Probable Causation, Episode 44: Arianna Ornaghi

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.

Jennifer [00:00:19] My guest this week is Arianna Ornaghi. Arianna is a British Academy Postdoctoral Research Fellow at the University of Warwick. Arianna, welcome to the show.

Arianna [00:00:28] Thanks for having me.

Jennifer [00:00:30] Today, we're going to talk about your research on how local news coverage of crime affects police behavior. But before we get into that, could you tell us about your research expertize and how you became interested in this topic?

Arianna [00:00:42] Of course. So very broadly I'm an Applied Microeconomist, but I focus in particular in empirical political economy. So a big part of my work so far is we looked at what forces shape and influence the behavior of public officials. And in particular, I spent some time looking at judges and police officers. In one of my earlier papers, what I did is I try to understand the effect of reforms that reduce the controls that mayor had over the hiring and firing of police officers. And that paper studied municipal police departments in the 1970s and exploited mandates for these reforms for municipalities above a certain population threshold. And what I found was that kind of reducing the control that politicians had over the hiring and firing of police officers decreased property crime rates and increased violent crime clearance rates. But basically, after - while I was working on that project, I started becoming more and more interested in thinking about police departments as an organization, and in particular thinking how this organization really interacts with broader forces in civil society. I was especially interested in politics, but also the media. So this is basically how I started thinking about this project, which became kind of more concrete - that became a concrete project as I met my coauthor Nicola. And he had done some earlier work on the effect of news coverage of crime on crime perceptions in Italy. And so I was very interested in these questions as well. And so basically we started talking about this and we started developing the project from there.

Jennifer [00:02:12] So the paper we're going to talk about today is titled "Who Watches the Watchmen? Local News and Police Behavior in the United States." It's coauthored with Nicola Mastrorocco. Am I getting that right?

Arianna [00:02:24] Yes.

Jennifer [00:02:24] Okay, good. So my first question is big picture here. Why might local news coverage affect policing outcomes? What are the potential mechanisms you have in mind?

Arianna [00:02:33] So we started from kind of the general understanding that the media influences the behavior of public officials. And there exists a kind of a long tradition in the social sciences more generally, in economics as well, that has really tried to make this point. And generally, we think that the media or news coverage more specifically of local events and of public officials might impact their behavior through two main mechanisms. On the one hand, the media really provides information to the public about what the public officials are doing. And so there is this monitoring channel that affects public officials accountability. And on the other hand, there's also evidence that really what news the

media decides to cover really influences individuals perceptions and beliefs. What this means is that potentially this can also translate into demand for specific policies. And public officials might also be responding to this. So as a starting point, based on this broader literature, we can think that the news might be important for influencing the police as well. And so these were basically the two key mechanism that we had in mind when we started thinking about this project.

Arianna [00:03:35] But actually thinking about kind of the relationship between the news and police a little bit more is actually particularly interesting. And this is because a lot of what local media talks about, the local news talks about, is crime and crime is clearly very directly related to perceptions that people have about what the police are doing and the police themselves. What this suggests is the local news may be especially relevant for monitoring on the police and influencing individuals perception of crime. And we think that this latter channel is very likely to be at play here. This is because we also know - in general we think that crime perceptions are very much influences - are very much influenced by news coverage of crime. And this is even more so than how they're influenced by actual crime rates. So definitely this idea that the news by matter for public opinion and for what the police are doing was definitely there.

Arianna [00:04:25] Now, in addition to this, in addition of what we can expect based on the broader literature on the effect of media on public officials, there are also additional mechanisms that could be at play at here and influence, in particular the proxy for police behavior that we use, which are clearance rates. So, for example, potential ways in which this could happen is through community cooperation and tips that come from the public once they are exposed to specific crime incidents. Or there could also be a direct effect on criminal's behavior as well.

Jennifer [00:04:55] And just to clarify for listeners, clearance rates are what?

Arianna [00:04:59] Sure. So clearance rates are defined as total number of crimes that are cleared by the police over total crimes. And for a crime to be cleared, in general, it has to be the case that an individual has been arrested, charged, and turned over for prosecution or kind of an individual responsible for the crime has been identified but cannot be directly arrested. So you can roughly think of them as arrest rates, although they're not 100% precise.

Jennifer [00:05:25] Yeah, as in everything in crime data, it's complicated, but it's sort of a proxy for how many crimes they're solving.

Arianna [00:05:31] Yes.

Jennifer [00:05:32] Okay, so before this study, what did we know about whether and how much local news coverage matters?

