



ShotSpotter says that its gunshot detection technology can detect, locate, and alert law enforcement agencies about illegal gunfire incidents in real-time. The digital alerts include a precise location on a map (latitude/longitude) with corresponding data such as the address, number of rounds fired, and type of gunfire.

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New Technologies, New Defenses: Beating ShotSpotter in Firearms Trials

New and improved law enforcement technologies, life in an ever-encroaching and expanding surveillance (and self-surveillance) state, and a regressive presidential administration¹ combine to produce fear and anxiety in criminal defense attorneys fighting gun possession cases at trial. At their core, gun cases almost always come down to police credibility. With knowledge, creativity and confidence, defense attorneys can embrace these very same technological developments to attack officer testimony, build reasonable doubt, fight for their clients, and win.

The Changing Landscape of Gun Possession Cases

As few as 10 years ago, the standard gun trial consisted essentially of police officers testifying that they recovered a gun from on or near an attorney's client, and an "expert" (or stipulation) concluding that the gun was operable and/or manufactured out of state. Today, even the most routine gun cases commonly involve fingerprint and DNA testing,

evidence derived from clients' social media accounts and smartphones, video, and increasingly, evidence from new technologies such as ShotSpotter. Providing the effective assistance of counsel in a gun case now requires defense counsel to gain expertise in these areas. As prosecutors confront the "CSI effect,"² law enforcement has responded to fill in these real or perceived gaps in proof.

Increasing types and quantities of government evidence against clients in gun cases mean thorough and detailed client interviewing and investigation from the moment defense attorneys meet their clients have never been more important. What happened, where, and with whom, are of course critical, but just as necessary for combating gun cases in the new era are questions targeting new technologies: attorneys must find out *exactly* where their clients were when the police arrested them, go there immediately, look for every camera, and look at every roof in the area for sensors. Defense attorneys need to know where their clients' phones are, how the police took them, and what the police will find. They need to know if other people were there, and whether they recorded anything. Finally, defense attorneys need to know each client's full social media apparatus, no matter the privacy settings.

ShotSpotter

ShotSpotter presents a significant opportunity to put a law enforcement tool to the defense's own use. Over the last several years, and expanding rapidly, police departments across the country have begun to contract with ShotSpotter (also known as SST, Inc.), a private corporation, for the installation and analysis of gunshot detection systems.³ ShotSpotter defines its eponymous product as

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“an acoustic gunshot detection and location system that detects gunfire using an array of GPS-enabled microphone sensors to geo-locate detected gunfire using a mathematical process called multilateration.”⁴ In English, the company markets the system as follows:

ShotSpotter is gunshot detection, acoustic surveillance technology that uses sophisticated sensors to detect, locate and alert law enforcement agencies of illegal gunfire incidents in real time. The technology detects gunfire when a gun is discharged, protects officers with increased tactical awareness, and connects law enforcement agencies to the community and to their mission of protect and serve. The real-time digital alerts include a precise location on a map (latitude/longitude) with corresponding metadata such as the address, number of rounds fired, type of gunfire, etc. delivered to any browser-enabled device or mobile device.⁵

As ought to concern civil liberties-minded individuals in addition to criminal defense attorneys, practical use of the ShotSpotter system means that the government is contracting with a private company to install microphones on rooftops, which are frequently privately owned, in “high crime areas,” i.e., communities of color. These microphones pick up loud sounds that may be gunshots, or fireworks, or trucks backfiring (or, though the company would deny the allegation, conversations among individuals), and in essence, make their own 911 calls, rushing police officers to locations with preconceived notions of what they will find.

To the defense community’s knowledge, ShotSpotter first reached New York federal courts in two 2017 trials in the Eastern and Southern Districts.⁶ In both trials, it was essentially beyond dispute that a gunshot was fired; in neither trial was the defendant charged with a shooting — or was anyone shot. To different degrees, prosecutors sought to buttress charges of simple possession of firearms with acoustic evidence that ShotSpotter had picked up the sounds of gunshots. This is how the argument went: the fact that there were gunshots made it more likely that guns fired the shots, and thus, more likely that the defendants possessed the guns.

