

Police Shootings: Is Accountability the Enemy of Prevention?

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Police officers shoot an unarmed man or woman. The victim's family and community cry out for someone to be held accountable. In minority communities, where a disproportionate number of officer-involved shootings occur, residents suspect that racial animus and stereotypical assumptions about "dangerous black men" played a part. Citizens seek accountability by filing lawsuits and demanding criminal prosecutions. They are usually disappointed: the majority of police-involved shootings are deemed "justified" by police investigators and courts, and no criminal charges are brought. If so, this is the end of the inquiry under current legal standards and there is no accountability. There is also no legal reason to ask why the shooting occurred and how it could have been prevented. This Article argues that the current accountability paradigm is hindering genuine progress in decreasing the number of police-involved shootings, including those motivated by racism. We need to look beyond the limited time frame embraced by the current legal standard and view police-involved shootings as organizational accidents. Borrowing lessons learned from the aviation and healthcare fields, this Article urges a prevention-first approach that applies systemic analysis to what are systems problems. In these sectors, investigations of tragic accidents employ Sentinel Event Review, a systems-oriented strategy that looks back to discover all the factors that contributed to the event and looks forward to identify systemic reforms that could mitigate the chance of recurrence. The goal is to create systemic barriers that make it more difficult for sharp-end actors to err or misbehave. I am not arguing that individual police officers should escape responsibility for their actions. But our current relentless focus on accountability—while an understandable human reaction—has become the enemy of prevention in the very communities that need it most.

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TABLE OF CONTENTS

I. INTRODUCTION	908
II. POLICE VIOLENCE AS AN ORGANIZATIONAL PROBLEM	915
A. <i>Complexity and Organizational Accidents</i>	917
B. <i>Policing as a Complex System</i>	918
C. <i>Accident Prevention in Complex Systems</i>	922
III. PREVENTING ORGANIZATIONAL ACCIDENTS.....	924
A. <i>Lessons from Aviation</i>	926
B. <i>Sentinel Event Review in Medicine</i>	931
C. <i>The Importance of Multi-Incident Review</i>	934
D. <i>Sentinel Event Review in Criminal Justice</i>	935
IV. SYSTEMS-ORIENTED REVIEW OF POLICE SHOOTINGS	940
A. <i>What Is the Goal of Systems-Oriented Review of Police Shootings?</i>	940
B. <i>Why Accountability Review Does Not Prevent Police Shootings: A Case Study of the Tamir Rice Shooting</i>	942
1. <i>The Inadequacy of Accountability Review</i>	945
2. <i>Applying Systems-Oriented Review</i>	948
a. <i>The Approach</i>	953
b. <i>The Dispatcher's Call</i>	962
V. THE PROMISE OF SENTINEL EVENT/SYSTEMS REVIEW IN POLICING.....	966
A. <i>Beyond the Single Incident</i>	968
B. <i>Data-Informed Analysis: Looking for Patterns in Police Shootings</i>	973
C. <i>Challenges to Systems-Oriented Review: What Will It Take?</i> ...	982
VI. CONCLUSION.....	985

I. INTRODUCTION

Societal outrage over the death of civilians at the hands of police may be near an all-time high. The relentless litany of tragic deaths—Stephon Clark,¹

¹Courtney Teague & Amy B. Wang, *Sacramento Police Officers Who Fatally Shot Stephon Clark Will Not Be Charged, Prosecutor Says*, WASH. POST (Mar. 2, 2019), https://www.washingtonpost.com/nation/2019/03/02/sacramento-police-officers-who-fatally-shot-stephon-clark-will-not-be-charged-prosecutor-says/?utm_term=.8b19d9cd72cb [<https://perma.cc/HK9M-3H7J>].

Eric Logan,² Justine Rusczyk Damond,³ Laquan McDonald,⁴ Eric Garner,⁵ Freddie Gray,⁶ Sandra Bland,⁷ Philando Castile,⁸ Tamir Rice,⁹ Alton Sterling,¹⁰ Michael Brown,¹¹ Trayvon Martin,¹² and others named and unnamed—has provoked street protests and recurring calls for prosecutorial intervention. Families, neighbors, and communities want police officers to explain why they found it necessary to use deadly force. Society looks to prosecutions and civil damages actions to provide accountability by unearthing the truth about the circumstances of the shooting, imposing sanctions for wrongdoing, and deterring any misconduct that may have led to the incident. People are dead and we thirst for justice. “Officers must be held accountable,” we cry. “This must never be allowed to happen again.”

² Associated Press, *Special Prosecutor Named to Investigate South Bend Shooting of Eric Logan*, PBS (July 3, 2019), <https://www.pbs.org/newshour/nation/special-prosecutor-named-to-investigate-south-bend-shooting-of-eric-logan> [<https://perma.cc/65GY-23X8>].

³ Emily Shapiro, *Ex-Minneapolis Police Officer Sentenced to 12.5 Years for Fatal Shooting of Justine Rusczyk Damond*, ABC NEWS (June 7, 2019), <https://abcnews.go.com/US/minneapolis-police-officer-sentenced-fatal-shooting-justine-rusczyk/story?id=63547748> [<https://perma.cc/DZ7W-HHS6>].

⁴ Lorraine Swanson, *Van Dyke Atty. Warns of ‘Ferguson Effect’ Amid ‘Historic’ Verdict*, PATCH (Oct. 5, 2018), <https://patch.com/illinois/chicago/verdict-reached-van-dyke-murder-trial> [<https://perma.cc/UYS9-K4S3>].

⁵ Josh Sanburn, *Behind the Video of Eric Garner’s Deadly Confrontation with New York Police*, TIME (July 22, 2014), <https://time.com/3016326/eric-garner-video-police-chokehold-death/> [<https://perma.cc/XG5S-NPC2>].

⁶ Associated Press, *Freddie Gray’s Death in Police Custody—What We Know*, BBC NEWS (May 23, 2016), <https://www.bbc.com/news/world-us-canada-32400497> [<https://perma.cc/5CGW-KNJV>].

⁷ Oliver Laughland, *Sandra Bland: Video Released Nearly Four Years After Death Shows Her View of Arrest*, GUARDIAN (May 7, 2019), <https://www.theguardian.com/us-news/2019/may/07/sandra-bland-video-footage-arrest-death-police-custody-latest-news> [<https://perma.cc/X824-2KH7>].

⁸ Teresa Nelson, *Two Years After the Police Killing of Philando Castile, Justice Continues to Be Denied*, ACLU (July 6, 2018), <https://www.aclu.org/blog/racial-justice/two-years-after-police-killing-philando-castile-justice-continues-be-denied> [<https://perma.cc/PPC7-L4YH>].

⁹ Eric Heisig, *Tamir Rice Shooting: A Breakdown of the Events that Led to the 12-Year-Old’s Death*, CLEVELAND.COM (Jan. 13, 2017), https://www.cleveland.com/court-justice/2017/01/tamir_rice_shooting_a_breakdow.html [<https://perma.cc/U7JE-CCP6>].

¹⁰ Eric Levenson, *Baton Rouge Police Chief Apologizes for Hiring the Officer Who Killed Alton Sterling*, CNN (Aug. 1, 2019), <https://www.cnn.com/2019/08/01/us/alton-sterling-baton-rouge-police/index.html> [<https://perma.cc/W8QF-CXD6>].

¹¹ Timothy Williams, *Five Years After Michael Brown’s Death, His Father Wants a New Investigation*, N.Y. TIMES (Aug. 15, 2019), <https://www.nytimes.com/2019/08/09/us/ferguson-michael-brown.html> [<https://perma.cc/5L7G-Q8AA>].

¹² Karen Grigsby Bates, *A Look Back at Trayvon Martin’s Death, and the Movement It Inspired*, NPR (July 31, 2018), <https://www.npr.org/sections/codeswitch/2018/07/31/631897758/a-look-back-at-trayvon-martins-death-and-the-movement-it-inspired> [<https://perma.cc/Q7EG-S37D>].