Arianna [00:05:38] So in general, as I kind of just briefly mentioned, there is this existing kind of broad literature on the effects of media on the behavior of public officials. So there is a large set of papers that really show that the information that is provided by the media on what public officials are doing is really important to facilitate the monitoring of these public officials and therefore their accountability to the public and to the local citizens they serve. Here I'm thinking, for example, about traditional papers that really study kind of the news coverage of politicians on how much they respond to their constituencies. And there are kind of a classic papers that have done this for Congress. So and this is true generally

for Congress or for higher level of the political system, but there's recent evidence that has really shown that the kind of local news is very key in this. And this is because if local news is not talking about the local officials, there's not that much information that that the public can get on them. Whereas if you're thinking about congressmen, there are multiple media sources that are going to be talking about them. And so local media really is important, and local news in particular, is really important for providing voters with information about kind of these more local candidates.

Arianna [00:06:48] And, for example, there's some interesting works that are shown that this information allows then the voters to separate - to evaluate the candidates separately for kind of their national or partisan assessment of them in general. Now, papers along these lines of how much information and monitoring matters have also been written in the criminal justice setting. Also in this, there's a very classic example of a paper written by Lim, Snyder, and Stromberg that shows how newspaper coverage of trial courts really influences the sentencing decisions for certain types of judges. In addition to this, and even this is not on local news, there is some evidence that media content matters for what judges are doing. And for example, there's a very interesting recent paper by Elliot Ash and Michael Poyker that look at the effect of Fox News on sentencing decisions. And I find this paper especially interesting because it really highlights kind of the second mechanism that I talked about before, and that is that what news the media cover really matters for perceptions, and this perception might feedback into what the public officials are doing. And they provide some suggestive evidence along this line. And similarly, there are kind of additional papers in this direction. There is interesting work by Ouss and Phillippe that really show, for example, how crime coverage of crime influences what juries decide in France.

Jennifer [00:08:06] And since you're particularly focused here on police behavior, what did we know about how oversight of any kind, I guess, affects what police do on the job?

Arianna [00:08:16] So this is a very interesting, and I think it's a very timely question. And in fact, especially in recent years, there's been an increase in the amount of research that has been devoted to this type of question, really trying to understand how one external monitoring and local oversight really affects what the police are doing. So, for example, a lot of this work has really tried to understand whether the so-called Ferguson effect is happening in real life. And the idea of the Ferguson effect is that an increase in scrutiny, especially following episodes of police misconduct or police officers induced fatality, potentially affects police behavior. And in particular, it does so by reducing the amount of discretion in police activities that these police officers are doing.

Arianna [00:09:01] So there have been quite a few papers that have looked at these recently. I'm thinking, for example, of papers that study how police behavior really reacts to increase in self monitoring and public monitoring. There's a recent paper by Rivera and Ba that does this studying the Chicago Police Department. And what is very interesting in this paper is they find very different effects of self monitoring that comes from the police themselves. So that comes through union directives versus public monitoring that comes from the outside. And I think this is a theme that is going to become clear also as I talk through my results. And that is the fact that different type of monitoring and different type of oversight can potentially have very different effects. Also, a very recent paper is one by Premkumar, and he's really looking at what happens after an increase in media attention following these high profile officer involved fatalities. And he finds a negative effect on arrests for less serious crimes, which is kind of in this direction of potentially there being kind of some empirical evidence in favor of the Ferguson effect.

Arianna [00:10:06] And finally, the last paper that I kind of wanted to mention, because I think it's very relevant to this question, is a recent work by Devi and Fryer that has looked at the effect of federal and state pattern of practice investigation. But basically what they find is that this type of investigation can have different effects, depending on kind of the specific setting that they have been in. And in particular, if there's been additional attention that is being already placed on the police departments because of episodes of police misconduct and police violence. So in general, what these paper really point to - also, as I mentioned before, some of them quite explicitly, is really that the type of attention and scrutiny really matters. And this is going to be very much in line with what we find later in our paper and the results I'm going to be talking about.

Jennifer [00:10:52] So what are the hurdles that researchers like yourselves have to overcome in order to measure the causal effects of local news coverage on outcomes like police behavior? Are the challenges mostly related to getting the right data or is it about getting identification and natural experiments or is it both?

Arianna [00:11:08] So it's a little bit of both. So definitely it kind of - you know, when we started thinking about the project, the main challenge that we faced was really trying to get exogenous variation in news coverage of local crime. And we think that this is really important to answer the question because you could imagine a scenario in which maybe clearance rates are declining, and the media starts talking about - to the police and starts talking about clearance rates more. And so this could really, you know, if we just looked at the correlation between the two, we could really identify a direction which goes in the opposite direction. Instead, what we really wanted to do was to identify causality, going from news coverage of local crime to the police. Now, the way in which we do this, and I'm going to talk about it more as we - as I talk about the paper, is that we use a shock to news coverage of local crime that is really related to the supply side. And in particular, we are going to be using acquisitions of local TV stations by a large broadcast group. Sinclair.

