

Probable Causation, Episode 76: Tim Moore

Jennifer [00:00:08] Hello and welcome to Probable Causation in 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 Tim Moore. Tim is an associate professor of economics at Purdue University. Tim, welcome to the show.

Tim [00:00:26] Thanks, Jen. I'm really pleased to be here.

Jennifer [00:00:29] Pleased to have you. So today we're going to talk about your research on the long term effects of the crack cocaine epidemic in the U.S. But before we get into that, could you tell us about your research expertise and how you became interested in this topic?

Tim [00:00:43] Sure. I'm an economist who works on public economics and health economics. I tend to describe my research interests as generally falling into three categories. The first is the economics of illicit drug markets, and this paper is firmly in that space. The second is economics, determinants of health and often I'm looking at kind of mortality and how it's connected to income payments and other things in that area. And I also I'm also interested in social insurance. And there I'm primarily interested in understanding disability insurance. And so across all my interests, it nearly always involves death or disability.

Jennifer [00:01:26] Cheery topics.

Tim [00:01:27] Yes. So before graduate school, I worked at a drug and alcohol treatment center for a couple of years before I did my Ph.D.. And so in that role, I was doing work on policy research around illicit drug markets in Australia. I got to the University of Maryland and Bill Evans was the person I was working for as a research assistant. Craig Garthwaite was his other research assistant and we all got talking and Bill threw out an idea around how the crack cocaine epidemic might be affecting education choices.

Tim [00:02:04] That led to a paper that we that we published in 2006. And then we through that process, we wanted to we wanted to explore in more detail the long term impacts of the crack cocaine epidemic on violence and particularly on young black males.

Jennifer [00:02:23] It's always interesting to hear how these coauthor groups develop. That's very interesting. So your paper we're going to talk about today is titled "Guns and Violence: The Enduring Impact of Crack Cocaine Markets on Young Black Males." As you said, it's coauthored with Bill Evans and Craig Garthwaite, and it's published in the Journal of Public Economics. So let's start with some background on violent crime in the U.S. from, say, the 1980s through the present. Very big picture here. What happened to violent crime during these decades and to what extent have trends been different across different groups?

Tim [00:02:55] Yeah, it's so primarily focused on what's been happening for murder rates and that's what we focus on in the paper. The 1970s, the murder rates were quite high nationally and then in the early eighties they started to decline for the first half of the 1980s. Then they went up slightly for the second half of the 1980s and peaked around 1991. And then since 1991, until about 2015, there's been a really steady decline in the overall murder rate. So it's roughly halves over that period. And so that's kind of the basic

national story. But then if you dig into specific demographic groups, actually most demographic groups have experienced declines since at least 1980. So the main exception, younger black males. And so they had a doubling of murder rate between the mid eighties and the early 1990s. Other groups, young white males and younger black females, also experienced some increase in the late 1980s, but often much lower base.

Tim [00:04:10] And also the overall change was just much smaller. So the basic story is that what looks to be a slight movement down and then a slight movement up in murder rates in the 1980s, the movement up is almost entirely driven by worsening outcomes among young black males. So there's substantial heterogeneity. There's actually a great paper in 1995 by Al Blumstein that, really documents this fact and starts to try and understand what's what's been going on, but that's the big picture of what's been happening with murder rates over the last 40 years. Since 2015, we've had a bit of an increase, but that's after a lot of a long period of decline. So in the big scheme of things, nationally, things are things look a lot better now than they then. They did certainly in the late 1980s, early 1990s.

Jennifer [00:05:03] Yeah. And this big trend over time, this rapid increase and then decrease in violent crime and homicide in particular has been the big mystery in the crime literature. I'd say everyone has their favorite theory for what's going on. There are many theories for what caused those patterns during the eighties and nineties, but you argue in the paper that most of these theories aren't particularly satisfying. So talk a little bit about some of these theories that have been floated over the years and tell us what you see as their primary drawback.

Tim [00:05:34] I mean, there's a lot of different theories in in this space. I mean, some of the more prominent ones and maybe better known ones that, you know, changes in access to abortion changed the composition of younger people. Related to that, just a general decline in teen births has maybe changed violent crime, other types of changing demographics, just as the baby boom has moved through the age groups.

