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The Imprisoner's Dilemma

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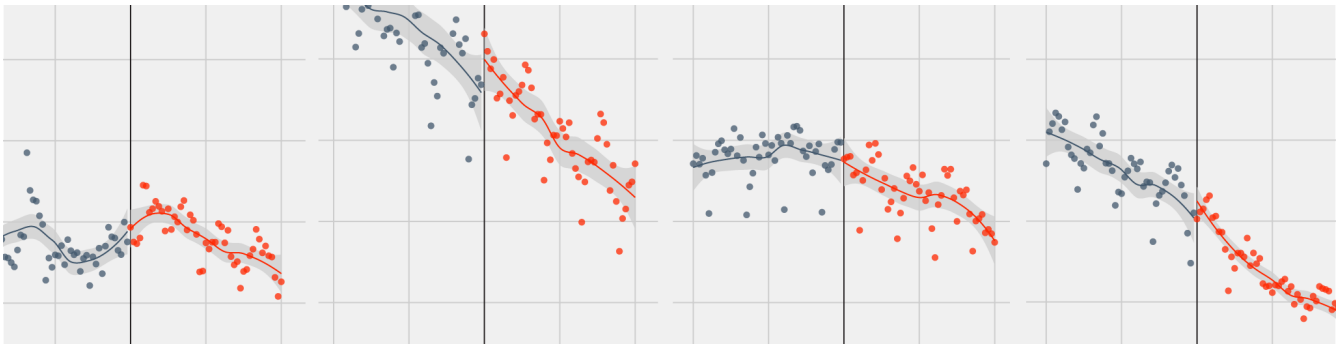


There are 2.3 million Americans in prison or jail. The U.S. has 5 percent of the world's population but 25 percent of its prisoners. One in three black men can expect to spend time in prison. There are 2.7 million minors with an incarcerated parent. The imprisonment rate has grown by more than 400 percent since 1970.

Pick a stat, any stat. They all tell you the same thing: America is really good at putting people behind bars.

It's supposed to help the country reduce crime in two ways: incapacitation — it's hard to be a habitual offender while in prison — or deterrence — people scared of prison may do their best to not end up there.

But recent research suggests that incarceration has lost its potency. A report released this week from the Brennan Center for Justice at the New York University School of Law finds that increased incarceration has had a very limited effect on crime over the past two and a half decades.

