two or three percentage points. This is a it's about a two point five percent reduction per year exposure to the program during that period.

Jennifer [00:32:16] And do those effects vary with race at all?

Andrew [00:32:19] Yes, they do vary with race kind of consistent with participation in the program. We see substantially larger effects for nonwhite individuals who also had much higher rates of participation in the food stamp program during this time period.

Jennifer [00:32:33] And what types of crime were affected?

Andrew [00:32:36] Yeah. So we're, you know, we're a little bit limited here in terms of making super strong conclusions, but we see stronger effects on violent and violent felony crimes. We attempted classifying the crimes in a variety of other ways. So I don't want to, you know, put too much weight on these kind of various specific conclusions that I'm going to suggest. But we do see some significant reductions in assaults and robberies. We had one reviewer that suggested a kind of an alternative, an interesting, I thought, categorization of the crimes and terms of acquisitive versus not acquisitive crimes.

Andrew [00:33:07] So thinking about crimes where there might be some sort of return to the individual versus crimes where there really shouldn't be. And we found, you know, much stronger effects for non acquisitive crimes, which again for us seemed more consistent with some sort of physiological contribution of the food stamp access that was influencing these types of crimes where they're more violent crimes without a clear return to the individual, you're less likely to get into bar fights.

Jennifer [00:33:34] It's not that you're less likely to steal because you're hungry or something. Yeah.

Andrew [00:33:38] Exactly.

Jennifer [00:33:39] OK. All right. Well, let's talk about the many pages of robustness checks. So the assumption, as we've already mentioned a little bit, the assumption underlying this empirical strategy is that the timing of food stamp access is uncorrelated with other factors or trends that might independently affect criminal behavior. So that is, the roll out of food stamps was as good as random from the perspective of, you know, what's going on with crime. So you do a lot of work in the paper to consider possible threats to this assumption. And I do want to talk through all the stuff you do. So first, you considered the possibility that the adoption of food stamps is correlated with other things, particularly other war on poverty programs, which we might worry would be rolled out the same time in the same counties. So how do you and Alex convince yourselves this isn't a problem?

Andrew [00:34:26] Yeah, we talked through a number of things here, as you suggested. I mean, I think the first thing that we do and I've mentioned briefly before is this there's just some anecdotal evidence that suggests that a waitlist dictated kind of the order of funding here, and that wasn't the case for at least some of these other programs.

Andrew [00:34:42] And so that, you know, wait lists, prescribing how the programs were adopted suggests that there's not something likely going on, you know, at the county level, just determining this, there's just not enough funds and more funds become available and then add some additional set of counties, you know, get added to the list. And so, you know, we thought that was a helpful place to start.

Jennifer [00:35:02] You know, it is amazing how we we always love the word waitlist. When we hear a practitioner, policymakers say there's a waitlist, our eyes light up.

Andrew [00:35:09] Yes, you know, it would have been ideal if they decided to do it randomly for us using the ping pong balls or whatever like they do in the charter school lottery.

Jennifer [00:35:19] Mm hmm.

Andrew [00:35:19] But it's definitely helpful in some ways that they rolled it out in a way that at least provides some suggestion that it wasn't associated with these counties that were really trying to make, you know, strong improvements or changes on some other margin. OK, so that's great, but we can't stop there of course, we provide additional empirical evidence that suggests that kind of the timing of adoption of these programs is not associated with other things about these counties. And so, you know, I think the first thing that we do is we we correlate the timing of adoption with county characteristics. So we say, you know, does it look like it's the case that counties of certain types are getting these programs earlier.

Andrew [00:36:00] You know, that might be problematic because we might expect counties with certain characteristics to trend differently in terms of the likelihood of criminal behavior. And we see that these characteristics seemed to explain relatively little of the variation and timing, and so again, that kind of underscores this idea that it wasn't certain types of counties that were able to get these programs earlier and these counties were just going to trend differently in terms of likelihood of crime for some other reason.