Tim [00:06:01] Other explanations include changes in law enforcement, so changes in law placing, changes in policing, more incarceration. Then there's also things like changes in the amount of lead in gasoline I think you've had Steve Billings on to talk about that previously. So there's a lot of theories and what I would say is there's kind of these two features. So there's a need to explain this kind of long term decline, but there's also a need to explain why the experiences particular of young black males, have been so different over this period. And what we emphasize in the paper is that the murder rates, their experience of violent crime, was much more similar to other demographic groups prior to this period. So if we look in the in the late sixties and and the 1970s, they track other groups much more than they do once we had this period of the late 1980s and early 1990s.

Jennifer [00:06:58] So you and your coauthors are going to focus on a different theory for these patterns in violent crime, the emergence of crack cocaine in cities across the U.S.. So for those who aren't familiar, what is crack cocaine? And what made markets for this drug different from other drug markets that it existed before?

Tim [00:07:15] It was a technological innovation up until the crack cocaine epidemic, which began in the early 1980s. People generally took powder cocaine, and there was a way to sort of take a more pure form of cocaine called freebase cocaine. But it was very dangerous to make. So you would have to use flammable materials and there was a good

chance that you would do yourself some serious injury if you tried to make freebase cocaine. Crack cocaine was just a much simpler way to create a form of cocaine that resulted in a very intense and brief high.

Tim [00:07:52] And what it allowed dealers to do was so much smaller amounts of cocaine much more cheaply. So these stories of people taking an amount of powder cocaine that might have been worth, let's say, kind of \$10,000, \$20,000 and turning it into a straight value, \$100,000 or more than \$100,000 by converting it to crack cocaine. So it increased the profits that increased the number of potential consumers so they could sell crack cocaine for as little as kind of \$2 or \$3. And so we had a situation with crack cocaine where suddenly there's a way to get a lot of profit, there's a way to sell to a lot of to a lot of new consumers. And there's a lot of money to be made. And there's a lot of money to be made by people who have access to guns and a willingness to use violence. And so so it's saying that the with crack cocaine and with the epidemic and the drug taking epidemic, we just saw this huge change in violence over a relatively short period of time.

Jennifer [00:08:58] And so how did crack cocaine emerge across the U.S.? Where did it appear first? And then what seems to have determined where it went next?

Tim [00:09:06] We sort of use ethnographic literature and various law enforcement reports to try and understand this, but it seems fairly clear that we see that there was an influx of powder cocaine and then the introduction of crack cocaine in primarily three large cities Miami, New York City and Los Angeles. And that just came about because there were various trafficking groups that were operating in those cities. They all had port access. And so these kind of documented violence happening in those places, you know, slightly earlier than they were what's going on in the rest of the United States.

Tim [00:09:47] As best as we can tell, it just slowly spread across the US based on proximity to those three major cities and also the sought - the potential size of the market. We have a way to type when we think crack cocaine arrived in different cities and I'm sure we'll talk about in a little while. But when we use that measure and then we try and work out what's correlated with that measure, we find that the two major, the two strongest correlations are proximity to one of these three cities, Miami, New York City and Los Angeles and also population size and lots of other things don't seem to help explain it, so poverty rates, preexisting violence, these sort of things don't seem to account for it. And again, if you look at law enforcement reports and other and other literature, people talk about, you know, we've we've made a lot of money in a particular city and we've exhausted that city. And then people get sent along the interstate to the next major city to sort of create crack houses and sort of establish a new a new market for crack cocaine.

Jennifer [00:10:59] Hmm. So you mentioned earlier that these markets were associated with higher violence than had existed in the past. Say a little bit more about why that was. What what was it about crack cocaine in these markets that we should be thinking about as affecting violent crime, both in the short term and potentially over the longer term?

Tim [00:11:19] Yeah, I think there's a couple of features. One is that gangs were centrally involved in the distribution of crack cocaine, so that they were making lots of money from crack cocaine. They were organized and they was sort of very effective in distributing crack cocaine and getting into markets.

Tim [00:11:40] And they also they had access to guns. Some of them had direct experience of violence, either in the United States or in other places. And a lot of crack

cocaine markets, they were either in these what was known as crack houses or in open and straight markets. When crack cocaine is being sold for \$2, \$3, \$5, people would set up at a street corner. And that would be a key way to to distribute crack cocaine. And so it became sort of a very literal battle for territory. So if you could if you could take a popular street corner for violence and then sort of establish property rights over that, then that would be a way to to sell a lot of crack cocaine and make good profit.