And yet it does happen again. Multiple factors contribute to this, perhaps predominant among them, ongoing structural racism.¹³ Unarmed African-American individuals are 3.5 times more likely to be shot by police than unarmed white persons.¹⁴ Efforts to hold individual officers directly accountable for their racially motivated actions, though, may be the enemy of prevention. Without in any way minimizing the reality of racism, we need to address police shootings from a different angle. This Article argues that the current accountability paradigm—targeting the officer who pulled the trigger—is actually hindering genuine progress in decreasing the numbers of these tragedies, including those motivated by racism.

We need to understand police shootings (and other acts of excessive force that result in the death of unarmed civilians) as tragic organizational accidents. We need a shift towards a prevention-first approach that applies systemic analysis to what are systems problems.

The current accountability paradigm is fundamentally flawed for three related reasons. First, the idea that successful prosecutions and lawsuits after a police-involved shooting will prevent future tragedies relies on several related, but fundamentally flawed assumptions:¹⁵ it assumes that police shootings result solely (or primarily) from individual misconduct by the person who pulled the trigger, that police reform should focus on changing the behavior of these officers, and that lawsuits against individual officers will result in the kinds of changes that will reduce the incidence of police violence.¹⁶

In fact, the killing of unarmed civilians by police results from multiple causes, both human and systemic, that set the stage for the tragic moment when the shot was fired. Our current focus on only the immediate causer—and the narrow time frame that defines his actions—ignores this broader set of causal factors. This is not to say that the shooter is not blameworthy. But the single-

¹³ Brentin Mock, *How Structural Racism Is Linked to Higher Rates of Police Violence*, CITYLAB (Feb. 15, 2018), <https://www.citylab.com/equity/2018/02/the-role-of-structural-racism-in-police-violence/553340/> [<https://perma.cc/2NGU-KS2K>].

¹⁴ Roland G. Fryer, Jr., *Reconciling Results on Racial Differences in Police Shootings* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 24238, 2018).

¹⁵ Many scholars, including myself, have argued that—even apart from the systemic arguments I am making in this Article—criminal prosecutions and civil damages actions are largely ineffective in regulating police misconduct. *See, e.g.*, Barbara E. Armacost, *Organizational Culture and Police Misconduct*, 72 GEO. WASH. L. REV. 453, 464–77 (2004); Daniel J. Meltzer, *Deterring Constitutional Violations by Law Enforcement Officials: Plaintiffs and Defendants as Private Attorneys General*, 88 COLUM. L. REV. 247, 285–86 (1988) (arguing the deterrent effect of civil damage payments by municipalities on the conduct of individual officers remains highly questionable); Samuel Walker, *The New Paradigm of Police Accountability: The U.S. Justice Department “Pattern or Practice” Suits in Context*, 22 ST. LOUIS U. PUB. L. REV. 3, 18–19 (2003). These arguments have been thoroughly and exhaustively explored and are widely accepted by scholars. I do not rehash them here.

¹⁶ Walker, *supra* note 15, at 7.

minded focus on the officer who discharged his weapon leaves the officer's colleagues embedded in the same organization that led to his mistakes. It misses the opportunity to address the systemic and organizational features that make it possible (or probable) that individual officers will continue to make mistakes or misbehave.

The second reason the accountability paradigm is flawed is that its tools—civil and criminal actions and internal police department investigations—ask the narrow question of whether the shooting was “justified” or “reasonable” at the precise moment the shot was taken.¹⁷ When a shooting is deemed justified, all other examination of the tragedy ceases. This adds to the tragedy, since further examination could illuminate its root causes and point us to systemic reforms that could reduce the incidence of future officer-involved shootings.

It is easy to miss the perverse implications of this analysis. The very word “justified” implicitly assumes that this shooting, and shootings like it, are unavoidable or even desirable. By applying a case-by-case inquiry, however, the analysis never squarely asks the question whether these *kinds of* shootings—shootings under these or similar circumstances—are reasonable or societally justified. In addition, the terms “reasonable” and “justified” deeply fail to express adequately the human values at stake: every loss of human life is regrettable and every police shooting a tragedy, even if—at the moment the shot was taken—the police officer reasonably believed it was necessary.

Third, the current accountability paradigm is inadequate because it applies a single-dimension analysis to an entity—a police department—which organizational management experts would define as a “complex” and “tightly coupled” organization.¹⁸ Such organizations by their nature are highly susceptible to systems failure.¹⁹ Yet present investigations do not apply *systems-oriented* analysis and review. This in turn prevents us from identifying the correspondingly wider range of potential preventative measures that could (or must) be taken to prevent similar tragic shootings in the future.

Many other actors may have contributed to the circumstances or increased the risks that led to the fatal moment; for example, the dispatcher who sent the officer to the scene, the supervisors who wrote the use-of-force policies, the managers who trained on those policies, the magistrate who signed an arrest warrant, or the legislature that set the terms of the officer's arrest authority. Non-human factors, such as overtime or moon-lighting policies that promote overwork, unenforced discipline rules, patterns of repeated risk-taking behavior, pressure to effectuate quotas of arrests or stops, stop-and-frisk policies, laws that define crimes and regulate police powers, and cultural patterns that promote over-aggressive policing, may also have contributed to the officer's actions.

¹⁷ See *Graham v. Connor*, 490 U.S. 386, 388 (1989); *City & Cty. of S.F. v. Sheehan*, 135 S. Ct. 1765, 1777 (2015); *infra* note 275 (discussing circuit split on precise time frame for determining reasonableness in excessive force cases).

¹⁸ See *infra* Part II.B for a discussion of police departments as complex systems.

¹⁹ See CHARLES PERROW, *NORMAL ACCIDENTS* 5 (1984).

If the goal is not only punishment and accountability for individual actions, but also prevention of future similar harm-causing incidents, then it is essential that these other causes be part of the analysis. We must move beyond the current strategy of looking backward to identify errors to a forward-looking approach that employs the kind of systems-oriented review that is currently not available as part of the adversarial process of criminal prosecution and civil litigation.²⁰

Sadly, accountability review fails even if it succeeds in holding the shooter responsible. Consider the recent prosecution of Officer Van Dyke, who was convicted of second-degree murder and sixteen counts of aggravated battery in the shooting death of Laquan McDonald.²¹ The prosecutor called the verdict “a satisfying victory” and McDonald’s family called it “justice.”²² The African-American community filled the streets to celebrate the first guilty verdict in fifty years in connection with a Chicago police-involved shooting.²³ Officer Van Dyke will spend at least ten years in prison.²⁴ But police leaders say the sixteen shots that killed Laquan McDonald were “absolutely justified,” that politicians “have used this case . . . to really kick around the Chicago Police Department.”²⁵ Van Dyke’s attorney, Daniel Herbert, warned that the verdict will make police officers into “security guards” who will be unwilling to “get out of the car to confront somebody.”²⁶ The community is overjoyed with the verdict while the Fraternal Order of Police calls it a “sham” trial, and Herbert echoed it as a “sad day for law enforcement.”²⁷ Will anything change as the parties talk past each other? No one seems to be asking *why* this happened.

To outsiders, there may seem to be a variety of responses giving voice to community outrage. But as I will argue, none of these as currently structured—internal investigations, civilian reviews, mayoral task forces—are sufficiently reliable, thorough, independent, or systemic. Moreover, because all focus on

²⁰ The Supreme Court has foreclosed forward-looking, equitable remedies that have been useful in other contexts, including school desegregation and prison reform. *See* *City of L.A. v. Lyons*, 461 U.S. 95, 112 (1982). Entity lawsuits, which are designed to hold the entity liable for the immediate causer’s actions, do not produce the kind of systems-oriented review I am advocating for here. Pattern or practice lawsuits against municipalities and 42 U.S.C. § 14141 lawsuits are also limited in addressing systemic issues involving additional actors and latent causes.

²¹ Swanson, *supra* note 4.

²² *Id.*

²³ *Id.*

²⁴ *See id.*

²⁵ Nick Blumberg, *Police Union President Defends Van Dyke, Vows Appeal*, WTTW (Oct. 5, 2018), <https://news.wttw.com/2018/10/05/police-union-president-defends-van-dyke-vows-appeal> [<https://perma.cc/V79M-BVMR>].