Andrew [00:36:26] I think I mentioned it before as well, but we also kind of use these county characteristics to predict the changes in criminal behavior we would expect within these counties. So we take a full set of baseline county characteristics. I want to say there from 1960, and we say based on these characteristics in 1960, what would we predict to be the change in criminal behavior across these cohorts during this time period? Kind of using, I think, the full set of national data, not just in North Carolina data. And then we kind of use that predicted relationship and say, well, does that predictive relationship correlate at all with the timing of adoption in these counties? Is it the case that the counties that got these programs earlier or later are the counties that we thought should have, you know, stronger reductions or stronger increases and likelihood of criminal behavior over this time? And we don't see a strong association there.

Andrew [00:37:17] So then we go on to do a number of robustness checks, kind of including a variety of different county level controls as well as, I think, county level trends. We also include commuting area by birth year fixed effects. So I think provides a really

compelling case. We get to that specification in particular, we're identifying off of differential adoption of food stamp timing within commuting zones where some counties happen to get the program earlier than others. And so these are counties that are pretty close together, counties that people in our commuting between, but for whatever reason, one county got a little bit earlier than another county. We're going to kind of control for the general propensity to commit crime in that commuting zone and how it changes during the sample period, and then identify off of the fact that one of the counties are more than one of the counties got this program earlier than another within that commuting zone.

Andrew [00:38:08] And so when you start kind of, you know, approaching it with these different robustness checks and putting these two controls at each of them, you know, tries to address a different type of story that someone might come up with to think about. You know why the effects that we're identifying could be driven by something else? And when you start, you know, going through all of these robustness checks, it becomes harder and harder to come up with alternative stories to explain why we see the pattern of effects that we see. You know where you have this kind of constant effects now of the program for individuals that are born after exposure and then this kind of phase out for this zero to five period.

Jennifer [00:38:42] Yeah, the phase out zero two five is especially compelling, I think, and hard to explain what their other means makes it especially nice. And next, you run a placebo test, so something that will turn up a null effect if your empirical strategy is isolating the causal effect you think it is. So tell us about this test and what you find.

Andrew [00:39:01] Yeah, you know, it's always nice to have some sort of group of individuals that you think kind of should have been affected in similar ways, except for the treatment. And that's what we're looking for here. You know, in our context, we think we might be concerned that something else was happening in these counties that happened later, that just happened to line up with the timing of food stamp adoption. Right. So it's a little bit harder to think through this type of story. For example, there could be subsequent changes in a county, such as changes in its criminal justice system that are correlated with kind of the timing of adoption of the food stamp program.

Andrew [00:39:37] And they are actually influencing what's happening in terms of the conviction rates and not the food stamp program itself. Right. So that's the type of story that might still be problematic, even with a lot of the kind of robustness check approaches that we just mentioned previously. And so we'd like to find some sort of placebo group, as you mentioned, to try to find a null effects among that group that could be influenced by these later changes. But this group is, you know, not affected differentially by a kind of food stamp exposure. So we don't have a perfect placebo group available in our context. But the thought was to use individuals who are living in North Carolina but were born outside of it, so we could then assign these individuals who show up in the criminal conviction data. We can assign their county of residence as if it were their county of birth and construct conviction rates based on that.

Andrew [00:40:27] So, you know, the idea is, again, that these individuals were not born or many of them are not born in these counties that they're living, but they have potentially been living in these counties for a while. And so they may have been influenced by these types of changes that are occurring later. And so if what we're seeing in our main estimates is driven by a kind of later changes that are happening in these counties, we might expect to see something show up for this group of individuals who weren't born in North Carolina but are living in these counties. And so basically what we do then is

estimate this placebo check for this group of individuals. And if we, you know, if we saw some sort of similar effect for this group of individuals, we might be concerned that these types of later changes within counties are influencing what's going on and it's actually not what's happening earlier on in terms of its impacts.