Tim [00:12:27] And then, obviously, as you know, if one side increases their level of violence, then others do so in response. And then after a while, if there's just a general elevated level of violence, people are even not directly involved in the crack cocaine markets start to increase their likelihood of carrying guns they use of guns. And so that seems to be the way that crack cocaine and the markets themselves and the profits associated with them led to this sort of elevated violence where sort of most clearly see it with just sort of enormous increases in murder rates in particular locations.

Jennifer [00:13:06] Yeah. So to foreshadow a little bit, the argument you guys are going to be making here is that essentially this shifted us to a new equilibrium where it's more normal to carry a gun, seemed more necessary to carry a gun. And then once you're in that equilibrium, it's hard to shift out of it again.

Tim [00:13:21] Yeah.

Jennifer [00:13:22] Yeah.

Tim [00:13:22] So sometimes we talk about violence and it's we we kind of it's hard to know.

Tim [00:13:28] I mean, is this what are the races this important? One thing we do in the in the 2016 paper to just sort of document how waiting for this violence was, we go through an exercise where we say, if you're a 15 year old black male and you're looking at people slightly older than you in your county as a way of kind of estimating your risk of dying. And so the idea would be you're a 15 year old, you look at what's the risk of dying at age 16 among young black males at age 17, age 18, and so on and you take all that that all the way through to 30. Then in some cities, in some counties, we see that if you base your risk of dying on that, then you would say in the early 1980s, some areas it was around kind of three or 4%. So one in three chance of dying by the age of 30, which is enormous. So for almost every other demographic group. So if you do this similar calculation for white males, black females and white females, then you get an estimate well under 1%. So it's already quite high for black males in the early 1980s as crack cocaine comes in throughout the eighties. And then sort of these problems peak in the early 1990s. In some cities, this gets up to 14, 15%. And so so if you're just looking around and saying, what is going on in my community and what does that mean about my chance of dying? Then you get to these sort of incredibly high one in six, one in seven chance of of dying and things ultimately drop away. And so the sort of few people I think literally face that that risk between 15 and 30, but it really highlights how meaningful this was.

Tim [00:15:18] So it's a higher risk than if you're a soldier in World War One or World War Two. It's kind of on a similar order to when we think about the mortality rates of AIDS in Africa at the peak of the AIDS epidemic. And so that's just a really highlight that that we're talking about something that's sort of really serious and really kind of really visible and really meaningful to a lot of people in in a lot of young black males.

Jennifer [00:15:46] Yeah. So tell us a little bit more about what we'd known about the effects of the crack cocaine epidemic before this paper. You all had previous work. So tell us more about that paper, but also other work in this area.

Tim [00:15:58] I mean, it's been well documented. I think that there's been a lot of violence and a lot of problems. And, I mean, there's an enormous amount of really great work by economists and criminologists and ethnographers and other social scientists in terms of the sort of some of the key economics literature. Jeff Grogger and Michael Willis have a nice paper published in 2000 documenting how urban crime rates were elevated by the crack cocaine epidemic. Roland Fryer, Paul Heaton, Steven Levitt and Kevin Murphy, they do something where they develop a crack index. They sort of look at a host of potential proxy indicators and they document huge increases in black homicide and also adverse outcomes in a range of other problems.

Tim [00:16:48] As you mentioned, we have this work where we look at the black white gap in educational attainment and we essentially argue in that paper that the crack cocaine epidemic, the changing fortunes, particularly of young black males in terms of mortality rates, increased incarceration and just kind of general changes in that in the sort of the the length, the potential length of their life and the quality of their lives is actually probably a really important reason for why high school graduation rates for black males actually declined in the very late 1980s, early 1990s.

Tim [00:17:31] And that's after a period of a lot of progress. And so there was there was a lot of convergence between black and white high school graduation rates. Up until then, the progress stalled. And we argue in that paper that we should be thinking about one of the consequences of the crack cocaine epidemic as being a key reason for that stalled progress.

Jennifer [00:17:51] So measuring the effect of this big historical episode, there's this crack cocaine epidemic might sound like it's straightforward, but it isn't. So. So what are the main hurdles that researchers need to overcome in order to measure the effects of these events on homicide, as you do in this paper, and particularly gun violence or gun homicide?