Although ShotSpotter provides a pseudo-scientific gloss of expertise, the reality is that the technology is nowhere

near advanced enough to target a specific location, let alone a specific human being. Preliminary reports provided by ShotSpotter suggest a level of geographic precision that does not withstand the company’s own detailed analysis. As it turns out, ShotSpotter does not even do a detailed analysis of the alerts it pushes out to local police department emergency systems unless one is requested for trial. In fact, ShotSpotter charges defense attorneys (as “noncustomers”) \$5,250 to prepare a forensic report. When ShotSpotter performs its own analysis, as in the Eastern District of New York case, “during analysis [one year after the defendant’s arrest], it was found that the incident location, as automatically calculated by ShotSpotter, was incorrect by approximately 25 meters to the northeast. This was due to sensor #3012 detecting an echo instead of the originating pulse causing a pulse mismatch. After analysis the incident location was corrected to [10 houses up the block from the defendant’s house].”⁷

What seemed at first blush a cause for concern — a piece of technology, unencumbered by the biases of police officers or civilian witnesses, was pointing the finger at the defendant — became an opportunity for a complete defense: the gun was somewhere else, as far as 25 meters away, perhaps in the hands of someone else. ShotSpotter errors are not limited to echoes. The technology is ripe for *Daubert/Frye* challenges.⁸ Recently, a New York state court judge reversed a jury conviction for criminal possession of a firearm, finding that ShotSpotter was not reliable enough absent other corroborating evidence.⁹ As this technology sweeps across the country, defense attorneys must be vigilant in learning its ins and outs, partner with community groups to oppose its implementation,¹⁰ and, when appropriate, bring legal challenges. Through additional forensic reports and evidentiary hearings, defense attorneys can continue to better equip their defender toolkits to exploit this technology to protect their clients.

Conclusion

While developing technologies threaten clients’ liberty in gun possession trials, just as often they provide weapons that allow defense attorneys to fight back. Time-tested trial advocacy strategies utilized by defense attorneys are only fortified when they come to know these innovations — especially when defense attorneys come to understand the innovations better than the prosecutors trying these

cases and the “expert” witnesses selling them to juries. New technology is not to be feared; it is only to be learned.

Notes

1. See Press Release, U.S. Department of Justice, Federal Gun Prosecutions Up 23 Percent After Sessions Memo, <https://www.justice.gov/opa/pr/federal-gun-prosecutions-23-percent-after-sessions-memo> (July 28, 2017) (last viewed Sept. 14, 2017).

2. See, e.g., Arun Rath, *Is the ‘CSI Effect’ Influencing Courtrooms?* <http://www.npr.org/2011/02/06/133497696/is-the-csi-effect-influencing-courtrooms> (Feb. 5, 2011) (last viewed Sept. 14, 2017).

3. From a recent four-day sample, see, e.g., Peter Goonan, *Springfield (Mass.) City Council Grants Funds to Expand ‘ShotSpotter,’ OKs Land Sale for STCC Parking*, MASSLIVE, http://www.masslive.com/news/index.ssf/2017/09/springfield_city_council_grant_14.html (Sept. 13, 2017) (last viewed Sept. 15, 2017); Lisbeth Perez, *ShotSpotter Comes to Washington Heights, Inwood (NYC) Next*, THE UPTOWNER, <http://theuptowner.org/shotspotter-comes-to-washington-heights-inwood-next/> (Sept. 13, 2017) (last viewed Sept. 15, 2017); Andy Kravetz, *ShotSpotter Alerts Keep Peoria (Ill.) Police Busy*, JOURNAL STAR, <http://www.pjstar.com/news/20170914/shotspotter-alerts-keep-peoria-police-busy> (Sept. 14, 2017) (last viewed Sept. 15, 2017); WCPO Staff, *ShotSpotter Helps Create a ‘Fingerprint’ Network of Shell Casings*, WCPO Cincinnati (Ohio), <http://www.wcpo.com/news/local-news/hamilton-county/cincinnati/avondale/shotspotter-creates-a-fingerprint-network-of-shell-casings> (Sept. 12, 2017) (last viewed Sept. 15, 2017).

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