Andrew [00:41:11] Fortunately, we don't see a whole lot going on with this group of individuals, although again, I think it's important to caveat that this is not an ideal placebo check for a variety of reasons that we talk about.

Jennifer [00:41:21] It's pretty good.

Andrew [00:41:23] You liked it?

Jennifer [00:41:26] I liked it.

Andrew [00:41:26] I need to draw you as a referee. No.

Jennifer [00:41:31] We're not in the lab. It's hard to find the perfect test, but I like this. Yeah, and you find a null result, which is exactly what you want to find when you have a placebo test. OK. And next, you consider whether access to food stamps might affect migration out of the state, which you mentioned earlier. So tell us why you're worried about migration and what you find when you test for this.

Andrew [00:41:52] Yeah. So the big concern here, right, is that, you know, the data are from North Carolina, so they're restricted to convictions that are happening in North Carolina. And so, you know, the key concern that we were thinking about is, well, what if food stamp access in early childhood just makes individuals more likely to migrate outside of the state? So it could be the case that what we're seeing is individuals are more likely to leave the state. They're actually still committing the same crimes that they would have committed in North Carolina. They're just now committing them outside of North Carolina. And so what we're suggesting is a reduction in criminal behavior is actually just a redistribution and criminal behavior outside of North Carolina. So, you know, in order to get at this, we want to answer the question of, well, does it look like it's the case that kind of exposure to food stamp availability in early childhood influences, whether an individual is more likely to leave their state of birth? We approach this in a variety of ways.

Andrew [00:42:47] I think that kind of the best power tests that we have in the paper we use actually census data and we use the variation in kind of exposure at the birth state birth year level to suggest that there's there's no effect of being more likely to be exposed to food stamp availability on the likelihood that one leaves their state of birth. But we also do some supplemental checks and some of these smaller data sets that I mentioned previously, like the [00:43:11]null s y [0.1s] where we can specifically use the county of birth variation and see if there's an effect on the likelihood of individuals leaving their state of birth. And in both cases, we don't see any evidence that this is the case.

Jennifer [00:43:24] Right. And so so far, we've been talking about effects on convictions. So that's the main outcome of interest in most of the paper. But you also consider effects on arrests using data from the uniform crime reports, which we often refer to as the UCR. So what does this you and what do you find when you use this alternate outcome measure?

Andrew [00:43:44] Yeah. So first of all, I think there are some caveats with the UCR that I should mention. We don't have county of birth there, we have county of residence, and so we have to make a much stronger assumption in terms of assigning the county of residence, assuming that that is essentially reflecting something about exposure in terms of the county of birth know, and that is a much stronger assumption. On the other hand, the UCR provides two advantages. First, they're going to cover much more of the country, so we can say something potentially about whether this result is specific to North Carolina or about whether this is kind of a more general result across the country.

[00:44:18] And then the second one is that, you know, the conviction data involves kind of multiple layers of involvement with the criminal justice system. You know, if we thought it was possible that there was something happening as a result of food stamp access or even related to food stamp access kind of influenced one's ability to better navigate the criminal justice system. Or perhaps internal justice system was kind of different, as you know, just happened to be correlated to in a particular way. You know, the arrest measure is kind of one step further removed and so provides a kind of a slightly different measure closer to the actual commission of criminal behavior. And so what do you find? We find pretty similar facts and then you start it at once. You kind of think about the differences in exposure as a result of the strategy. The effects that we found on arrests are pretty consistent with the effects that we find on convictions and the North Carolina data rate. So these facts seem pretty big. You talk a bit in the paper about how these effects sizes compare with the effects found in other related studies. So talk us through that a bit. Yeah. So, you know, first of all, I should just recognize that there is, you know, there's some imprecision with these facts. So, you know, they're not super precisely estimated, but the point estimates do imply, you know, relatively sizable effects. So if we think about scaling them by the kind of likely first stage in terms of participation in the program, we're thinking about kind of imply treatment on the treated effects of roughly seven point six percentage points and the likelihood of being convicted of a crime. Do you want to kind of compare those to other implied treatment, untreated facts, you know, from some of the studies that we've talked about previously, you can think about the nurse family partnership.