Tim [00:18:13] Yeah. I mean, this is an area where there's kind of enormous data limitations and also lots of concerns about various correlations, underlying correlations going on that are very difficult to rule out. And so one of the one of the challenges is to work is to sort of come up with a method for deciding when crack cocaine likely arrived in different locations. And there's been a number of approaches to that. Jeff Grogger and Michael Willis, the paper I referenced before, if, for example, they surveyed police chiefs in a number of major cities asking them when they thought crack cocaine arrived. They also did something turn to looking at emergency department activity around around drugs. Roland Fryer and and coauthors develop this crack index. What we do in our paper is we look at cocaine related causes of death. So one one challenge is that until we're well into the crack cocaine epidemic, in a lot of survey data, there's actually no distinction made between different types of cocaine. So you don't necessarily know whether something is powder cocaine or crack cocaine.

Tim [00:19:26] But in 1980, there were only about 8 to 10 cocaine related causes of death across the entire United States. And it rose from there over the next couple of decades. And so what we do is we say when we say a couple of years in a row of cocaine related deaths, then we're going to assume that that is sort of identifying that crack cocaine has arrived. Given that powder cocaine is, and changing a lot over this period, it accounted for

a really small rate of deaths. And so the idea here is that it's kind of we need a nationally representative measure. And the idea is we're taking kind of physician's judgments on a death certificate. It's kind of an indicator of all that arriving. The caveat is that we're talking cocaine doesn't have a very direct effect on mortality rates. And so so we're only ever talking about a relatively small number, but we think in terms of having well measured mortality data that's available at the national level, and we made progress on that and we will do a bunch of things to show that it compares quite well with some of these other measures. And then, as you say, we would ideally want information, detailed information on guns and how they used these limited information on on legal guns. And then one of the extra challenges is that we think a lot of what's going on here is is around illicit gun use.

Jennifer [00:20:55] Yeah. And then they're also just sort of the big picture ID challenges of, you know, you don't want to just compare places where there are, you know, there are lots of crack cocaine deaths or cocaine related violence to places where that isn't existing because they this place might be different in some way. And so you're going to use the gradual emergence of crack cocaine across different cities that we talked about before as a natural experiment to measure the causal effects of these drug markets across demographic groups. So tell us a bit about your research strategy here and how you do this.

Tim [00:21:29] Yeah, so what we're sort of relying on is that crack cocaine spread from these these three initial cities, and it spread primarily based on geographic proximity and potentially population, but it wasn't sort of closely tied to it wasn't as though, you know, people who were deciding where to establish a crack cocaine market were saying, I want to go to a place where I believe there's a high propensity for violence or where there's kind of high existing levels of violence. And so we what we rely on is that we get these gradual spread of crack cocaine across the US. And the way to think about it is, is it sort of meets it starts in the West Coast, in Los Angeles, it's starting on the East Coast in Miami and New York. And then over time, these expansions are kind of mating somewhere in the middle. And so when we're going to use the timing and so the ones the locations that get crack cocaine are kind of serving as a as the kind of the comparison group, as they're giving the counterfactual trends for places that already have crack cocaine.

Tim [00:22:39] And then another thing that we do in this paper is we say we think that older black males and by older here I'm talking about black males aged 35 and over that we think that they're a good comparison group for younger black males. And the older black males we don't think are directly treated by the violence around the crack cocaine market or strongly treated.

Tim [00:23:02] And so they're going to provide their murder rates are going to provide information about what the crack cocaine and what the murder rates of younger black males would have looked like absent the the crack cocaine epidemic. And so it's kind of those two features that we're relying on in our primary strategy to sort of think about this as a way to sort of work out what sort of closely related to crack cocaine versus what else is going on over this period.

Jennifer [00:23:32] And what data are you using for all of this?

Tim [00:23:35] Our primary data are what's known as the multiple cause of death data. So this is a compilation of death certificates that's managed by by the CDC with the help of vital statistics bureaus of the states. They compile and explain their death certificates

across the US, hold them in a consistent way. We have information on antecedents, age, sex, race, the cause of death so we can identify murders and other causes of death and bit of other information. And so that's our primary data. We also use some other data, and probably the other main data we use is the FBI supplemental homicide report. So this is a compilation by the FBI on that has a bit more information about homicides. And the and the main bit of extra information that's really helpful for us is for a large fraction of homicides. It has the characteristics of the offender. And so the multiple cause of death data, our primary data, it gives us great information on victims, but we don't know anything about who committed the murder, that the supplemental homicide reports by the FBI. That gives us more information around them.