Arianna [00:12:06] Now, as I mentioned earlier, an additional challenge was also finding the right data. And to explore - kind of to give a proper answer, I think, to the question, we also really want you to document the change in content. And in order to be able to do that, you know, we had to collect kind of a large data set of local news that would really allow us to understand how news coverage of crime was changing. Was it changing because they were talking arrest less or they were talking about a crime less? And we think that kind of being able to do so really adds a lot of nuances to what we are doing in this paper.

Jennifer [00:12:38] So as you mentioned, you use the acquisitions of local television news stations by the Sinclair Media Company as a natural experiment. So give us a little bit more context here. How many new stations did Sinclair buy over this time period? What was the time period and where were they located?

Arianna [00:12:53] Sure. So we are studying local TV stations and local TV news in particular. And if you think about the local TV market in the US in the last 10 years, the clear trend has been one of increased concentration. And this trend in increased concentration has really been driven by the emergence of large broadcast group that own a large number of local TV stations. Now, Sinclair has been the most active player in this sense. We are looking in particular at big four stations. These are stations that are local, but they are affiliated to one of the four national networks. Very briefly, what that means is just that the network is a content provider. They're going to be producing some content

centrally and they're going to send it to the stations. But these stations are on their separate ownership and also they produce it, for example, their own local newscast.

Arianna [00:13:43] So if we just look at these type of stations, a Sinclair went from controlling 33 stations in the beginning of 2010 to almost 120 at the end of 2017. And this is the period that we are going to study. And to put this number in perspective, this is actually a significant share overall stations and basically Sinclair by the end of 2017 was almost reaching 40% of the US population. And this is a relevant number because it's the maximum share of the population that every single owner is allowed to reach, according to FCC regulations. Now, importantly, acquisitions were quite spread out geographically. And this is again, this is also really driven by FCC regulations that restrict the number of stations that a single owner can control in a media market. What this means is that if you are Sinclair and you're looking to expand, well, you're not going to be able to do so by buying up all the stations in a media market. But you're going to do so by entering different media markets. And so when we are thinking about a Sinclair acquisitions of these big four station, this is going to be equivalent of entering a new media market and Sinclair controlling one of the four stations.

Jennifer [00:14:50] And then so how did Sinclair change the local news coverage in the stations it bought?

Arianna [00:14:55] So based on what we knew from the beginning, and this was really based on existing evidence and anecdotal evidence as well, we expect Sinclair to affect content into two principle ways. So first of all, when Sinclair buys this station, what tends to happen is that there is a nationalization of news coverage and this really comes at the expense of local stories. So this was important for us because it was really what we thought we could use to get variation in news coverage of local crime. And this is the treatment effect and the changing content we are interested in estimating. But in addition to this, something that you want to have in mind when you're thinking about Sinclair, is that Sinclair is also a quite right leaning broadcast group. You can think of them as the Fox News Channel of local TV. And so it is also likely that when they buy a station, there is an increase in the conservative slant. And we really wanted to be able to disentangle the two changes in content. And this is something we want to be able to control for in our identification strategy.

Jennifer [00:15:55] All right. So let's talk about that strategy. How do you use these events to measure the effects of news coverage on crime?

Arianna [00:16:02] So, as I mentioned before, Sinclair expanded quite a bit in the period that we study. And this acquisition really gives us some nice variation across time and across space. We suggest that we can really use this staggereeed variation in a difference-in0differences design. However, as I just mentioned, when Sinclair acquires a station, content is going to change in multiple ways. On the one hand, there is this decline in local news coverage. That's what we are interested in. But at the same time, there's also likely to be an increase in conservative slant.

Arianna [00:16:33] Now, to answer our research question, we want to disentangle the two. And in order to do that, we look for a control group that is exposed to Sinclair's conservative slant but does not directly experience a decline in news coverage of local crime. So how do we do this? How do we identify this control group? Well, we exploit a feature of the setting. So remember, we are studying local TV stations and local TV stations are stations that - whose signal is only available within a restricted geographic

area. And this area is going to be called a media market. So by definition, really, all households in a media market have access to the same local TV stations offerings. What this means is that after Sinclair enters a media market, all municipalities that are located in this area are going to experience the overall changing content that is associated with Sinclair. However, not all municipalities are going to be equally exposed to the decline in news coverage of local crime. Now, the proxy for exposure that we use is the probability that a municipality is covered by the news at baseline. The intuition for this is that if indeed, as we expect, Sinclair decreases local news coverage, then municipalities that were very likely to appear in the news at baseline should bear the brunt of the decline. We call these covered municipalities and they are our treatment group.