²⁶ Andy Grimm & Jon Seidel, *16 Shots, a Guilty Verdict and a Chicago Cop Goes to Jail for Killing a Teen*, CHI. SUN TIMES (Oct. 5, 2018), <https://chicago.suntimes.com/2018/10/5/18422864/16-shots-a-guilty-verdict-and-a-chicago-cop-goes-to-jail-for-killing-a-teen> [<https://perma.cc/75WS-G6EW>].

²⁷ Blumberg, *supra* note 25; Swanson, *supra* note 4.

accountability, the queries that could raise reforms advancing prevention are absent.²⁸

Given racial realities, it is tempting to say, “We know why this happened: a white police officer, motivated by racial animus and stereotypical assumptions about dangerous black men, shot a black man—again.” Even when this account is partially true, individual racism is not a sufficient causal story if the goal is to prevent the *next* shooting. We need to be asking a whole series of deeper “why” questions that go behind the racial explanation to uncover the systemic factors that enabled the officer’s actions, including factors that facilitated the officer’s race-motivated actions.

In short, what is needed instead is a paradigm focused primarily on prevention. For it, we can borrow from lessons learned in the aviation and healthcare fields. In these sectors, investigations of tragic accidents employ Sentinel Event Review (SER), a systems-oriented approach utilizing analytic tools, like root cause analysis, to both look back to understand all the factors contributing to the event and look forward towards the kinds of systemic

²⁸ After the Van Dyke trial, for example, Mayor Rahm Emanuel created the Chicago Police Accountability Task Force, which issued a scathing report on April 13, 2016. Monica Davey & Mitch Smith, *Chicago Police Dept. Plagued by Systemic Racism, Task Force Finds*, N.Y. TIMES (Apr. 13, 2016), <https://www.nytimes.com/2016/04/14/us/chicago-police-dept-plagued-by-systemic-racism-task-force-finds.html> [https://perma.cc/EH S3-KT8G]. The Department of Justice also initiated an investigation, publishing its report, equally critical, in January 2017. Rebecca Hersher, *DOJ: ‘Severely Deficient Training’ Has Led to Pattern of Abuse by Chicago Police*, NPR (Jan. 13, 2017), <https://www.npr.org/sections/thetwo-way/2017/01/13/509646186/doj-severely-deficient-training-has-led-to-pattern-of-abuse-by-chicago-police> [https://perma.cc/73UG-CQZW]. In April 2016, the City of Chicago indicated it would move toward signing a consent decree for court-supervised police reform. Jonah Newman, *Five Things to Watch as CPD Consent Decree Moves Forward*, CHI. REP. (July 27, 2018), <https://www.chicagoreporter.com/five-things-to-watch-as-cpd-consent-decree-moves-forward/> [https://perma.cc/69VM-96 B3]. But all these efforts stalled when former Attorney General Jeffrey Sessions stated that he would not enforce such consent decrees. Aamer Madhani, *Federal Judge Approves Consent Decree to Reform Chicago Police Department*, USA TODAY (Jan. 31, 2019), <https://www.usatoday.com/story/news/nation/2019/01/31/chicago-police-department-consent-decree-reforms-attorney-general-lisa-madigan/2734415002/> [https://perma.cc/63W2-CTHW]. In August 2017, former Illinois Attorney General Lisa Madigan filed a federal lawsuit seeking court ordered police reform in Chicago. *Id.* Finally, nearly two years later, a federal judge approved a plan calling for policy changes, noting that the process of reform won’t be easy or swift.” Dan Hinkel, *Judge Approves Historic Court Order Aimed at Reforming Chicago Police Department: ‘Let Us Begin’*, CHI. TRIB. (Feb. 1, 2019), <https://www.chicagotribune.com/news/breaking/ct-met-chicago-police-oversight-decree-20190131-story.html> [https://perma.cc/GWQ8-S8TV]. The city’s main police union, the Chicago Fraternal Order of Police, was the most vocal opponent of the reform plan. *Id.* For a discussion of the inadequacy of administrative reviews and civilian oversight board reviews for preventative reform, see John Hollway et al., *Root Cause Analysis: A Tool to Promote Officer Safety and Reduce Officer Involved Shootings over Time*, 62 VILL. L. REV. 882, 893–94 (2017).

reforms that could mitigate the chances of recurrence.²⁹ In aviation, SER is credited with dramatically increasing safety: there has been no major airline accident involving an American commercial airplane since 2009.³⁰ In the healthcare field, systems-oriented review has led to a drastic reduction of certain kinds of accidents and errors because of its focus on *systems solutions* rather than on reducing human error.³¹

In Part II, drawing on the seminal work of Charles Perrow,³² I argue that we must see police shootings not only as human-caused actions but as “systems accidents,” meaning that they involve unanticipated interaction of multiple failures in a complex system. I show how police departments are the kinds of complex, “tightly bound” organizations that Perrow shows are especially susceptible to system failures.

Perrow advanced our understanding of the kinds of organizations most susceptible to system failure but did not offer strategies for how to implement post-failure investigations in ways that could prevent future tragedies. This work was pioneered by James Reason.³³ He applied an early version of root cause analysis (RCA), which has helped investigators understand the latent conditions underlying such system failures. I discuss Reason’s work in Part III, exploring its application to aviation accidents and medical mistakes. This Part ends with a discussion of early applications of root cause analysis (systems review) to wrongful convictions and other criminal justice errors.

In Part IV, in an effort to make the concept of RCA more three-dimensional, I apply this analytical tool to the tragic shooting of twelve-year-old Tamir Rice

²⁹ See *Sentinel Events Initiative*, NAT’L INST. JUST. (Nov. 1, 2017), <https://www.nij.gov/topics/justice-system/Pages/sentinel-events.aspx> [https://perma.cc/AZ8V-XZ9J].

³⁰ Leslie Josephs, *The Last Fatal U.S. Airline Crash Was a Decade Ago. Here’s Why Our Skies Are Safer*, CNBC (Feb. 13, 2019), <https://www.cnbc.com/2019/02/13/colgan-air-crash-10-years-ago-resaped-us-aviation-safety.html> [https://perma.cc/T7GU-CM6G].

³¹ See, e.g., PETER PRONOVOST & ERIC VOHR, *SAFE PATIENTS, SMART HOSPITALS* 24–51 (2010) (describing how checklists reduced the risk of central line infections to “nearly zero”); see also ATUL GAWANDE, *THE CHECKLIST MANIFESTO—HOW TO GET THINGS RIGHT* 7–8 (2009) (discussing how a simple checklist can reduce surgery deaths and complications). See generally SUZANNE GORDON ET AL., *BEYOND THE CHECKLIST: WHAT ELSE HEALTH CARE CAN LEARN FROM AVIATION TEAMWORK AND SAFETY* (2013).

³² See generally PERROW, *supra* note 19.

³³ James Reason was a Professor of Psychology at the University of Manchester starting in 1977, where he continues as Professor Emeritus. Reason has published multiple important articles and books on human error and organizational processes, including most importantly, *HUMAN ERROR* (1990) [hereinafter REASON, *HUMAN ERROR*], *MANAGING THE RISKS OF ORGANIZATIONAL ACCIDENTS* (1997) [hereinafter REASON, *MANAGING THE RISKS OF ORGANIZATIONAL ACCIDENTS*], and *ORGANIZATIONAL ACCIDENTS REVISITED* (2016). For a general description of Reason’s work, see *James T. Reason*, SAFETYLEADERS, http://safetyleaders.org/superpanel/superpanel_james_reason.html [https://perma.cc/35FM-JLCX] [hereinafter *Reason*, SAFETYLEADERS].

by an officer of the Cleveland Division of Police in November 2014.³⁴ Here I demonstrate how the insights from this kind of structured analysis can lead to systems solutions. Full success, though, rests on applying RCA not only to *individual* incidents but also to large-scale data records that can help us find *patterns* of mistakes across multiple, similar incidents.

In Part V, I supply an overview of the promise of systems-oriented review in policing, including the use of data-informed analysis to look for repeated causal patterns in police shootings.

Finally, Part VI briefly concludes.