Jennifer [00:24:51] If they got caught. I guess we could say.

Tim [00:24:54] Obviously, there's always a set of people who are missing and we should always be concerned about whether these kind of measurement issues that vary with something like this.

Tim [00:25:05] We see kind of broadly similar fractions of reports over this period. And so we essentially think that there's some missing information. But as long as that kind of missing information stays sort of fairly proportional to what's what other changes are going on, then we should still be able to use that in an informative way.

Jennifer [00:25:26] Yeah, there are always caveats with crime data though.

Tim [00:25:30] And especially in this area, you have a lot of incredible guests on who I think this paper in terms of the quality of the data and the precision of the estimates and sort of how convincing the empirical strategy is, I would be comfortable saying that you would have many more guests on so a much better on on all of those fronts. But what I would say is that we're talking about a really important social problem and social issue. And so our approach with this paper and the other paper and even some of my other work is there's lots of limitations are the limitations so substantial that the question I ask myself is are the limitation so substantial that we can't learn anything or we can't make progress. And what I think and I think what my coauthors would agree with is given the importance, we actually can make some progress in this area. So that's that's just to sort of say, we know from the outset is some huge measurement issues here. But we think that this is important enough that we should be spending some time and attention on it.

Jennifer [00:26:35] I appreciate all those careful caveats, but do you think you're being a bit too modest? I think you guys do make a compelling case here. I think so.

Tim [00:26:45] Thank you.

Jennifer [00:26:45] And so, yeah. Let's let's keep digging into it.

Jennifer [00:26:48] Sure. Okay. So those are the data. So what are the outcome measures you're most interested in here?

Tim [00:26:53] The main thing we focus on our murder rates, we pretty quickly kind of drill down into sort of murder rates for specific demographic groups. So we conditioned on sex, race and age when we do that. We also for some subsequent exercises, we look at some other causes of death. And we also, as I said, look at offenders and sometimes how the offenders knew the victims. But really, our main outcome measure is what's going on in

terms of murder rates, both before the arrival of crack cocaine markets and then subsequently. And what we're going to do is we're going to try and follow murder rates for up to 17 years after crack cocaine markets emerged.

Jennifer [00:27:34] Yeah, so there are lots of graphs in this paper which I wish we could show listeners, but we'll have to just tell them to go look for themselves.

Tim [00:27:42] Yeah.

Jennifer [00:27:42] Okay. So let's talk about the results. What do you find is the effect of crack cocaine on homicide rates across these various groups?

Tim [00:27:50] So the main thing we were focusing on when we report our main results is we're looking primarily at what's going on among 15 to 24 year olds because they're the ones with the big changes and relative to older comparison groups. So firstly, if we look at black males, there's a huge increase and there were more than doubling of or approximate doubling of of the murder rates in the in the first few years of the crack cocaine markets average. And then that sort of declines slightly, but only slightly. So 17 years after we estimate that they murder rates relative to these older black males, these black males aged 35 and over are still 70% higher than they would have been without crack cocaine.

Tim [00:28:37] Then if we look at white males, black females and white females, we actually see elevated murder rates after crack cocaine for white males and the black females. We don't see anything, any sort of meaningful changes for white females, but for white males, we see this kind of we see some persistence, but the underlying murder rates are much lower. So the overall change is about an order of magnitude lower. So it's about 1/10 the size of what's going on for younger black males and then for black females. We see this elevation in the years after crack cocaine arrived, but then by about ten years after, we see sort of the murder rate sort of approximately returned to baseline. So that's the kind of the the main result. In terms of another way to sort of frame out sort of the effect on younger black males is that we estimate that even sort of now, many years after the crack cocaine epidemic has subsided, this kind of persistence in homicide rates among young black males, it can account for about 1/10 of the life expectancy gap between white males and black males. And so it's kind of it's not explaining everything but is explaining kind of a meaningful amount of that gap.

Jennifer [00:29:57] Yeah. So all of the results you just described are, you know, relative to this older black male comparison group, which you mentioned in general there, I think you said that there isn't much going on for them, but it is just striking. It's one highlight how striking it is to look at the graphs and realize, yeah, there's just no effect on that group. And so they really are I think if people just heard that that's your comparison group, they might be worried about it.