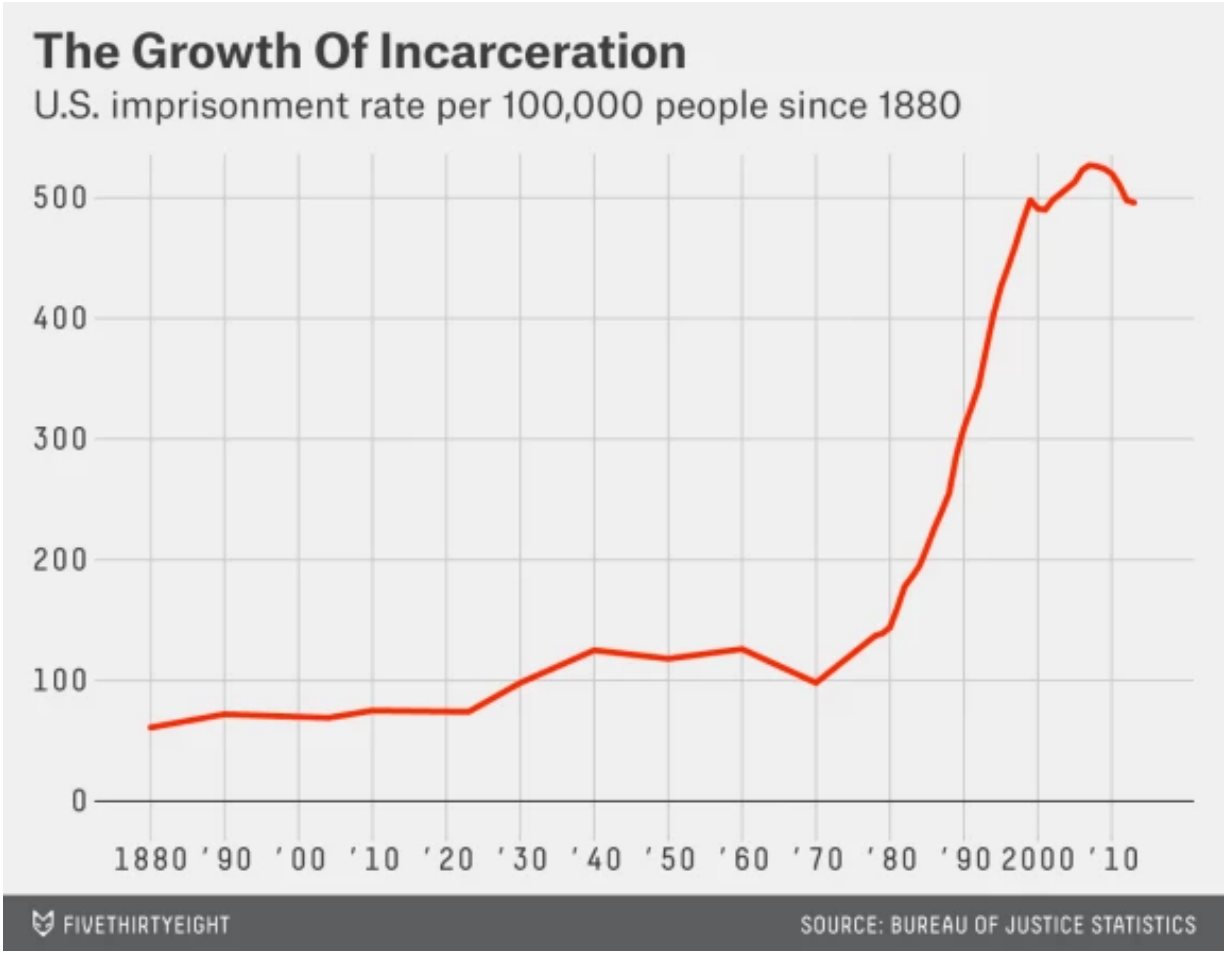
At incarceration's current elevated levels, the effect of more incarceration on crime is not statistically different than zero. It's no longer working.

(I'm an economics fellow at the Brennan Center and a co-author of the report along with lawyer Lauren-Brooke Eisen and researcher Julia Bowling.)

And yet crime has fallen. Violent crime is down 50 percent since 1990. Property crime is down 46 percent.[1] It's tempting to draw a connection there: As incarceration rose sharply, the crime rate plummeted. So one must be responsible for the other. But as you've read many times at FiveThirtyEight, correlation is not causation. According to the

data analysis, the relationship between incarceration and crime wasn't much more than a coincidence.

Here's how incarceration has changed over the past 100-plus years of U.S. history:[2]



In 1970, there were just shy of 200,000 Americans in prison. Today there are more than 1.5 million — 496 prisoners for every 100,000 people. That's more than in any developed country. According to the International Centre for Prison Studies, the imprisonment rate in Russia is 467. In the U.K., it's 148. In France, 102. In Germany, it's 76. In Japan, 50.

It's because of these elevated levels that we're likely to see diminishing returns. If we assume — fairly![3] — that the criminal justice system tends to incarcerate the worst offenders first, it becomes clear why. Once the worst offenders are in prison, each additional prisoner will yield less benefit in the form of reduced crime. Increased incarceration — and its incapacitation effect — loses its bite. And at its world-historic level, it's not surprising that it would've lost nearly all of it.

The Brennan Center report is hardly the first to recognize this possibility. Few have quantified it, though,[4] as Steven Levitt pointed out in a 2004 paper. "Although the elasticity of crime with respect to imprisonment builds in some declining marginal