[00:45:55] They look at no convictions by age 19 are effects or about half the size of the effects implied by that study. Our effects are also about a little under half of the size of those estimated for the lead treatment for. The room that I mentioned before that I think you had Steve Billings on before talking about the CDC recommended led treatment program that was conducted in North Carolina. So our effects are about half the effects of that program as well. One thing that's interesting kind of in comparing to both these programs, not just in the magnitude, but just thinking about kind of can we learn something from the different programs is that both of these interventions that I mentioned, the nurse family partnership and this kind of led treatment program, they have stronger effects on violent offenses, just as we do. And both of these interventions also included some sort of nutritional assistance or advice suggesting that, you know, nutrition could be a part of the mechanism for all three studies.

Jennifer [00:46:49] Yeah, I agree that piece is super interesting. So in the lead paper, I know reasonably well. And yes, it can be the idea there is like, I guess if you've been exposed to lead, they tell you to drink a lot of milk. The calcium helps prevent the lead absorption or something like that. And so, so yeah, it got me thinking about the extent to which even food stamps. Maybe it's helping protect you from some of these other toxins or something like that. And the way that all of these different threats and interventions could be interacting is super interesting.

Andrew [00:47:19] No, I think that's exactly right. I think there is a sense that and I'm not going to be able to put my finger on an exact piece of evidence here that individuals who have significantly better nutrition or just kind of adequate nutrition, they're much more protected against exposure to different types of negative environmental conditions.

Andrew [00:47:38] And so I think you're right that one of the possibilities for the food stamp program is that kind of by improving nutrition, it may have been protecting these individuals from the negative effects of other types of neurotoxins, potentially including lead.

Jennifer [00:47:53] Mm-Hmm. Yeah. OK. And then the last piece in the paper is a cost-benefit analysis, which we always love to see. So how did the costs of implementing the food stamps program during these early years compare with the social benefits of the program?

Andrew [00:48:09] Yeah, this you know, this circles back around really nicely because this is kind of, you know, like I mentioned in the beginning, the, you know, one of the big motivations for us in looking at this policy was that we thought it was possible that there was this type of effect on criminal behavior and we knew that there are these, you know, huge social cost dollar values associated with the kind of commission of these different crimes. You know, I even mentioned, I think at the beginning, this kind of equity efficiency tradeoff in this argument about you have to sacrifice some efficiency in order to gain, you know, in terms of equity. And it turns out that, you know, in the context of the food stamp program under most of the parameters that we use, the implied discount of social benefits from the reduction in crime are actually larger than the cost of the implementation of the program. And you know, it suggests then that maybe there's not this tradeoff that you actually can get kind of an efficiency improvement from the perspective of society by transferring these resources, you know, to these susceptible individuals and thereby reducing criminal behavior and the huge costs that are associated with it.

Jennifer [00:49:11] Yeah. So implementing food stamps, providing adequate nutrition for young children is smart crime fighting strategy and not just a nice moral thing to do. And it's fascinating also that you get that, you know, the program's worth it just based on the crime effects. And I imagine while I mean, you mentioned earlier that there are other benefits too, it's not just that it reduces crime, presumably increases health and presumably educational outcomes and all these other things that your numbers, I think, are not capturing.

Andrew [00:49:43] Exactly. And I should say there are other papers are kind of papers and the last couple of years that are trying to kind of capture effects on these other margins, you know, using a larger data sets. So there's this paper using the census data, which now you can access county of birth for individuals in certain years of the census and access data and trying to more comprehensively measure the effects of food stamp access and early childhood to think about, you know, the more holistic benefits that are being provided.