II. POLICE VIOLENCE AS AN ORGANIZATIONAL PROBLEM

Police-involved shootings almost always give rise to investigations or litigation targeting the individual officer who fired the shots. This seems like an obvious result. It was, after all, this officer who decided to approach or confront the suspect. It was he who determined that deadly force was necessary. He is the one who raised his gun and pulled the trigger. This way of thinking reflects the way we generally think about issues of causation: we tend to look at the most proximate causer.

Lawsuits and prosecutions against the person who did the shooting also express a legitimate demand that justice be done. Police officers' power to take a human life is an awesome and terrible power. When that power is applied against an unarmed person or against someone who arguably posed no risk to police, there is understandable grief, sorrow, and moral outrage. Beyond the tragedy of a lost life, the suspect's family and community may believe that police acted carelessly or even maliciously. In many communities there is a history of police violence or illegality by police officers, particularly against racial or cultural minorities.³⁵ There is suspicion that police, investigators, and governmental officials will not tell the truth about what really happened. Communities rely on legal actions to get the real story out, to make sure that someone is held accountable, to make sure that justice is done for the victim and his family, to get bad or dangerous cops off the streets—all in hopes that lawsuits will keep police from taking other innocent lives in the future.³⁶

Enforcing individual culpability reflects Western culture's deep commitment to the idea that human beings have agency and act voluntarily. Our entire criminal justice system is premised on the belief that human beings can justifiably be held accountable for their bad behavior. Even though we know

³⁴ See Heisig, *supra* note 9.

³⁵ See, e.g., U.S. DEP'T OF JUSTICE, CIVIL RIGHTS DIV., INVESTIGATION OF THE BALTIMORE CITY POLICE DEPARTMENT 16 (2016), <https://assets.documentcloud.org/documents/3009376/BPD-Findings-Report-FINAL.pdf> [<https://perma.cc/2NXZ-F3TT>] (outlining, among other incidents, a history of racially motivated civil rights violations by the Baltimore Police).

³⁶ See generally SIDNEY DEKKER, JUST CULTURE 90–91 (2d ed. 2012) (describing the role of lawsuits).

that criminal conduct is not entirely “voluntary” in a deeper sense—poverty, past abuse, mental illness and other factors contribute to the likelihood of criminal conduct—criminal sanctions fall on the voluntary acts of the final human actor, the last “cause” in the chain.³⁷ This way of thinking also reflects a deep human need to find someone to blame for harmful or tragic circumstances. The need to identify causes is fundamental to human nature; not being able to find a cause is deeply disturbing because it signals a loss of control:³⁸

Without a cause, there is nothing to fix. And, with nothing to fix, things could go terribly, randomly wrong again—with us on the receiving end this time. Having a criminal justice system deliver us stories that clearly carve out the disordered from order, that excise evil from good, deviant from normal, is about creating some of the order that was lost in the disruption of the bad event.³⁹

Ironically, the sense of order we get from blaming individual bad performance—the belief that blaming will bring change—is an illusion when it comes to harms involving complex organizations. Several decades of research on “organizational accidents” demonstrates that so-called “active causes” by “sharp end” actors—pilots, airline mechanics, surgeons, equipment operators—are only a small part of the causal story.⁴⁰ Sharp end actors inherit situations and circumstances with latent failures and errors inherent in them.⁴¹ It is the combination of active errors and latent weaknesses that predominantly explains harmful results in complex systems.⁴² Sadly, addressing only active causes, through lawsuits and prosecutions against individual actors, does not ultimately result in a reduction in harmful accidents. If, as I argue below, policing involves a complex system within the meaning of the organizational accident literature, the current reliance on lawsuits and prosecutions in police-involved shootings is at best inadequate, and at worst counterproductive.

³⁷That human beings gravitate toward blaming immediate, human causes rather than “systems causes” is reflected in what psychologists call the fundamental attribution error: People consistently blame bad performance and bad outcomes by other people on their personal inadequacies rather than on situations beyond their control. By contrast, people blame their own bad performance on situational factors. *See generally* Patrick Healy, *The Fundamental Attribution Error: How It Affects Your Organization and How to Overcome It*, HARV. BUS. SCH. ONLINE (June 8, 2017), <https://online.hbs.edu/blog/post/the-fundamental-attribution-error> [<https://perma.cc/FM5H-UYFM>].

³⁸DEKKER, *supra* note 36, at 151 (citing FRIEDRICH NIETZSCHE, *TWILIGHT OF THE IDOLS: OR HOW TO PHILOSOPHIZE WITH A HAMMER* (1889)).

³⁹*Id.* at 152.

⁴⁰*See, e.g.*, James Reason, *Understanding Adverse Events: Human Factors*, 4 QUALITY HEALTH CARE 80, 80 (1995).

⁴¹*Id.* at 83.

⁴²*Id.* at 84.

A. Complexity and Organizational Accidents

In 1979, reactor No. 2 of the Three Mile Island Nuclear Generating Station near Harrisburg, Pennsylvania partially melted down, causing the most serious radiation leak in the history of the U.S. commercial power plant industry.⁴³ The accident resulted in multiple investigations, commissions, books, articles, and lawsuits all seeking to understand what went wrong.⁴⁴ The accident and the desire to identify its causes inspired Charles Perrow's seminal book with the counterintuitive title "Normal Accidents."⁴⁵ Perrow argued that where high-risk technologies are involved, some accidents are "inevitable," no matter how effective are conventional safety devices.⁴⁶ This has to do with the way failures in the system can interact and the way systems are tied together.⁴⁷ Importantly, he argues, this "interactive complexity" is a characteristic of the *system*, not the *operator*.⁴⁸

The key to safety in complex systems is to focus on the "properties of systems themselves, rather than on the errors that owners, designers, and operators make in running them."⁴⁹ Perrow faulted conventional accident explanations for focusing solely on such causes as "operator error; faulty design or equipment; lack of attention to safety features; lack of operating experience; inadequately trained persons; failure to use advanced technology; [or] systems that are too big, underfinanced, or poorly run."⁵⁰ He argued that this myopic attention to individual failures or weaknesses misses important insights about the way risks interact and the way complex, nonlinear systems function.⁵¹ As I explain more fully below, systems that are "complex" and "tightly coupled" rather than "linear" and "loosely coupled" are the most susceptible to systems accidents of the sort that occurred at Three Mile Island.

Additional catastrophes in the 1980s involving complex, technological operations⁵² brought increased attention to Perrow's work on systems accidents, including a focus on human failures in such systems.⁵³ Whereas fifty years ago

⁴³ PERROW, *supra* note 19, at 15.

⁴⁴ *Id.* at 16.

⁴⁵ *See generally id.*

⁴⁶ *Id.* at 3.

⁴⁷ *Id.* at 4.

⁴⁸ *Id.*

⁴⁹ PERROW, *supra* note 19, at 63.

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² Incidents included the Bhopal methyl isocyanate tragedy of 1984, the Challenger and Chernobyl disasters of 1986, the capsizing of the Herald of the Free Enterprise, the King's Cross tube station fire in 1987, and the Piper Alpha oil platform explosion in 1988. Detailed analyses of these and other catastrophic accidents led to an increasing awareness that "latent errors" as opposed to active human errors "pose the greatest threat to the safety of a complex system." *See* REASON, HUMAN ERROR, *supra* note 33, at 173.

⁵³ Theoretical and methodological developments in cognitive psychology also spurred interest in the study of human error. *See id.* at 50.

investigations of a major tragedy, such as a plane crash, would have ended by identifying the “proximal cause” at the “sharp end” of the causal chain, i.e., pilot error, today neither investigations nor organizational leaders would end there. Today it is understood that rather than being the “main instigators” of a harmful incident, operators (even those contributing their own mistakes) *inherit* system defects resulting from preexisting conditions such as poor design, faulty installation or maintenance, inadequate supervision, or bad management decisions.⁵⁴ Thus even culpable operators add “the final garnish to a lethal brew whose ingredients have already been long in the cooking.”⁵⁵ Moreover, the category of “human factors” encompasses much more than those associated with the “front-line operation of a system.”⁵⁶ Increasingly, experts agree that attempts to discover and neutralize *system* defects may have a greater beneficial effect upon system safety than will localized efforts to minimize active errors.⁵⁷

The implications of this organizational literature for safety in policing are profound. The point is not that safety cannot be improved at the operator level, but that improving safety at that level will never solve the problem if latent defects and failures plague the entire system. While individual prosecutions and lawsuits are important for accomplishing other goals, they may be the wrong avenue for achieving what we all want the most: fewer police shootings.