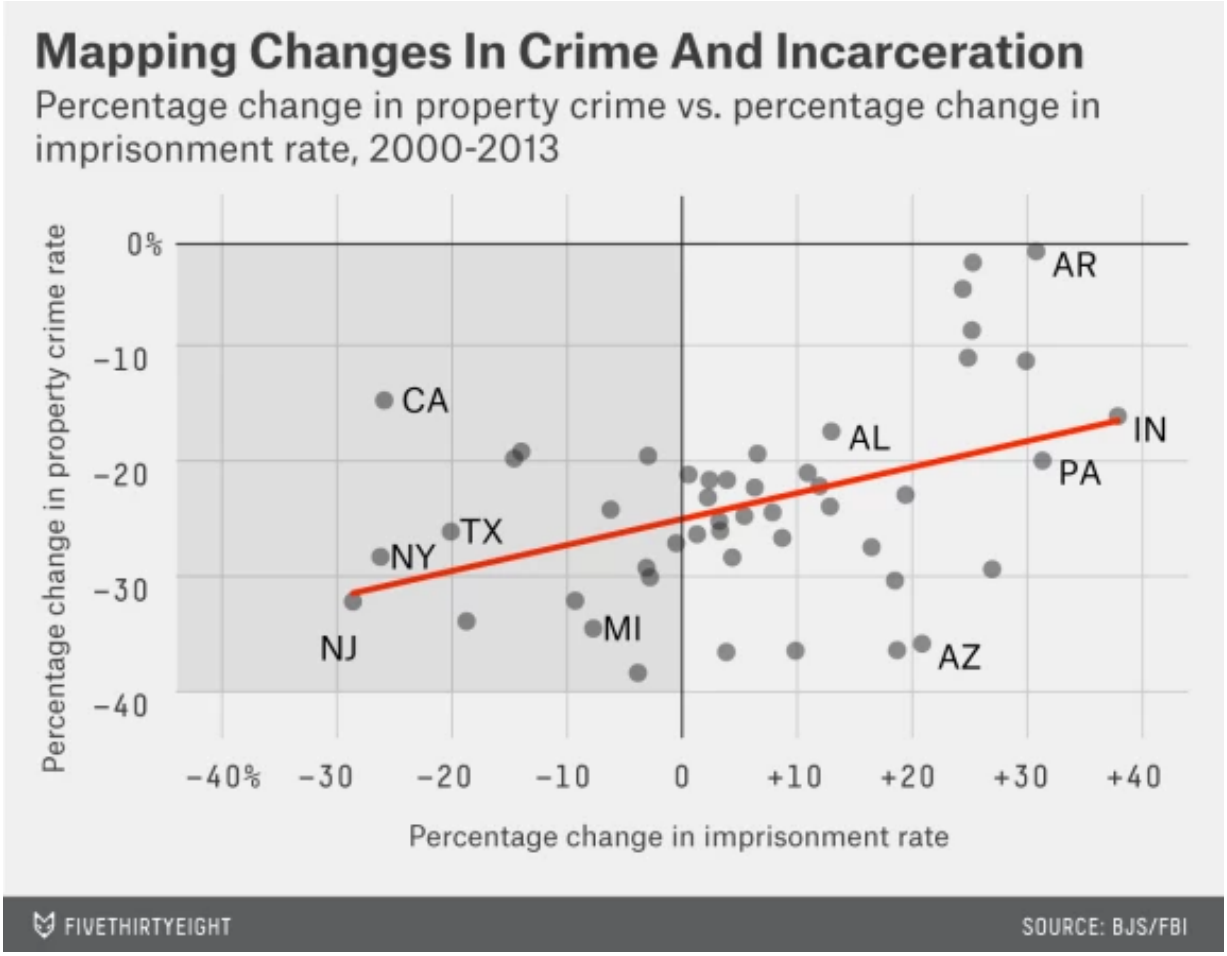
returns, the actual drop off may be much greater. We do not have good evidence on this point." Basically, he's saying we know what to expect, but at the time we didn't have the results to back it up.

But the evidence is growing. The new Brennan Center report ran a regression analysis on crime and all sorts of variables that might affect it: incarceration, police employment, median income, unemployment rates, alcohol consumption, age and racial makeup, etc. The regression model allows the relationship between incarceration and crime to vary as incarceration varies, thus fully accounting for the possibility of diminishing returns.[5]