Tim [00:30:22] Yeah.

Jennifer [00:30:23] Because they might think, well, you know, they might be affected here too. But I think when you look at the graphs, it's like, oh no, they're not affected. They are actually a really good comparison group here. So yeah, yeah.

Tim [00:30:33] Just to be sort of be precise. I mean, what we're doing in each of these exercises is we're comparing so for white males, we're comparing them to older white males, but you're right. So I mean, the main takeaway is we also do exercises where we

essentially just look at is there a kind of a visible change in the outcomes of of older black males. After crack cocaine arrived and we don't see it. So that kind of gives us some comfort that that's a group that is not getting kind of at least observable, be affected by the crack cocaine epidemic. One thing to keep in mind is, you know, to the extent that if that was true, it would actually kind of bias our results downward. So the true results would actually be higher than what we're estimating. Just to be clear, I don't think that's the case. I'm not I'm not making an argument that the true results are actually higher. But in that sense so even if you have some concerns around that and hopefully if you're for those who read the paper, they that they find it fairly convincing. But even if you did, then you would still say, look, these are really large estimates, these are really meaningful estimates just because of the implications that it has for the analysis.

Jennifer [00:31:50] Okay. So that's the main result that basically young black males are shifted to this new equilibrium with a higher murder rate after crack cocaine enters their city. You then do a bunch of other stuff to try to dig into potential mechanisms a bit, particularly to build the case that this is the result of an increase in gun possession among this age group. So tell us a bit about what you do here and then tell us what you find.

Tim [00:32:17] Sure. So something that that's interesting in and we documented in the in the paper, but I we reference other work. And I think for people interested, it would be great to sort of go go and read some of the other work, but there is this kind of question about like how in someone who is aged 15 to 24 in 1990, by 2010, they they're 20 years older. And how is it that sort of drug guns get sort of transferred to younger people? And there's a bunch of ethnographic and criminology studies that sort of document that the guns are very long lasting, that they are kind of transferred down through families, particularly as people and frames, particularly as people get into a sort of high risk period. So I think that's that's one thing to sort of start out with, like, what do we think is the mechanism here? We think it's that sort of more guns go into a community and now is sort of it is a high likelihood that they're going to be used by younger, younger males in that community. And so that's kind of that's something important to keep in mind. And then what do we do empirically to just sort of mount the argument that that gun possession is is sort of playing a role here?

Tim [00:33:33] One is that we look at we look at offending information on who's committing these murders. And even though young white males and young black females experience this elevated murder rates after the arrival of crack cocaine. When you you're focusing on offenders, the rise in offenses is nearly entirely coming from younger black males. So just an interesting statistic there is that the share of all offending of all, so where where we can identify who committed a murder, then they get identified. The fraction of the time that they're identified goes from 20% to 33% in the six years after crack cocaine arrived. So they go from accounting for one fifth of all murders to one third of all murders. And something to keep in mind is at a population level they account for about 1% of the entire US population. So that's kind of that's one thing that is it seems as though there's just this enormous increase in gang related homicides.

Tim [00:34:38] The second thing is that we document these are increasing murders and gun related murders that aren't directly related to crack cocaine markets. So things like murders of family members and intimate partners for young black males, there's kind of this huge increase in the murder rates for those types of murders, as well as things that we might think about as being more likely to be involved with crack cocaine. And then the third thing is we look at the fraction of suicides that involve guns, and that's been used by a number of researchers as a measure of gun possession. And so I think most prominently

within sort of the economics, literature Phil Cook and Jens Ludwig have used that to try and as a proxy measure for the gun possession. And we find that if we use that as a measure, then there was in places that had crack cocaine, places after crack cocaine had much higher share of suicides being related to gun related suicides. And there was no change in non-gun related suicides. And so the idea there is that is more guns in the community, that's more guns in homes. And so people are just more likely to use a gun when they're attempting a suicide.

Tim [00:35:53] And so that's what we that's what we see now in our paper and in our analysis. We do a bit more there to sort of look at places, you know, the amount of gun suicides they had. And we just find that there's a consistent story there where the availability of guns and deaths related to guns are going up in general in places after the arrival of crack cocaine. And then that's very persistent over this long period of time.

Jennifer [00:36:21] Yeah, so persistent long after, you know, crack cocaine itself was no longer that relevant. And also in context where there's no reason to think it would be the relevant factor.