B. Policing as a Complex System

According to Perrow, the kind of system that is most likely to have a systems accident is one that is complex (as opposed to linear) and tightly (as opposed to loosely) coupled.⁵⁸ The first variable captures the relative interactiveness of the system: do its parts interact in a simple, linear fashion or do the parts serve multiple functions, interacting in a more complex way?⁵⁹ Linear interactions overwhelmingly predominate in all systems; even the most complex systems comprise mostly linear, planned, visible interactions.⁶⁰ Conversely, while all organizations have many parts that interact with each other, the key determinant of a complex system is whether these interactions are expected and obvious, or unexpected and hidden.⁶¹

The consummate example of a linear system is manufacturing, specifically ordinary assembly-line production.⁶² The equipment in the production line is

⁵⁴ *Id.* at 173.

⁵⁵ *Id.*

⁵⁶ *Id.* at 174.

⁵⁷ *Id.* at 173.

⁵⁸ See PERROW, *supra* note 19, at 4.

⁵⁹ *Id.* at 78.

⁶⁰ *Id.* at 75.

⁶¹ *Id.* Even the most linear systems will have at least one source of complex interactions: the environment in which the system operates. *Id.*

⁶² See *id.* at 86–87.

spread out and the steps are discrete and sequential.⁶³ A failed component can easily be segregated.⁶⁴ There are few unintended or unknown feedback loops in the process.⁶⁵ Sources of information about the functioning of the system tend to be direct and straightforward.⁶⁶ Personnel on a simple production line are usually generalists who can rotate, bid on various jobs, or fill in for other people.⁶⁷ Another example of a linear system is a trade school, where classes are taken in sequence.⁶⁸

By contrast, complex systems tend to have unexpected connections and interactions that were not intended or built into the system, and that operators could not fully anticipate or guard against.⁶⁹ A nuclear power plant is a good example of a complex system.⁷⁰ Unlike assembly line manufacturing, equipment in a complex system is tightly spaced and not linear.⁷¹ Components are not in a production sequence and they often have multiple modes of connection with other components.⁷² There are unfamiliar, sometimes “unintended feedback loops.”⁷³ Information sources about how the system is functioning are often “indirect and inferential.”⁷⁴ Operators and other personnel tend to be specialists, and there is very little substitutability among jobs.⁷⁵

Another, somewhat different example of a complex system, and one more like a police department, is a university. Universities have multiple functions: classroom teaching, vocational training, research, public service, etc. These interact in unexpected, synergistic, creative, or disruptive ways. Consider, for example, what might happen if university administrators deny tenure to a popular teacher allegedly because her research did not measure up. The tenure denial might spark protests by students who highly value her classroom teaching. It might also engender insecurity among other untenured faculty, who worry that their research will be found wanting. In addition, imagine the teacher runs a public service program that is well-known and valued in the community. The mayor and other community leaders are up in arms that the program might be terminated. The local paper covers the story and some private donors threaten to withdraw their financial support for the university if the case is not

⁶³ *See id.*

⁶⁴ *See* PERROW, *supra* note 19, at 86–87.

⁶⁵ *See id.*

⁶⁶ *See id.*

⁶⁷ *Id.*

⁶⁸ *Id.* at 93–94.

⁶⁹ *See id.* at 78.

⁷⁰ For a detailed description of the complex, nonlinear way in which the accident at Three Mile Island occurred, see PERROW, *supra* note 19, at 15–31.

⁷¹ *See id.* at 83.

⁷² *Id.* at 82–83.

⁷³ *Id.* at 82.

⁷⁴ *Id.* at 83.

⁷⁵ *Id.* at 87.

reconsidered. The failure to tenure one teacher has produced a whole set of unexpected results and problems for university administrators.⁷⁶

Despite being complex, however, a university is “loosely” rather than “tightly” coupled. This is the second determining variable for the likelihood of systems accidents. “Tight coupling” is a mechanical term used by engineers, which means that there is no “slack or buffer or give between two items.”⁷⁷ In other words, whatever happens in one automatically and directly affects what happens in the other.⁷⁸

Tightly coupled systems have certain characteristics that make them more susceptible to systems accidents.⁷⁹ Because complex systems do not tolerate delay and must proceed in particular and invariant sequences, they are unable to handle failures and errors without serious consequences.⁸⁰ Tightly coupled systems have very little flexibility.⁸¹ Their overall design permits only one way to reach the production goal. “Quantities must be precise; resources cannot be substituted for one another; wasted supplies may overload the process; failed equipment entails a shutdown because the temporary substitution of other equipment is not possible.”⁸² One of the most important differences between tightly and loosely coupled systems is the inability of the former to recover from failures.⁸³ In loosely coupled systems there is a better chance that spur-of-the-moment fixes and substitutions can be found even if not planned ahead of time.⁸⁴ By contrast, in complex systems buffers, redundancies and substitutions cannot be improvised but must be created in advance.⁸⁵

Returning to the university example, Perrow argues that while universities are complex, they are loosely rather than tightly coupled.⁸⁶ In the case of the fired teacher, he says, there is ample slack (and time) to limit the impact of the negative tenure decision.⁸⁷ For example, administrators can meet with students to hear their complaints and explain the reasons for the tenure decision. Students can be invited into the process of interviewing a new scholar for the department. Faculty can be given clear guidelines about future research requirements. Community members can be reassured that someone will take over the running of the public service program. Funders can be educated about the careful process

⁷⁶ This example is drawn, with some adaptations, from PERROW, *supra* note 19, at 98–99.

⁷⁷ *Id.* at 90.

⁷⁸ Sociologists and psychologists adopted the term in the mid-1970s to describe whether a particular remedial program was tightly (or only loosely) correlated with intended changes in the behavior of students. *See id.*

⁷⁹ *See id.* at 94.

⁸⁰ *Id.*

⁸¹ *See id.*

⁸² PERROW, *supra* note 19, at 94.

⁸³ *See id.* at 95.

⁸⁴ *See id.*

⁸⁵ *Id.* at 94–95.

⁸⁶ *Id.* at 98.

⁸⁷ *See id.* at 99.

followed in the tenure decision.⁸⁸ These actions have the potential to prevent harmful fallout from a controversial tenure decision.

Applying these insights to law enforcement, it seems clear that policing is more like a university than it is like a linear manufacturing line. The policing context has a high level of interactive complexity. Police organizations have many goals and tasks; for example, investigating crimes, preventing crimes, promoting public safety, enforcing traffic laws, responding to citizen reports and complaints, conducting public welfare checks, leading educational programs in schools and other institutions, and taking mentally ill people into protective custody. In addition, policing priorities may be affected by city officials seeking to use law enforcement to raise money through increased ticket writing or by penalties or promotion metrics that reward aggressive policing.

These goals, actions and priorities intersect in complicated ways. Moreover, complexity arises whenever police officers face circumstances, citizen responses, or reactions by fellow officers that are unexpected or unanticipated.⁸⁹ When a police officer stops a driver with a broken tail light, or knocks on a door to execute a search warrant, or answers a public welfare call, the officer cannot be certain of the circumstances that await him. A welfare check can lead to an investigation or arrest for illegal activity. An automobile stop for a minor offense can result in threatened or perceived force by a suspect, a fatal shooting, and riots in the surrounding community. Police responding to a call regarding a mentally ill person face unique uncertainties requiring unique skills. Multiple officers responding to an emergency may have difficulty communicating their intentions, coordinating their actions, or anticipating their interactions. That police have multiple, intersecting and sometimes conflicting goals and function in an uncertain, rapidly changing environment means that failures and mistakes take uncertain paths that are difficult to anticipate and often impossible to manage or control.