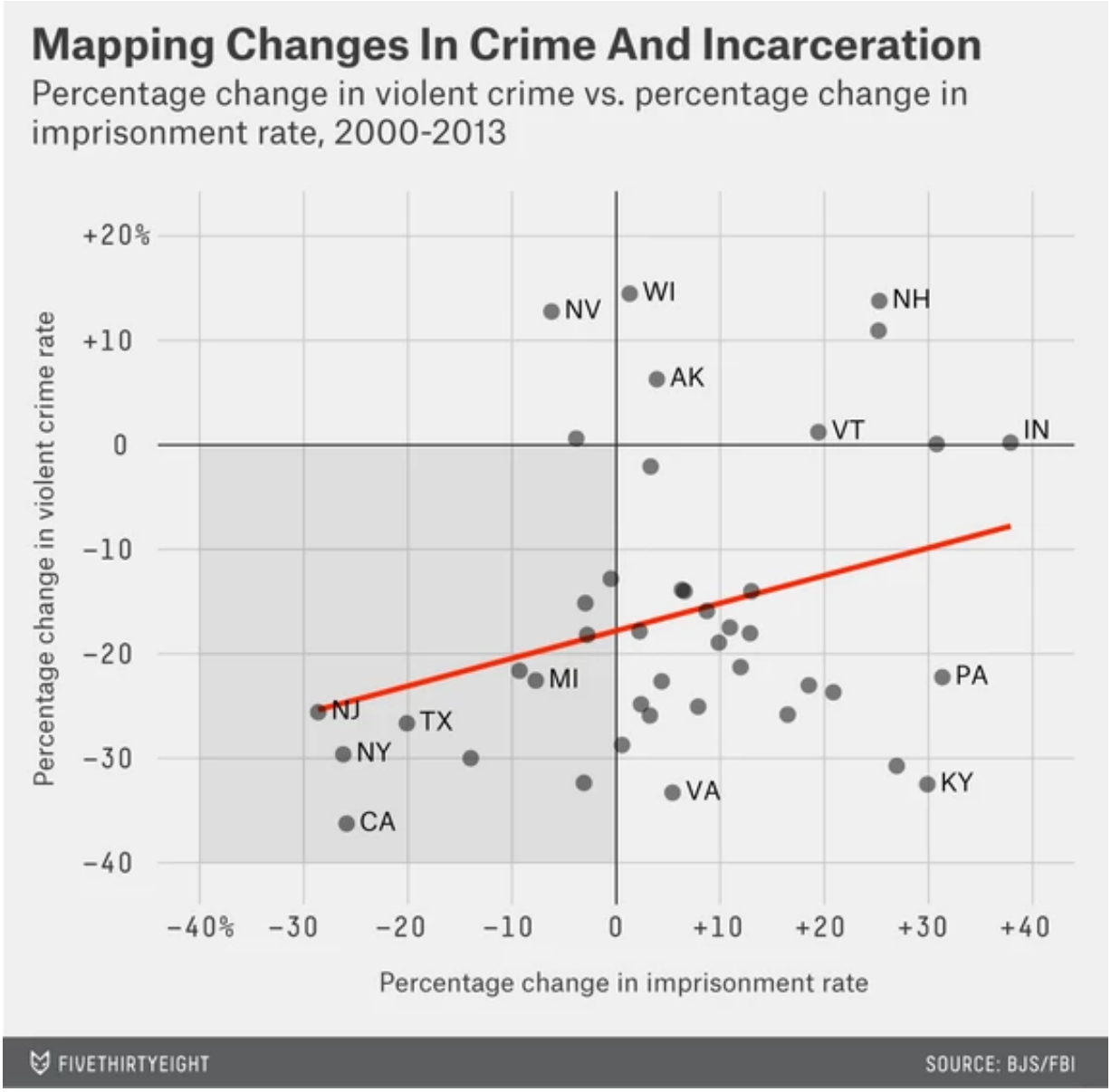
And diminishing returns are what we saw. Crime rates dropped as incarceration rates rose, for a time, but incarceration's effect on crime weakened as more people were imprisoned.[6] An increase in incarceration was responsible for something like 5 percent of the decrease in crime in the 1990s, when its levels were lower, but has played no meaningful role since. If I were speaking to a fellow economist, I'd say the incarceration elasticity of crime is not distinguishable from zero. At a cocktail party, I'd say that crime no longer responds to changes in incarceration.

Nationwide, incarceration has been relatively flat in recent history. Since 2000, the imprisonment rate, while high, is up just 1 percent. However, individual states have had widely varying experiences. And there we found anecdotal evidence of diminishing incarceration returns in the states as well.

Fifteen states have experienced decreases in property crime and incarceration rates since 2000. Those states are in the shaded region.



A similar pattern emerges for violent crime. Of the states that reduced incarceration, only two saw an increase in violent crime. Thirteen saw decreases. Again, states in the shaded region saw drops in crime and incarceration.