Tim [00:36:31] Sure. And also, actually, a really you know, it's not if the changes in suicide rates on as large as the changes we see for the murder rates. But that's actually an important part of the story. So if you attribute the increase in gun related suicides to crack cocaine markets as well, then that sort of amplifies this kind of gun violence story.

Jennifer [00:36:52] Yeah, that's really interesting. One other thing that you do that I found really interesting was that you consider whether local gun policies mitigated or exacerbated these effects at all. Did they?

Tim [00:37:05] So what we can do in in our analysis of what we what we do in our analysis and what we find is that adding information about local gang policies doesn't seem to affect our results. And so it's not to say that local gun policies don't have some effect, but we don't find any evidence that that they affected the trajectory of gun related violence that sort of flowed from crack cocaine markets. And so to do that, we reached out to some researchers, Michael Luca, Deepak Malhotra and Chris Poliquin, who have written a couple of very nice papers on using kind of detailed information on local gun policies, and they very generously shared their data.

Tim [00:37:48] We essentially added into our into our regression specifications as kind of additional controls. And what we see is that it doesn't change our overall results. We're getting into ones we're talking about sort of local gun policies interacting with crack cocaine, where we're getting into kind of very hard to measure areas, but at least as best we can tell is not as sort of a strong role for local gang policies.

Jennifer [00:38:16] One more depressing finding after a lot of other depressing findings.

Tim [00:38:22] Yeah, it's a kind of a valuable area, but it is very it's very sad, too, if you think if you think about sort of the implications of basically like the lived experience of of people and. Yeah, so I agree with you. It's it's it's kind of it's depressing when you when you get a result like that. But that that's given the measurement issues that sort of as best we can tell what we find.

Jennifer [00:38:48] So what are the policy implications of all of this? Which should policymakers and practitioners take away from your results?

Tim [00:38:55] I would say I primarily work on drug epidemics and I have interests around drug epidemics, and so I primarily think about the policy implications as in those terms. And so what I would say there is that we're identifying a set of really kind of meaningful and large costs of the crack cocaine epidemic that, you know, that may be present whenever we see this kind of uptick in violence. And so what does that mean? It means that, you know, once you crack once the crack cocaine epidemic subsided, that we shouldn't think that these communities are kind of back to normal. So the idea here when we when we're talking about gun violence is that if you have elevated amounts of violence, it changes people's expectations.

Tim [00:39:46] It potentially shifts us to a new equilibrium. And then we would have to we have to think about ways to sort of adding more resources, adding more controls, more policies that that maybe sort of take us back to a lower level of violence and just a better when people's expectations about their need to use guns and the likelihood of harm coming from someone else with a gun is just at a much lower level. I think there's probably a lot of kind of potential implications to think about, you know, illegal guns and gun policy, but I'm just kind of wasting the weeds in that area. And so I just feel I feel less comfortable sort of being having any explicit policy recommendations there except where where we're pointing to sort of a really kind of long lasting harms on particular groups that haven't been documented previously.

Jennifer [00:40:42] Are there any other papers related to this topic that have come out since you all first started working on this study?

Tim [00:40:48] So we can think about this sort of work on crack cocaine epidemics, which are kind of drug epidemics generally. I mean, there's an enormous amount of work I think, now coming out about the opioid crisis. So maybe we can talk about that briefly in a minute. There is some interesting work of trying to understand sort of other potential explanations. So Lena Edlund and Cecilia Machado have had something around the role of cell phones and sort of that as a way to the growing availability of cell phones and and how that changed the what was going on in drug markets and how that potentially sort of reduced violence through the 1990s. Helen Bartley and Jeff Williams have had some work on the role of gun supply again to sort of understand what was going on with violence over this period.

[00:41:41] Mike Makowsky and Patrick Warren have some, some interesting work from an earlier period thinking about firearms and violence under Jim Crow. And then Takuma Kamada has some stuff around the crack cocaine epidemic and sort of understanding the implications for within city migration. And actually, I was just recently touring, I went to Belfast and I made a post up there about Jahan Shahee. One of the nice things about getting out and talking to people is that you find that people are actually finding a use for your things that you wouldn't otherwise necessarily be aware of. He and coauthors talk about how a measure of when crack cocaine arrived and they used it to understand how how illicit drug markets potentially affect public sector corruption. Focusing in on California. And so, I mean, there's a lot of interesting work. But that said, I think this it's interesting that we're talking 20, 30 years after the crack cocaine epidemic. And I would argue we we understand sort of relatively little about sort of the overall implications and how to prevent future epidemics. And that's not true just for the crack cocaine epidemic. It's kind of we make some progress on this. But I actually think that, you know, as I said, a great work, but there's a lot more work that can be done.