While policing is like a university in its complexity, it is unlike a university in that policing is a much more tightly coupled system, meaning that there is very little slack for correcting mistakes before they result in harm. Recall our

⁸⁸ On the other hand, consider the series of events that followed the forced resignation of a popular university president by a subgroup of the board of visitors of that institution. See Richard Pérez-Peña, *Ousted Head of University Is Reinstated in Virginia*, N.Y. TIMES (June 26, 2012), <https://www.nytimes.com/2012/06/27/education/university-of-virginia-reinstates-ousted-president.html> [<https://perma.cc/RTS9-2MU5>]. The resignation resulted in student and faculty protests and marches, a statement by the faculty senate decrying the actions and demanding the president's reinstatement, a meeting of the full board of visitors, reactions by the state legislature that partially funds the school, weigh-in by the governor, eventual reinstatement of the president, and investigation of the governance of the university by the higher education accrediting body. *Id.* No one could have predicted this series of events! In certain circumstances, it seems, even relatively loosely coupled systems can sometimes suffer systems accidents. (I do not mean to suggest that the reinstatement of the University of Virginia's president was itself a mistake.)

⁸⁹ See Lawrence W. Sherman, *Reducing Fatal Police Shootings as Systems Crashes: Research, Theory, and Practice*, 1 ANN. REV. CRIMINOLOGY 421, 435 (2018).

example of the teacher not granted tenure. While tight coupling occurs on a continuum, as a general matter, university administrators can anticipate fallout from a potentially unpopular decision, and they have time and opportunity to intervene against harmful consequences. By contrast, circumstances in the policing context tend to be fast-moving, uncertain, and unpredictable, making it very difficult to intervene once potentially hazardous events have been set in motion. Officers have little time to think and limited options to act in the heat of the moment. Whatever constructive actions police are able to take in such circumstances will depend upon reflex actions, training, and discipline rather than reasoned intervention to address the particular system breakdown at hand. These distinctions become vitally important when designing preventative measures to address harm-causing incidents in policing.⁹⁰

Police face at least two “production pressures” that contribute to the tight coupling that characterizes law enforcement.⁹¹ The first is the pressure to “move on”; to finish each policing task quickly and proceed to the next. Police officers experience a constant pressure to triage their time, always wondering whether they should be answering another call or helping out their colleagues at another location, and worrying that they will be judged by their peers for taking too much time with any particular task. According to police scholar Lawrence Sherman, this results in a “dominant occupational culture” best described as “urgency,” the perceived need to finish each task quickly and resume “readiness to provide immediate assistance elsewhere to those who need it most.”⁹² The second production pressure is the necessity to “contain risk.”⁹³ This pressure is created by the tight coupling between the behavior of non-compliant citizens and the potential risks such behavior poses to the officer and others.⁹⁴ Both production pressures create incentives to move in quickly and to move in close.⁹⁵ In turn, both of these actions increase the tightness of coupling in the social system by escalating the situation and reducing the possibilities for preventing harm.⁹⁶

C. Accident Prevention in Complex Systems

That policing is a relatively complex and tightly coupled system means that it is especially susceptible to organizational or systems accidents.⁹⁷ A systems

⁹⁰ See *infra* Part II.C.

⁹¹ Sherman, *supra* note 89, at 436. By production pressure, I mean the pressure to complete the job of producing the product at issue. In policing the “product” is public safety—or more narrowly, responding to all challenges to public safety—rather than widgets.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ See Sherman, *supra* note 89, at 434.

accident “involve[s] the unanticipated interaction of multiple failures” in a complex system.⁹⁸ While such an accident may have one active proximal cause—such as a pilot or air traffic controller whose error resulted in a plane crash—it has many other, latent causes that interacted in complex and unanticipated ways with the errors of the operator.⁹⁹ In this way of thinking, the erring operator is usually best thought of not as an instigator of the accident but as an inheritor of preexisting system defects, such as faulty design, installation, maintenance, and management.¹⁰⁰

Some latent defects are traceable to human error, but others are more difficult to attribute.¹⁰¹ Latent defects contribute to the potential of accidents by increasing the likelihood of active failures, for example, by increasing the potential for errors or violations, or by aggravating the consequences of unsafe acts.¹⁰² Importantly, these system defects were in place before the accident sequence began.¹⁰³ They are weak spots whose accident-causing potential is generally kept in check.¹⁰⁴ But these preexisting weaknesses can combine with external circumstances to bring about a catastrophic incident.¹⁰⁵

The organizational accident literature leads to some important insights that should frame our thinking about solutions to accidents in complex systems, including policing. *First*, the tendency to identify as the sole or primary causer of an accident the proximal, active causer—usually a front-line operator—is woefully inadequate if the purpose is to prevent future accidents.¹⁰⁶ Ironically, to the extent an accident resulted from the confluence of multiple factors that are unlikely to recur, a single-minded effort to prevent repetition of the same specific, active errors will do little to improve the safety of the system as a whole.¹⁰⁷ *Second*, while it seems intuitive that it is easier to change human

⁹⁸ PERROW, *supra* note 19, at 70.

⁹⁹ REASON, HUMAN ERROR, *supra* note 33, at 173.

¹⁰⁰ *Id.* at 173–74.

¹⁰¹ *See id.* at 173.

¹⁰² REASON, MANAGING THE RISKS OF ORGANIZATIONAL ACCIDENTS, *supra* note 33, at 11.

¹⁰³ *Id.* at 12.

¹⁰⁴ *See id.* at 11.

¹⁰⁵ *See id.* at 9. James Reason dubbed this the “Swiss cheese” theory of accident. *Id.* Imagine that you have a package of ten slices of Swiss cheese in an even stack. Although each of the pieces of cheese has multiple holes in it, you cannot put your eye to any one of the holes in the first slice and see through to the other side. The holes in each slice are in different places. Now imagine that each slice is a subpart or component of a complex system that would need to fail for an accident to occur. The holes are weak spots that predispose that particular component to fail in some way. The only way that the accident will occur is if all the holes are lined up so that all of the potential failures occur at the same time. In other words, the accident likely resulted from the unique confluence of multiple necessary, but singly insufficient factors. *See id.*

¹⁰⁶ *See* REASON, HUMAN ERROR, *supra* note 33, at 216.

¹⁰⁷ *Id.* at 174.

beings than systems, scientific research suggests the opposite.¹⁰⁸ While human error can be reduced to some extent by retraining, discipline, etc., it is inevitable that even the best-trained and most well-intentioned human beings will continue to make mistakes from time to time.¹⁰⁹ Many sources of human error result from psychological factors such as inattention, mismanagement, forgetfulness, preoccupation, and anxiety, which are hard to control or eliminate.¹¹⁰ While we cannot completely eliminate human error, we can change the circumstances in which fallible human beings work, particularly the circumstances that increase the likelihood of operator error or aggravate the consequences of unsafe acts.

III. PREVENTING ORGANIZATIONAL ACCIDENTS

As noted in Part II, accident investigations in the past tended to focus almost entirely on human operator errors and equipment failures. A series of catastrophic accidents, however, led investigators to recognize that many of the underlying causes of these incidents were latent within the system long before the active errors occurred.¹¹¹ This led to the growing realization that “attempts to discover and neutralise these latent failures [could] have a greater beneficial effect upon system safety than . . . localised efforts to minimise active errors.”¹¹² In particular, investigators realized that attempting to weed out or remove so-called “accident prone” human actors or “bad apples” was not the most effective strategy for preventing accidents.¹¹³

James Reason is one of the pioneers of this theory of human error and organizational processes. His error classification and models of systems breakdown laid the groundwork for putting these ideas into practice across multiple domains, including commercial aviation, nuclear power generation, process plants, railways, marine operations, financial services, and healthcare organizations.¹¹⁴ His insights provided the scholarly architecture for the

¹⁰⁸ REASON, MANAGING THE RISKS OF ORGANIZATIONAL ACCIDENTS, *supra* note 33, at 129.

¹⁰⁹ *Id.* at 129.

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² REASON, HUMAN ERROR, *supra* note 33, at 173. For a brief history of modern research on accidents and causation from the early 20th century into the 21st, demonstrating the move from single causes to multiple causes and from human causes to systems causes and nonblaming review, see generally THOMAS G.C. GRIFFIN ET AL., HUMAN FACTORS MODELS FOR AVIATION ACCIDENT ANALYSIS AND PREVENTION 26–56 (2015).