Arianna [00:17:54] Now instead, municipalities that were never in the news in the first place, you know that we're not in the news before, they're also not in the news after Sinclair buys a station. And so they're really not experiencing any change in the news coverage of their crime. And therefore, they can act as our control group. And we call these non covered municipalities. So effectively, to answer our research question, we focus on the relative effect of Sinclair on cover and non covered municipalities. And this really allows us to identify the change in content we are interested in. Kind of more precisely, we implement a triple differences-in-differences specification that combines variation across time and media markets that come from the acquisitions in whether in the timing of the acquisitions themselves and this is combined with cross-sectional variation in whether a municipality is covered by the news at baseline.

Jennifer [00:18:44] And so just to reiterate your control group there. So the non covered cities or municipalities are the ones where there hadn't been crime reporting before. So basically they're going to account for any effective, just like the conservative slant that these news stations now have. So if there's a change in sort of the overall coverage to be more conservative, one might worry that that could affect police behavior on its own. But that should affect these places as well as your treated cities where they had their crime covered. And so that's going to - it's basically going to soak up any of that effect of just like the conservative viewpoint, the Sinclair changes bring, am I getting that right?

Arianna [00:19:23] Yes, absolutely. So basically, when Sinclair enters a media market both covered and not covered municipalities really see the overall change in content of Sinclair. And here we are worried especially about the conservative content, but it could be really any content change that is not municipality specific. Instead, by really looking at the relative effect of the two, what we think is really different between the two is how much they are exposed to the change in news coverage of local crime. And here probably I should - I like we're really interested in coverage of the municipalities crime itself. And so basically by focusing on the relative effect on these two, we can really identify the change in news coverage of local crime that we are interested in.

Jennifer [00:20:03] And so I think - I don't want to say the most interesting piece of the paper - one of the more interesting pieces of the paper was just how much work you all did to figure out, like, what are they actually talking about on the news? And so let's talk about the data. What data are you using to consider these questions?

Arianna [00:20:18] Sure. So for this paper, we used three main data sources. So first of all, we have the precise month in which Sinclair acquired control over a TV station's programing. And we got these from yearly company reports to shareholders. In the first part of the paper, we really tried to understand how Sinclair affects content. And in order to do this, we collected kind of a novel dataset that includes the transcript of almost 300,000

local TV newscast, and they contain almost 10 million separate stories. What this allows us to do is that it allows us to track at the weekly level the news coverage of more than 300 stations, I think more precisely 323 stations. And we'd really track them weekly from 2010 to 2017. Very briefly, and then I'm going to go back to the content data, but in order to look at what happens to clearance rates, we use data from the uniform crime reports of the FBI.

Arianna [00:21:13] Now, how do we use the content data to look at news coverage of local crime in particular? So we basically, for every story, we want to be able to do two things. So we want to be able to say - to determine the locality of this story. And we do this in a very simple way. So we just check whether the name of the municipality is mentioned in a given story and this again determines the locality. But in addition to this, we want to be able to classify stories as being about crime or not. And we do this in the following way. So we define a story to be about crime if a crime bigram appears in it. So a bigram is just like a two word combination where the two words are consecutive from each other and a crime bigram is going to be a bigram that is much more likely to appear in an external pre-tagged crime-related library than in a non crime related one. So what are the libraries that we use? Well we use the New York Times metropolitan desk articles that are about crime. As the non crime library, we use all other New York Times metropolitan desk articles, and we use the metropolitan desk articles because we wanted to be able to capture language that was appropriate to local news. And this was nice about using this library in particular was that it was easily available and also a pre-tagged corpus. So we already knew whether this library was about crime or not quite easily.

Jennifer [00:22:34] Could you give us some examples of some of these crime bigrams that you found? Like what types of phrases are showing up here in the crime stories?

Arianna [00:22:41] So we were very much reassured when we look at these crime bigrams and they all made intuitive sense for us. And so the bigrams that, for example, that we see our law enforcement, police officer, police said, second degree murder. And what we especially liked about the bigrams that we - that our procedure identifies is that they are quite general. So potential concern that you might have is that, well, of course, The New York Times is quite liberal. You can think of The New York Times as being like a liberal media source, and Sinclair is more on the conservative side. So potentially you might be worried that what is going on is just that sinclair is talking about crime in a slightly different way, and this is indeed something that is going on. But even if Sinclair is talking about crime very differently they are still likely to say police said or police officer or law enforcement when they're talking about crime. And these, I think, really speaks to our procedure being robust and not being driven by these different ideological view on crimes.

Jennifer [00:23:39] Okay. And so remind us what the outcome measures are that you're interested in here.

Arianna [00:23:44] So for the first part of the paper, where we look at content, we define an outcome which is an indicator variable equal to one. If a municipality was mentioned in a crime story by station s in week T. So by a given station in a given week. Now, in the second part of the paper where we start and think about how this affects the police, we are looking at clearance rates, which again are defined as number of crimes that are cleared by the police over total crime. So a measure of crimes that are solved by the police. Now, we think the sudden clearance rate is very interesting in this study, and this is because clearances and arrests more generally are very sensitive to the actions that they're taking in the immediate aftermath of a crime. And so they've often been using the literature to

study police effort. But in this setting in particular, they can perhaps help us understand what type of crimes the police is prioritizing. And that's why we think this study and clearances is kind of an intuitive proxy for what we want to measure.