Jennifer [00:50:11] Yeah. So what are the policy implications of these results? What should policymakers and practitioners who are listening take away from all this?

Andrew [00:50:18] Yeah. So I think, you know, it strongly suggests that there's an important role for early life circumstances and influencing the probability of later criminal behavior, which I think is really important to think about it. And it has, you know, as we've

mentioned before, are these these huge potential external benefits for society that can really motivate investments in these types of programs. If we can think long term, which I, you know, recognize is difficult to do. You know, the one caveat that I would mention is that, you know, the results that we're looking at here are specific to a period in which, you know, hunger and malnourishment were very different, I think, than they are now in the United States.

Andrew [00:50:57] And so, you know, it's not clear that we can kind of extrapolate the effects of the food stamp program from this period that we've studied to the effects of the food stamp program today would be kind of the one caveat that in.

Jennifer [00:51:10] Yeah so creating the food stamp program probably had bigger effects than like the marginal effect of increasing food stamp benefits or something.

Andrew [00:51:17] Yes. Yeah. Yes.

Jennifer [00:51:19] Are there any other papers related to this topic that have come out since you first started working on the study many, many years ago?

Andrew [00:51:26] Yeah. I mean, I'm sure that there are some great papers out there that I'm unaware of and, you know, even spending a little bit of time reviewing my own paper, I thought, I really need to go back and look and see what else is out there. For example, there's one paper, but it looks at the effect I think of Medicaid access and suggests important effects of Medicaid access. I think for children, maybe in adolescence, maybe a little bit earlier than that. And looking at the effects of that on later criminal behavior that I thought was really interesting. I'm aware of an interesting recent paper looks at effects of school spending. I think it's a it's a growing area. I think it should be. I think it's really easy to motivate studies like this because of the huge dollar values that are associated with the social costs of crime. You know, there's one estimate out there that puts it at two trillion dollars. So when you, you know, when you start a study by saying, I'm going to think about a program that potentially, you know, significantly reduces the cost of something that that can be measured at two trillion, I think it's really easy to motivate that type of study.

Jennifer [00:52:24] Yeah, crime is expensive.

Andrew [00:52:25] Yeah, I think there are some interesting papers. I think I mentioned before also this paper with Alex looking at kind of the effects of early childhood education programs.

Jennifer [00:52:33] Yeah, even just talking about the data, I mean, I do think that we always struggle to find good natural experiments, but the data here does seem to have been a major constraint. And now we've got "z jars" coming in and where we can link to census data and look at people's criminal justice outcomes later. And I feel like that's going to open up all kinds of opportunities to look at what happened when people were young and follow them over time. So it'll be really interesting to follow this line of work going forward.

Andrew [00:53:03] Yeah, I completely agree. I think that's that's a really great point. All of these linkages, you know, not just the one that you mentioned, but the linkages at the state levels as well between individuals at different ages. You know, they've opened up lots of lines of research in kind of different domains. And I think extending them to this kind of the criminal margin is really interesting.

Jennifer [00:53:23] Mm hmm. Yeah. I'm always plugging for people to add crime as an outcome whatever their study is, just add criminal justice, contact in there. It is expensive. It's consequential to society, and it's usually interesting.

Andrew [00:53:38] Yeah, I mean, I think, you know, we've talked about a bunch of times, but I mean, once you start putting those dollar values out there, I think it's hard to ignore as a really important outcome. And then I think as an economist, it's super interesting from the perspective of it's like this classic externality, which makes it a really useful thing to invest in.

Andrew [00:53:56] If you can, you know, if you can reduce crime, that's a tremendous benefit to others in society. That is potentially a market failure because these individuals are not going to invest in these types of things themselves, necessarily because the returns for crime reduction are not necessarily going to accrue to them, but they are going to accrue to the rest of society. And so we should be willing to kind of invest in programs that reduce that.