Many of these states are big: California, Texas, New York, Michigan. Notably, these states decreased their incarceration rates for very different reasons. California, for example, faced a Supreme Court-mandated "realignment" to address prison overcrowding. Prisoners were shifted to local jails, and their release was encouraged. Texas, on the other hand, was more proactive, appropriating hundreds of millions of dollars for prison alternatives such as substance abuse programs, drug courts and mental illness treatment.

These charts aren't proof of diminishing returns, but they're evidence of it. A state's change in incarceration is not strongly linked with its change in crime; one doesn't seem to have much to do with the other. Since 2000, adding more prisoners in a state has been associated with having more crime. (A simple linear regression shows a mild *positive* relationship between changes in imprisonment and changes in crime.) This is

consistent with everything else we're seeing: Diminishing returns have rendered additional incarceration impotent.

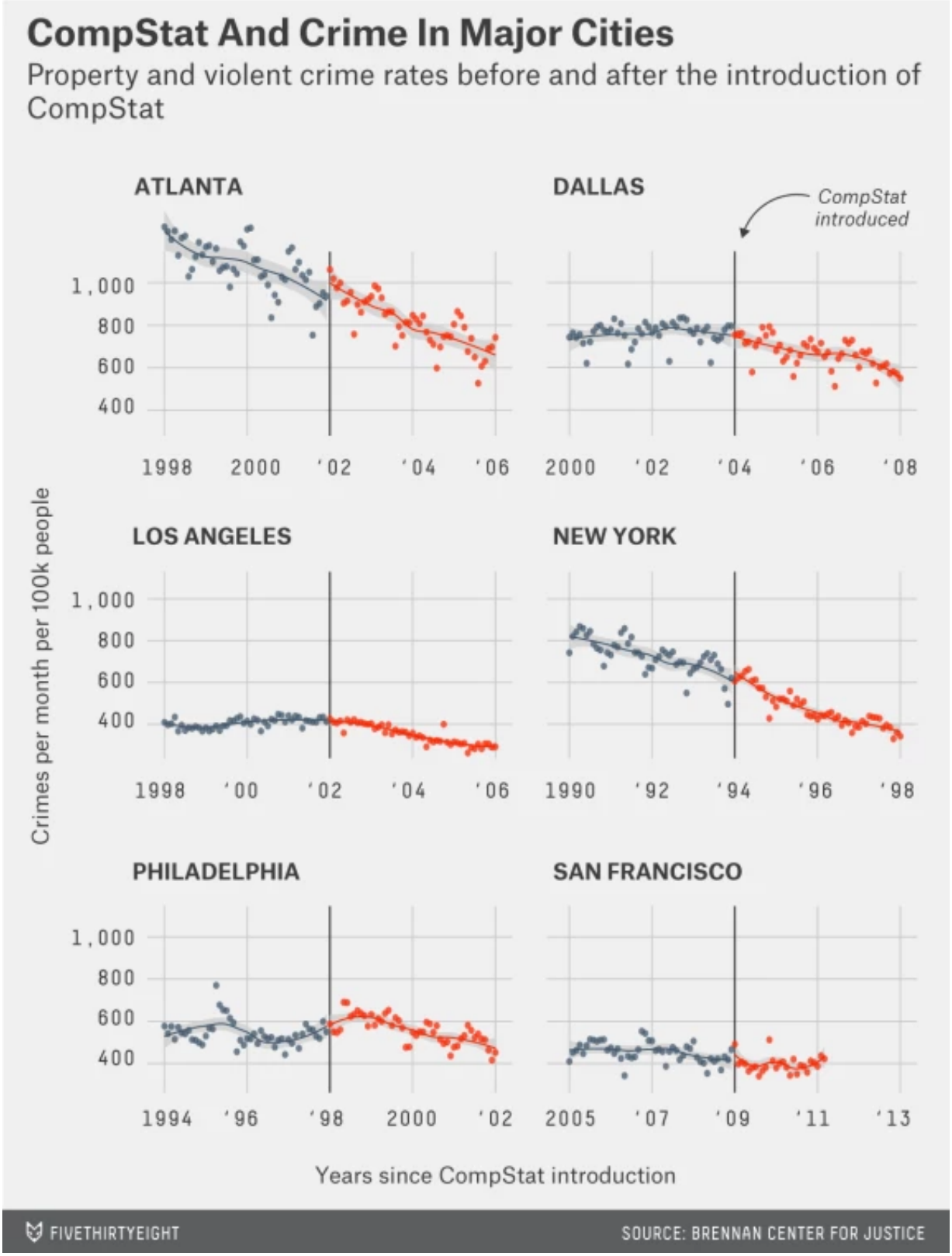
Evidence of incarceration's diminishing returns can be found outside of big data sets and regression models, too. It can also be found via a natural experiment. A report from the Brookings Institution's Hamilton Project compared the prisoner releases from California's realignment with similar releases in Italy, following clemency legislation passed by the Italian Parliament. California saw no discernable change in crime. Italy saw a spike in crime. The reason? California's incarceration rate was high, and Italy's was low. Italy hadn't yet experienced dramatically diminishing returns.