Jennifer [00:24:45] All right. So let's talk about the results. What do you find is the effect of Sinclair's acquisition of a television station on local news coverage of crime?

Arianna [00:24:53] So our main result here is really that ownership matters for content. After Sinclair acquires the station, the station significantly decreases its coverage of local crime. In line with our intuition for the empirical strategy, the decline is especially large for municipalities that we're very likely to be covered by the news at baseline. So to be a little bit more precise, what we find is that after aquisitions, covered municipalities are 2.2 percentage points less likely to be in the news with the crime story than non covered municipalities. And these corresponds to almost 25% of the baseline mean. You may think that a 25% effect is quite large. Indeed it is, but it is in line with kind of existing evidence of how much Sinclair really nationalizes news coverage.

Arianna [00:25:43] Now, something that is very kind of - a result that I think is quite important to think about what is going on is how are other stations in the same media market reacting to Sinclair acquisitions, as well. And something that you might be really worried about, is that, you know, this has nothing that has to do with Sinclair. It just so happens that crime is really changing in these municipalities. And we know that crime rates are pretty much - they're an important determinant of news coverage of crime or perhaps the demand for local crime story is differentially changing in this covered versus non covered municipalities. And so to speak to that, what we do is that we really look at what is happening to the news coverage of local crime of stations that are in the same media market. So they are really talking about the same places, but they are not themselves acquired by Sinclair. And what we find is that the crime coverage of these municipalities is really not changing. There is really basically no effect of a Sinclair acquisition on them. And we think that this is interesting, first of all, because it reassures us that we are really picking up something that is an editorial decision on part of Sinclair. But in addition to this, it's also, you know, if we put our hats of media economists on, it's also interesting because it is showing that these stations are really not reacting to the change in content on part of Sinclair, which is perhaps not something that we were expecting beforehand.

Jennifer [00:27:08] Yeah, it is sort of interesting to think about the news coverage as sort of responding to local demand. You would sort of expect - you might expect, as an economist, for all this television stations to basically be broadcasting the same thing. So it is interesting that that doesn't happen.

Arianna [00:27:22] Yeah, and definitely I think this is kind of - this is interesting for us because I think it points to the fact that there is demand for these news coverage of local events and news coverage of local crime in particular. And basically what this points to is that if we think of the - maybe of the --- of Sinclair is that what they have is really a different business model. So they are able perhaps to, you know, to deal with the fact that maybe viewership is going down a little bit and there are some existing evidence that is consistent with some of these going on so that the Sinclair acquisitions decrease viewership a little bit. But they are able to put up with these and the potential advertising loss that come with a potentially lower viewership because they have a different business models. In particular, you know, they probably have very large economies of scale from operating part of these stations jointly.

Jennifer [00:28:11] Interesting. All right. So then the next set of results you have are looking at the effect on crime clearance rates, which is your measure of police behavior. So what do you find are the effects of Sinclair on clearance rates?

Arianna [00:28:25] So our main result is that the change in news coverage of local crime matters for policing. And our main outcome of interest to start are clearance rates for violent crimes. And what we find is that after Sinclair enters the media market, covered municipalities have a 4.5 percentage points lower violent crime clearance rate with respect to non covered municipalities. To put these numbers in perspective, the effect corresponds to almost 10% of the baseline mean.

Arianna [00:28:55] Now, importantly, our identification assumption - I haven't really talked about it, but in order to really be able to claim that we are - that we are estimating a causal effect, it really has to be the case that covered and non covered municipalities are on parallel trends, or in other words, that our non covered municipalities are a good control group. So really, they show us how the clearance rates of covered municipalities would have evolved in absence of the change in news coverage of local crime. And so in order to speak to this, what we do is that we estimate an event study specification in which we allow the effect of the Sinclair acquisition on covered and non covered municpalities to change in time since and to treatment. And what we find is that covered and non covered municipalities appear very much to be on parallel trends before the acquisition, which is very reassuring about there not being some preexisting trends that are really explaining our results.