Jennifer [00:54:18] Yeah. So we've already gotten into the research frontier a little bit, but what do you think the next big questions are in this area that you and others will be thinking about going forward? What's next on your list?

Andrew [00:54:27] Yeah, I'm keeping those all of myself.

Jennifer [00:54:28] Which ideas haven't worked out that you want to share with us?

Andrew [00:54:35] Yeah, I'll send everyone down now that something is now, this is a great question, and it's something that I hope to spend more time thinking about. You know, I think you see me a couple of questions about, you know, what I've been thinking about on sabbatical and spending a lot of time on revisions, but I hope to spend a lot more time to think about kind of new ideas in the coming weeks and months. And so it's useful to kind of be proud of that direction to kind of be a little bit more concrete about where I think things are. And I think, you know, immediately kind of a couple of things came to me. One is, I think people are thinking a lot more about connecting the dots between early childhood and later outcomes. And I think this is potentially particularly relevant in the case of criminal behavior, where there is, I think, some evidence, at least, that traditional measures like test scores are not capturing changes in children that seem to then lead to changes in criminal behavior.

Andrew [00:55:23] You know, it might be that actually some of these non-cognitive measures or other types of measures are really the channel through which the crime reduction is kind of being mediated. And so, you know, getting a better handle on the types of things you want to call them kind of intermediate outcomes or surrogate outcomes, and are going to tell us more about likely subsequent reductions in crime or other outcomes, I think is really important because then we can think about more modern, modern programs. You know, one of the big limitations here that already mentioned is that we're we're looking at this program that was implemented. You know, now what, like 50 years ago. And so, you know, it's nice that we can look at this and then we can kind of take some implications from it.

Andrew [00:56:02] On the other hand, you know, the context is very different than the current context. And so the extent to which we can. Kind of get a better handle on what

these intermediate or surrogate outcomes are. You know, we can evaluate effects on more modern programs and perhaps have kind of important implications for what we think might happen for subsequent criminal behavior. And then hopefully kind of do more to validate those intermediate outcomes. So I think that's one big area that I think is really interesting and really also, I think, overlaps nicely with what we were talking about with these linked datasets where, you know, if you can link these to schooling information and early childhood information, connected to the later criminal behavior, you can use more of these measures that are already being captured at the school level to understand eventually something about what's happening. And the second thing I'm personally really interested in child development more generally and understanding kind of where the biggest bang for the buck is at these ages.

Andrew [00:56:53] So I think that continues to include thinking about kind of the types of investments that we should pursue. So, you know, should we be pursuing early childhood education, should we be giving cash transfers, should be providing, you know, more nutritional assistance or guidance? So that's the kind of more on the type of investment side of things. I think we should also be thinking about who we should be investing in. I think these debates are particularly topical right now. We know as we're thinking about kind of universities versus targeted preschool and who should receive things like the child tax credit, et cetera.

Jennifer [00:57:26] My guest today has been Andrew Barr from Texas A&M University. Andrew, thank you so much for talking with me.

Andrew [00:57:32] Thanks so much for having me.

Jennifer [00:57:39] You can find links to all the research we discuss today on our website probablecausation.com. You can also subscribe to the show there or wherever you get your podcasts to make sure you don't miss a single episode. Big thanks to Emerson Ventures for supporting the show, and thanks also to our patrons and subscribers and other contributors. Probable causation is produced by Doleac Initiatives, a 501(c)(3) nonprofit, so all contributions are tax deductible. If you enjoy the podcast, please consider supporting us via Patreon or with a one time donation on our website. Please also consider leaving us a rating and review on Apple Podcasts. This helps others find the show, which we very much appreciate. Our sound engineer is Jon Keur with production assistants from Nefertari Elshiekh. Our music is by Werner, and our logo was designed by Carrie Throckmorton. Thanks for listening, and I'll talk to you in two weeks.