The Brennan Center report also tried to grasp what caused the crime decline. If it wasn't increased incarceration, what was it? The short answer: We don't know, and neither does anybody else.[7]

But there's one promising factor we did uncover: policing. It's fairly well-established that as the number of police in a city rises, crime in that city falls. Much more mysterious is how police techniques affect crime rates. To explore policing, we turn from states to cities, and to a program called CompStat.

CompStat began with a New York City transit police lieutenant mapping subway crime by hand. It was effective, so the system was computerized and implemented throughout the NYPD in 1994. It has since been adopted in cities across the country, with departments gathering data and mapping crimes. This both increases the information available to police and allows for additional accountability on the part of officers.

Below, you'll see how a few big American cities' crime rates changed four years before and after they introduced CompStat.[8]



These are a selected few cities, but their experiences aren't atypical. In most cases, the introduction of CompStat is associated with an accelerated drop in crime or the reversal of an upward crime trend.[9]

After controlling for police numbers and time- and city-level factors, we found that across the board — violent, property, even homicide — there was roughly a 10 percent

crime reduction associated with the introduction of a CompStat program. We only considered the 50 most populous cities — 41 of which have CompStat in some form — so it's not immediately clear what the aggregate effect on nationwide crime has been or could be. But it's potentially meaningful.[10]

All of this to say, crime trends are complicated. Surely no one is complaining about the recent decline, but no one fully understands it either. One thing is becoming clear: Increased incarceration's role was minimal.

Footnotes

1. The crime data referenced throughout this article is from the FBI's Uniform Crime Reports.
2. This data is from the Bureau of Justice Statistics' Corrections Statistical Analysis Tool and a BJS report on historical incarceration rates.
3. Many minor offenses are barely enforced, first-time offenders typically receive more lenient sentences, repeat offenders receive harsher ones, more serious crimes have more serious penalties, and so on.
4. The closest work to ours is a 2006 paper, by Raymond Liedka, Anne Morrison Piehl and Bert Useem, using data through 2000. Our results are of very similar magnitude.
5. It includes higher-order incarceration terms. In the main specification, for example, we include terms for incarceration and incarceration squared. This allows the relationship to vary in the level of incarceration.
6. As mentioned above, it's important not to conflate correlation and causation. But, in this case, it's not much of a worry. Changes in incarceration can cause changes in crime, but not nearly as much the other way around. A 1994 paper by Thomas Marvell and Carlisle Moody Jr., and the 2006 paper by Liedka and co-authors, show Granger causality tests indicating this. Regarding changes in incarceration rates, Alfred Blumstein and Allen Beck write in a 1999 paper that "very little is attributable to changes in offense rates."
7. We found limited roles for factors such as alcohol consumption, unemployment, income and an aging population. Often, things that could affect crime a great deal come from far outside the criminal justice system. Two obvious examples put forth are Levitt's abortion hypothesis (as a result of *Roe v. Wade*) and Jessica Wolpaw Reyes's lead theory (as a result of the Clean Air Act).
8. New York introduced CompStat in January 1994, Philadelphia in March 1998, Atlanta in July 2002, Los Angeles in October 2002, Dallas in September 2004 and San Francisco in October 2009.
9. I've run Granger tests showing it's not a concern, but it is worth noting that the causality issue is potentially present here as well. It could be the case that police departments are introducing CompStat in response to increases in crime.
10.

A word of caution, though: Anyone who has seen "The Wire" is familiar with the possibility of police "juking the stats." Nevertheless, it remains a promising finding for future crime reduction.