Arianna [00:29:49] Now, something that is very interesting about this event study specification, is that they also allow us to look at the time pattern of the effect. And what we find is that the effect is fully realized in the first year after treatment, but becomes a little bit smaller over time. And I haven't mentioned this before, but what we saw in studying - in the news coverage of local crime was, again, parallel trends leading up to the acquisition, but an effect that was becoming larger over time. So what can explain this? Well, the explanation that we propose is something that has to do with the nature of these Sinclair acquisitions and in particular, the fact that these acquisitions tend to be a little bit opaque from the point of view of the viewer. When Sinclair buys a station, you know, a lot of the things that are viewed - that are obvious to the viewer stayed the same. The callsign is the same, the channel where you can find the station is the same, the news anchors are exactly the same as before, but was is changing is content. So it makes sense that there might be a little bit of inertia in how these individuals are interpreting the signal about the local crime conditions that they're getting from their favorite local TV channel. Now, instead, over time, it is possible that these viewers are going to learn about the bias in Sinclair's coverage of local crime and are going to be adjusting for it. And so, in a way, we think that these large effect that then tapers over time is consistent with these learning about the change in content on the part of the viewers.

Jennifer [00:31:18] And so you mentioned focusing on violent crime when you're looking at these effects and clearance rates. So tell us a little bit more about why you're interested in violent crime. And then I think you also look at the effects on property crime. So tell us what you find there.

Arianna [00:31:31] Very much so. So we also look at what happens to the property crime clearance rate. And what we find is that there's really no differential effect of Sinclair entry in the property crime clearance rate of covered and non covered municipalities. So how do

we explain this effect? So our explanation for these really has to do with the effect that not only local news as a very clear crime focused, they actually have a very clear violent crime focus. With our content data something that I think is really nice is that we are able to classify whether each crime story is about the violent or a property crime. And kind of very descriptively we find that about 75% of all local crime stories are about a violent crime and only about 15 to 20% are about a property crime. And the reason why these don't come up to one is because we cannot classify about 10% of this story. But I think that this script is actually mask an even starker heterogeneity that is really driven by the fact that, you know, the property crimes are actually more common than violent crimes. And so, for example, if we normalize the number of stories about a given type of crime by the number of offenses that are reported for that municipality, of the type we really see that kind of that is that the majority is even larger. And in particular, property crimes have really a negligible probability of being covered, being covered in the news. And we think that this is consistent with the changing content really being important for violent crime and not for property crime themselves.

Jennifer [00:33:09] So you do a few analyzes to try to understand the mechanisms to tell us a bit about what you do there and how you interpret those results.

Arianna [00:33:18] We propose for our findings is one that really has to do with crime perceptions and salience of crime in the public opinion. The simple story that we have in mind is one in which there are fewer stories about local crime that are showing up on the TV and the public becomes less concerned about crime. And as a result, the police find themselves operating in a political environment where there is less pressure put on them to clear violent crimes. We provide some suggestive evidence that is consistent with these mechanisms. So first of all, we show that indeed the cities of crime declines after Sinclair entry and we do this in a couple of ways. And the reason why we have to do it in a couple of ways is that unfortunately, the data to look at perceptions of crime is not great. So we are a little bit limited in what we can do. So we try to use a couple of data sources and we are very reassured that they point in the same direction. So first of all, we use Google Trends data of searches for police and crime. And we do find that after Sinclair enters the media market, the volume of searches for these two keywords decline. This is not going on for other placebo searches, such as weather or, YouTube, this is suggestive that the salience of crime going down, this analysis is wrong at the media market level. So we complement this with some survey data where people are asked about what is the most important problem that is facing the country. And crime is one of the option and consistent with our results. We also find that in common municipalities, it is less likely that individuals report crime as being one of the most important problem facing the nation with respect to non cover municipalities and again, this is very suggestive and very much in line with our story that has to do with salience of crime. Now, having said this, the second part of our story really links kind of the salience of crime to police behavior through political feedback mechanism and in order to provide some evidence of supporting this what we do is that we note that in this setting, these political feedback mechanism is especially likely. And this is because the people who are watching local news are also the ones that are kind of that are relevant for local politics and these are people over 55.

Arianna [00:35:32] So, for example, we use data from a survey that shows us that people who are about 55 are 25% more likely to watch local TV news, but they are also 50% more likely to attend local political meetings. And there's actually existing evidence on this that really highlights how kind of older people are very much relevant for these type of issues in local politics. And in line with this, what we find is that the effect is larger in municipalities that have a higher share of the population, about 55 again, this is very suggestive, but this

is in line with the story that we propose now, of course, that there could be something else that is going on. So the first alternative explanation that we consider is that the decline in news coverage of local crime might very much affect the monitoring of these police officers in order to get some sense of to what extent this is going on what we do is that we try to look at content more precisely. And in particular, we try to understand whether the decline in news coverage of local crime is driven by coverage of crime incidents or is driven by coverage of arrests. And what we find is that very much the decline is driven by a change in coverage of crime incidents and not very much of clearances or arrest more generally. And so this fact means that, you know, if we take the monitoring tunnel very to the latter, then it's maybe not as convincing because it's not that the coverage of arrest is going down. So if police officers are directly responding to this, this doesn't seem to be going on now. Of course, we kind of really we kind of really exclude that just by the fact that crime is being less certain than the news the police officers are inferring something about monitoring more generally, but we don't think the evidence is fully consistent with this.