¹¹³ See SIDNEY DEKKER, THE FIELD GUIDE TO UNDERSTANDING ‘HUMAN ERROR’ 11–13 (3d ed. 2014).

¹¹⁴ See generally Armacost, *supra* note 15 (criticizing the “bad apple” explanation for police misconduct); REASON, HUMAN ERROR, *supra* note 33 (examining human errors and the field of human error study); REASON, MANAGING THE RISKS OF ORGANIZATIONAL ACCIDENTS, *supra* note 33 (discussing organizational accidents and how to manage the risks associated with them); REASON, ORGANIZATIONAL ACCIDENTS REVISITED, *supra* note 33

development of systemic accident reviews known as “sentinel event review” (SER) and “root cause analysis” (RCA).¹¹⁵

A “sentinel event” is a “significant negative outcome that: [s]ignals underlying weaknesses in the system or process[;] [i]s likely the result of compound errors[; and m]ay provide, if properly analyzed and addressed, important keys to strengthening the system and preventing future adverse events or outcomes.”¹¹⁶ Sentinel event review often employs the tool of “root cause analysis” to identify what, how and why something happened, with the goal of preventing its recurrence.¹¹⁷

RCA is designed to investigate and categorize the “root causes of events with safety, health, environmental, quality, reliability and production impacts.”¹¹⁸ The goal of RCA is to determine not only what and how an event happened, but also why it happened.¹¹⁹ Only by knowing the “why” can investigators identify “workable corrective measures that prevent future events of the type observed.”¹²⁰ Identifying root causes requires the analyst to go behind the visible problem—usually the last causer—to identify first-level and second-level and third-level causes, i.e., causes that came before the most proximal, human causer.¹²¹ The overall goal of SER is to investigate significant, unexpected harm-causing events and to use the knowledge gained from the review to create barriers against future harm-causing errors.¹²²

(expanding upon developments in the field of organizational accidents). For a general description of Reason’s work, see *Reason*, SAFETY LEADERS, *supra* note 33.

¹¹⁵ As will be explained in more detail below, “root cause analysis,” which applies a linear investigative strategy in pursuit of just one cause, has been criticized as ineffective as a systems analysis tool. To the extent that RCA is applied in this narrow way, I agree with these criticisms; however, it can and often is employed much more broadly as one tool toward pursuit of systemic causes. In this Article, I assume the broader use of RCA. Risk management scholars and practitioners have created numerous frameworks for systems-oriented accident review, but most seem to trace their origins to some version of Reason’s framework.

¹¹⁶ *Sentinel Events Initiative*, *supra* note 29.

¹¹⁷ See James J. Rooney & Lee N. Vanden Heuvel, *Root Cause Analysis for Beginners*, 37 *QUALITY BASICS* 45, 45 (2004). American Society for Quality (ASQ) is a global, professional association that promotes the use of techniques to improve organizational quality. *About ASQ*, AM. SOC’Y FOR QUALITY (Sept. 4, 2019), <https://asq.org/about-asq> [<https://perma.cc/4CMZ-4ZN3>]. It has over 80,000 members in 150 countries. *Id.* ASQ provides its members with certification, training, publications, conferences, and other services. *Id.*

¹¹⁸ Rooney & Vanden Heuvel, *supra* note 117, at 45.

¹¹⁹ *Id.*

¹²⁰ *Id.* Note that a root cause is one over which management has control and for which there is a workable solution. *Id.* at 46.

¹²¹ See generally *id.*

¹²² LEAH POPE & AYESHA DELANY-BRUMSEY, VERA INST. JUSTICE, *CREATING A CULTURE OF SAFETY: SENTINEL EVENT REVIEWS FOR SUICIDE AND SELF-HARM IN CORRECTIONAL FACILITIES 1* (Dec. 2016).

Traditional RCA was sometimes understood to involve a purely linear investigative strategy designed to find a single root cause that was local enough to be mitigated by the investigating institution or organization.¹²³ These assumptions about the nature of RCA have led to vigorous criticism by organizational management scholars and practitioners.¹²⁴ As applied by systems-oriented risk managers, RCA must not be so limited.¹²⁵ It is understood and expected that investigation of an accident involving a complex system will reveal multiple, nonlinear chains that lead to multiple “root causes.” In addition, while incident-specific RCA continues to define a root cause as one over which management has control—to ensure that the resulting action plan can actually be implemented—organizational management scholars embrace a broader causal analysis. Systems-oriented review is designed to identify not only incident-specific and institution-specific causes, but also systems-wide causes that may involve broader patterns that transcend organizational and institutional boundaries.

A. *Lessons from Aviation*

This kind of systems-oriented review has been adopted and perfected in various industries, including in commercial aviation, nuclear energy, and medicine. Commercial aviation, which has enjoyed a dramatic increase in safety over the past few decades, is the poster child for the success of proactive, forward-looking, systems-oriented review of harm-causing incidents.¹²⁶ Airline safety has improved in every decade since the 1950s.¹²⁷ In 1959 an individual would have faced a chance of being in a fatal accident in one out of every 25,000 departures.¹²⁸ Today the odds of dying in an airline crash in the U.S. or European Union are calculated to be only 1 in 29 million.¹²⁹ Even though the number of worldwide flight hours has doubled over the past 20 years—from approximately 25 million in 1993 to 54 million in 2013—in the same period the

¹²³ See Rooney & Vanden Heuvel, *supra* note 117, at 48.

¹²⁴ See, e.g., Mohammad Farhad Peerally et al., *The Problem with Root Cause Analysis*, 26 *BMJ QUALITY & SAFETY* 417, 418 (2017).

¹²⁵ As root cause analysis has long been associated with the kind of systems review advocated by organizational management scholar James Reason and investigators who follow his insights, it was never intended to describe a linear, single root cause strategy. While the term continues to be used, some scholars and practitioners have urged the alternative term “systems analysis” to avoid misunderstanding. In this Article, I use the term “root cause analysis” in this broader sense, to connote a structured, systems-oriented approach.

¹²⁶ ALLIANZ, *GLOBAL AVIATION SAFETY STUDY* 4 (2014).

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ *Id.*

number of airflight-caused fatalities fell from approximately 450 to 250 per year.¹³⁰

This enormous increase in airline safety has resulted from a combination of factors, including dramatic improvements in aircraft engines and design as well as the advent of electronics, most notably the introduction of digital instruments.¹³¹ Higher standards of training for flight crews, improved air traffic technology, and better collision avoidance systems have also had an impact.¹³²

One of the most important factors generating the dramatic improvement in airline safety is that commercial aviation has a sophisticated program of systematic investigations of airline accidents, which is viewed as a model for other industries.¹³³ Investigations come from two sources: under National Transportation Safety Board (NTSB) regulations, all “accidents” and certain “incidents” must be reported to the NTSB,¹³⁴ which was established in 1967 to conduct independent investigations of all civil aviation accidents in the United States.¹³⁵ The NTSB immediately sends a “go team” of investigators and specialists to the accident site to collect and analyze information.¹³⁶ The team ultimately drafts a report for the Board, including safety recommendations based on the findings of the investigation.¹³⁷ The issuance of safety recommendations is the most important part of the NTSB’s mandate, and may address deficiencies discovered during the investigation, even if they did not contribute to the accident.¹³⁸ The Board is required to address safety issues immediately, often issuing safety recommendations before the investigation is complete.¹³⁹ The final report, which contains details about the accident, analysis of the factual

¹³⁰ Narinder Kapur et al., *Aviation and Healthcare: A Comparative Review with Implications for Patient Safety*, 7 J. ROYAL SOC’Y MED. OPEN 1, 1 (2015).

¹³¹ *How Aviation Safety Has Improved*, ALLIANZ, <https://www.agcs.allianz.com/news-and-insights/expert-risk-articles/how-aviation-safety-has-improved.html> [https://perma.cc/MWH6-5QZN].

¹³² *Id.*

¹³³ *Id.*

¹³⁴ 49 C.F.R. § 830.5 (2018).