Jennifer [00:43:04] Yeah. One note on the opioid epidemic, I do think that the good news there is that at least my understanding is the opioid epidemic has not resulted in these increases in violence in the same way.

Tim [00:43:15] Yeah.

Jennifer [00:43:16] I mean, just for various reasons, the markets, they're just very different. Is that right?

Tim [00:43:19] Yeah, I think that's right. We certainly haven't seen the the sort of market related violence that we saw with the crack cocaine epidemic.

Tim [00:43:29] I mean, the the kind of the largest and most obvious cost with the opioid epidemic is it's just sort of the huge number of overdoses. And so one of the challenges of opioids is there's a much more direct link between opioid use and mortality risk than what we generally find for cocaine. So I agree that the kind of the violence component has been you know, the lack of it has been good.

Jennifer [00:43:58] Mm hmm.

Tim [00:43:58] With the caveat that everything else is pretty miserable.

Jennifer [00:44:02] There's plenty of bad news as well.

Tim [00:44:04] Yeah. And one of the challenges, I think, is that these epidemics come along in different countries every few years, and they they start in particular ways and they end in particular ways. And it's really hard to sort of take out definitive lessons. But I still think that we could, you know, like we it would be nice to know. Well, the reason why the opioid epidemic is different to the crack cocaine epidemic is for these three reasons, because we understand the crack cocaine epidemic really well. And I don't think even paying attention across a number of fields and a much broader literature, I personally don't think that we're wearing that sort of position where we where we can be very concrete about sort of what's going on from one epidemic to the next.

Jennifer [00:44:55] So speaking of how much we don't know, what do you see as the the main research frontier here? What are the next big questions in this area that you and others will be thinking about in the years ahead?

Tim [00:45:07] Yeah, I'm doing some work on the opioid epidemics and we probably have some more things we might explore around the crack cocaine epidemic. Most immediately, though, I'm working on looking at a heroin epidemic in Australia with Kevin Schnepel, who I believe has been on your show before.

[00:45:27] I'm also doing some work with Ben Hansen and what I think is also been on before. So Will Homey around kind of fentanyl smuggling and understanding that. And so our biggest knowledge gaps are around these kind of really hard drugs. So things like fentanyl, heroin, powder cocaine, crack cocaine, methamphetamine, they're the ones that are associated with really serious harms. And we don't know a lot about the consequences and we don't know a lot about the policies. I actually just wrote a Hambell chapter last year with Rosalie Pacula, who is a fantastic researcher in this area. And what became clear as we we were doing that is that there's kind of lots of interesting features and there's actually an enormous amount of interesting research in this area. But this actually is just kind of so

many fronts on which we could potentially learn things that are valuable. And it's not to say that understanding prescription opioids or understanding marijuana markets are not important. But I think as we get into these kind of these peaks of certain drug epidemics, you know, in the opioid epidemic at the moment, the vast majority of fentanyl and then heroin is the real problem. I think naturally we have a lot of measurement issues there, and I wouldn't necessarily advise kind of young researchers to kind of hang their hat on such a tricky, such a tricky field. But I just think there's kind of enormous knowledge gaps. And I think I think as a community, as these kind of as a community state is always hard. But but it would be great if maybe ten years from now, the economists had just sort of contributed a deeper appreciation to understanding how epidemics come about, what to do when they happen, and just how much policy resources should we be putting in.

Tim [00:47:18] My sense is that we just kind of under-investing this stuff enormously and that there is kind of all these long term implications that aren't counted by policymakers and haven't been well documented.

Jennifer [00:47:30] My guest today has been Tim Moore from Purdue University. Tim, thank you so much for talking with me.

Jennifer [00:47:36] Thank you. I really appreciate the opportunity to talk about this paper.

Jennifer [00:47:45] You can find links to all the research we discussed 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 Emergent Ventures for supporting the show and thanks also to our patrons, 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 assistance 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.