Arianna [00:37:13] Now, the second alternative explanation that that we think could very much be behind the results is a decline in community cooperation. Now, if we think of community cooperation very broadly, I think there is there's generally an agreement that this is important for determining kind of clearances, that this is important for police investigations. There is some evidence that what really matters for community cooperation are perceptions of the police. And what is interesting is that even if perceptions of crime are very much changing, it's a little bit unclear whether perceptions of the police are changing as well. Because if anything, you're seeing less coverage about crime incidents and an equal an equal amount of coverage about the rest. So it is possible that your perception of what the police are doing is not really changing very much. And so we find that, again, that this explanation is possible, but it's not fully consistent with what we are finding. Now it is possible that there may be some effects on tips, but we don't have a we have a sense that this is an important but like quantitative limited phenomenon. Now, finally, a final alternative explanation is that there could be some direct effect on the behavior of criminals themselves. So people committing crimes and this is going to vary. I think this is very much in line with the existing work that shows how kind of violent media content potentially impacts kind of violent crime and property crimes. But we don't think that this is really going on in this setting just because it's kind of older viewers that are really the ones that are watching local TV news are really not a prime population for for criminal behavior. And to the extent that some of these that there may be some changes in criminal behavior that really go through a decreased incapacitation or deterrence effect that is derived, that is due to the lower clearance rates and we think that this is kind of part of the main effect. And so we don't really see it as an alternative explanation.

Jennifer [00:39:03] And just to elaborate on that a little bit. Yeah. So that you wouldn't necessarily expect the 55 year old plus viewer is going on committing more crime. But if you saw because clearance rates are going down, basically people are less likely to get caught if they commit a crime than that could incentivize people to commit more crime. Very like Bekker style story there.

Arianna [00:39:21] Yes, that's definitely kind of the way that we are thinking about this and kind of adding to this a little bit. So we do look at what is going on, on crime rates and in particular, we're interested in looking at what is going on, on the violent crime rates, because we really want to make sure that we are picking of something that has to do with the police and not just a change in overall crime and what we find is that there is really no differential effect, of Sinclair acquisition on violent crime rates of covered and non covered municipalities. Although what is interesting is that we do find a small increase in the drop in

property crime rates, which is, again, perhaps in line with this idea of kind of a decreased incapacitation or deterrence effect.

Jennifer [00:40:02] All right. So you conduct a whole bunch of additional checks in the paper to convince yourselves that you're interpreting your results correctly, so maybe take two or three of those and tell us a little bit about what you do and why they're helpful.

Arianna [00:40:15] Sure. So the first thing that we do is that we really want to convince ourselves that our results were not driven by some weird feature of the UCR data. So the uniform crime reports are are reports that are submitted from agencies to the FBI and then the FBI releases without doing some quality checks. And so there has been extensively literature in the economics of crime that is really showing potential pitfalls with this data. And in particular, people are really worried about the fact that sometimes you have really crazy outliers and we really wanted to ensure that this was not what was driving our effect. So in order to to talk to that, what we do in our main kind of been our main paper is that we try to identify these outliers and correct for them. And this is kind of what we do in our main analysis. But nonetheless, we try to look at as a robustness check whether, for example, winsorizing the data or identifying these outliers was potentially driving our results. And we don't find any evidence that, you know, it's just from a data perspective was very reassuring.

Arianna [00:41:20] Now, robustness check that we think is also very important. And it's more important, but also a more substantive point of view in terms of identification is the following. So, as I said before, identification really relies on the parallel trend assumption. We use even study specification to show that there are no preexisting trends in covered versus non cover municipalities relative to a Sinclair acquisition. So what this does is that it eliminates concern of something going on before the acquisition. But it could be that there may be shocks that are contemporaneous with the acquisition that affect both clearance rates and the acquisition themselves. So, for example, we might be really worried that what is going on is that Sinclair is entering media markets that are growing faster or that are not growing that fast. You can have stories going both ways. Now, what is nice about our trip of difference in difference is specification is that it allows us to control for any media market level shock and media market level, a trend that affects all municipalities in the media market at the same time. Now, you could still be worried that what is going on is not something that it has to do with the media market, but something that has to do with covered municipalities specifically and that we cannot really control for directly. But what we can do is that we can look at whether our results are robust to using only acquisitions, where Sinclair does not buy a single station but actually buys a bundle of stations by acquiring a smaller broadcast group. In these cases, we think that entry is less likely to be to be endogenous. It's less likely to be specific to what is going on in certain cities, but is just because a smaller broadcast group has gone on the market and Sinclair is able is able to buy them. And so we check whether our results are robust. So restricted to these type of acquisitions only have a very assured that they are zooming out to the broader literature.

Jennifer [00:43:16] Again, have any other papers related to this topic come out since you first started working on the study?

Arianna [00:43:21] So very much of when I was talking about all the literature on the effect of local oversight, a lot of the papers that I mentioned that actually very recent there or they all kind of came out, those working papers in 2019 or 2020. So I think that this really points points to the fact that this is a very timely issue and I think there's a lot of interest in

really trying to understand kind of how the police departments respond to oversight that comes from the broader civil society. And definitely thinking about these papers, we think that is very interesting to compare our findings with the general results that comes through this paper that sometimes increased attention that comes from the media, decreases clearance rates and in general decreases kind of police effort and what the police are doing. So what we find is different. So what we find is that if there is less media attention, you might get the same effect. And I think that what what this really points to, as I was mentioning earlier, is really the fact that the type of the type of attention to this type of oversight really matters, the type of media attention even, you know, are they talking about the police because of a scandal? And so they're talking maybe about them in negative terms, or are they just not talking about the many crime incidents that are going on in the city? And so, you know, the way that this impacts what the police are doing is very different than even how you can think of how this impacts crime perception or perceptions of the police is very different as well.

Jennifer [00:44:47] So what are the policy implications here? What should policymakers take away from your study and the other work in this area?

Arianna [00:44:53] So you have a policy implication for our paper that is that I want to talk about, because I think it's very interesting. It's perhaps a little bit less relevant for kind of a criminal justice audience. But I think that an important policy implication of our paper is really the idea that ownership matters for content and that these changes in content potentially have a have policy, have every word externalities. So this is interesting because kind of a common trend of media industries and this is not true only of local TV, but newspapers have been experiencing something very similar as well, is that there has been this increase in concentration and if this increase in concentration really changes the type of news of local news coverage that is that these media industries are providing, than we might want to take this into account when we are thinking about competition regulation, and that this is especially relevant in a context in which in the last few years there have been debates, for example, as to whether to take out some of the restrictions or concentrations that are currently being imposed on the local TV market by the FCC. So the first kind of policy implication is really that we might want to think of kind of the real world policy externalities of concentration in these media industries as part of how we think about regulation and competition in these industries. Now, in terms of kind of a more kind of something that is more related to the police, we really think that what our kind of results point to is especially taking them together with the broader literature on local oversight of the police, is really the fact that we really need to think carefully about what type of oversight is being put on the police and what are the potential unintended consequences of that and how it would be the type of monitoring or the type of attention really matters for what the police are doing.

Jennifer [00:46:40] And what's the research frontier? What are the next big questions in this area that you and others will be thinking about going forward?

Arianna [00:46:46] So very much. I think the fact that we find very different effects, depending on the type of monitor, really points to the need of really looking at mechanism and really trying to understand, you know, is it if different type of monitoring are kind of activating different mechanisms and how these explains kind of these heterogenity of results. So we think that really kind of thinking through mechanism for these is is very important. Now, more specifically, thinking about the relationship between the media, local media and the news and the police, I think there's a lot more than can be done and I think is an exciting area of research. So, for example, we have looked at clearance rates. You

can think that there may be other type of outcomes that one might want to look at. So, for example, something that would be great to look at is how does the influence, for example, police misconduct? Of course, there are strong limitations in doing that, but I think that's something that would be important to study. Also the type of kind of in terms of different types of media monitoring. So we are looking at kind of these overall changes in the in the media landscape that are kind of long lasting. They last for a few years. But you might be also interested in kind of short term shocks to coverage of crime incidents or of what the police are doing. And so from this and this is something that I think would be very interesting. I think something else and there are a couple of additional directions that I think are interesting in this broader in this broader theme. So on the one hand, I think we know quite little about how crime perceptions are formed. And this is relevant because if we think that crime perception really matter and this is partially what we think is going on in our paper, then we might really want to understand what are the determinants of perceptions of crime, whether the determinants of perceptions of the police and how these matters. And now, having said this. Another thing that we think is very interesting is to try to understand a little bit about the news coverage of crime itself. So there is kind of a communications literature in general people are seeing that certain type of crimes receive kind of a very large proportion of of news coverage. So I think it would be interesting to understand this a little bit better and a little bit more systematically. Is that really going on or what type of crimes are really driving this? And if we think that that news coverage of local crime is very important for crime perceptions, then you can really start seeing of why that would matter, why there would be something relevant to study and to understand a little bit more about.

Jennifer [00:49:15] My guest today has been Arianna Ornaghi from the University of Warwick. Arianna, thanks so much for talking with me.

Arianna [00:49:21] Thanks very much for having me. It's been it's been a pleasure.

Jennifer [00:49:29] 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 Patreon subscribers. This show is listener supported. So if you enjoy the podcast, then please consider contributing via Patreon. You can find a link on our website. Our sound engineer is Jon Kerr with production assistance from Haley Grieshaber. 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.