¹³⁵ See *The Investigative Process*, NAT’L TRANSP. SAFETY BOARD, <https://www.nts.gov/investigations/process/Pages/default.aspx> [https://perma.cc/4S4G-EP8F].

¹³⁶ *Id.* The NTSB “go team” consists of from three to four to as many as twelve or more specialists from the Board’s headquarters in Washington, D.C. who serve on a rotating basis. *Id.* Each of the “go team” investigators has a working group composed of experts in eight different areas of expertise—operations, structures, powerplants, systems, air traffic control, weather, human performance, and survival factors—and includes representatives from various stakeholder groups, including the Federal Aviation Administration (FAA), the pilots and flight attendant’s unions, airframe and engine manufacturers, etc. *Id.* The team begins its investigation at the crash site (remaining for days or even weeks), continues its analysis at NTSB headquarters in Washington, D.C., and drafts a report that goes to the NTSB with safety recommendations. *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

record, conclusions and the probable cause of the accident, and the related safety guidance, is posted on the NTSB website.¹⁴⁰

Since its creation, the NTSB has investigated more than 140,500 aviation accidents and issued thousands of safety recommendations, more than 73 percent of which have been adopted in whole or in part by the entities to which they were directed.¹⁴¹ Although most NTSB reports focus on one accident, the NTSB also publishes reports that address deficiencies that are common to a set of similar accidents.¹⁴² As I explain in more detail below, this kind of pattern-oriented analysis is essential to successful risk management.

While investigation of airline *accidents* is crucial and can lead to forward-looking safety recommendations, this learning comes only in the face of catastrophe. In addition, absent centralization and communication of findings, one-by-one accident investigation can obscure patterns of errors leading to repeated, similar accidents.¹⁴³ This lesson was brought home to the airline industry in December 1974, when the flight crew of TWA Flight 514, inbound to Dulles Airport in a cloudy sky, misunderstood the clearance from traffic control and crashed into the Virginia mountains, killing everyone on the plane.¹⁴⁴ Upon investigation, it was discovered that six weeks earlier, a United Airlines flight crew had experienced the same clearance misunderstanding and had only narrowly missed a similar crash during a nighttime approach.¹⁴⁵ A warning notice had gone out to all United Airlines pilots, but there was no mechanism for communicating this information more widely.¹⁴⁶ The creation of the Aviation Safety Reporting System (ASRS) was the first step in establishing a national incident-reporting system, which proved crucial to continued advances in airline safety.¹⁴⁷

ASRS was designed by the FAA to analyze voluntarily submitted incident reports from pilots, air traffic controllers, dispatchers, cabin crew maintenance

¹⁴⁰ *Id.*; see also *Accident Reports*, NAT'L TRANSP. SAFETY BOARD, <https://www.ntsb.gov/investigations/AccidentReports/Pages/AccidentReports.aspx> [https://perma.cc/7JJU-L25M] (containing a dynamic list of accident reports, updated daily).

¹⁴¹ NAT'L TRANSP. SAFETY BD., ANNUAL REPORT TO CONGRESS 2014 3 (Dec. 2015), https://www.ntsb.gov/about/reports/Documents/2014_Annual_Report.pdf [https://perma.cc/6XVW-PXPE]. Despite its contributions, the NTSB has been the subject of various criticisms over the years. See, e.g., CYNTHIA C. LEBOW ET AL., RAND INST. FOR CIVIL JUSTICE, SAFETY IN THE SKIES: PERSONNEL AND PARTIES IN NTSB AVIATION ACCIDENT INVESTIGATIONS 23 (2000), https://www.rand.org/content/dam/rand/pubs/monograph_reports/2005/MR1122.pdf [https://perma.cc/7KAF-XR28].

¹⁴² NAT'L TRANSP. SAFETY BD., *supra* note 141, at 3.

¹⁴³ In addition, as aviation safety has continued to improve, there are fewer serious accidents to provide opportunities for continuous and significant improvements, making reporting of near misses and other incidents crucial.

¹⁴⁴ This incident is described in STEPHEN K. CUSICK ET AL., COMMERCIAL AVIATION SAFETY 252 (6th ed. 2017).

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

crew, maintenance technicians and others.¹⁴⁸ These reports identify hazardous or dangerous conditions recognized by ground-level practitioners and experts as posing risks to safety.¹⁴⁹ In order to encourage voluntary reporting, reports sent to ASRS are held in strict confidence and may not be used by the FAA in enforcement actions against reporters.¹⁵⁰

From its inception in 1975, ASRS reporting has been robust, with an average intake of over 8000 reports every month, and over 1.5 million reports in its forty-three-year history.¹⁵¹ Each incident report is read and analyzed by at least two of ASRS's corps of aviation safety experts, composed of experienced pilots, air traffic controllers, and mechanics.¹⁵² Their first priority is to flag any aviation hazards identified, and send an alerting message to the appropriate FAA office or aviation authority.¹⁵³ The analysts then classify each report and uncover the causes underlying the reported incident.¹⁵⁴ The original report and the expert's observations are incorporated into the ASRS database.¹⁵⁵ ASRS has also conducted over sixty research studies that seek to effect incremental improvement in aviation safety on a system-wide level.¹⁵⁶ ASRS incident reports are viewed as one of the world's largest sources of information on aviation safety and human factors.¹⁵⁷

The history of safety investigations in commercial aviation illustrates two moves that have become central features of risk management in industries as diverse as health care, nuclear power and banking. The first is the move from the reactive strategy that investigates only full-fledged accidents—the “fly-

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ See *Confidentiality and Incentives to Report*, NAT'L AERONAUTICS & SPACE ADMIN. (Sept. 4, 2019), <https://asrs.arc.nasa.gov/overview/confidentiality.html> [<https://perma.cc/LDN9-LEUQ>]. The FAA has also elected to waive fines and penalties of unintentional violations of FAA statutes and regulations that are reported to ASRS, unless those violations involved criminal offenses or certain kinds of accidents. *Id.* (internal citation omitted); see also 14 C.F.R. § 91.25 (2018).

¹⁵¹ NAT'L AERONAUTICS & SPACE ADMIN., AVIATION SAFETY REPORTING SYSTEM PROGRAM BRIEFING 13 (July 2019), https://asrs.arc.nasa.gov/docs/ASRS_Program_Briefing.pdf [<https://perma.cc/7B9T-PHEK>]. The reports are received electronically and then stripped of all identifying information to preserve anonymity. *Id.* at 17–18.

¹⁵² This description of the investigation is taken from the Aviation Safety Reporting System website. *Report Processing*, NAT'L AERONAUTICS & SPACE ADMIN., <https://asrs.arc.nasa.gov/overview/report.html> [<https://perma.cc/E9GP-3W2N>]. ASRS distributes this information through safety alerts, publications, and database search requests. *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ NAT'L AERONAUTICS & SPACE ADMIN., *supra* note 151, at 21.

¹⁵⁷ *Id.* at 15. In addition, every major airline maintains its own safety teams with experienced investigators who monitor flight safety and lead inquiries into circumstances that implicate safety concerns. See, e.g., CARL MACRAE, CLOSE CALLS: MANAGING RISK AND RESILIENCE IN AIRLINE FLIGHT SAFETY 27 (2014).

crash-fix-fly” approach¹⁵⁸—to investigating close calls and near miss *incidents* as well.¹⁵⁹ Historically, only the costliest and most harm-causing events were subjected to detailed investigation to determine causes and contributory factors.¹⁶⁰ In current risk management practice, the whole range of procedural errors, human mistakes, and systems defects are routinely analyzed and investigated.¹⁶¹ “Incidents, or ‘near misses,’” can include instances in which only “partial penetration of defences” occurred or where “all the available safeguards were defeated but no actual losses were sustained.”¹⁶² The proactive approach includes actively looking for potential safety problems by analyzing trends, investigating hazards, and using other methods of scientific inquiry.¹⁶³ There are two potential benefits to looking at near misses, dangerous mistakes and closes calls as well as accidents: First, it provides insight into why some sequences of events result in accidents while other sequences do not.¹⁶⁴ Second, this kind of investigation can uncover circumstances that pose dormant or hidden risks before those risks result in an accident.¹⁶⁵

The second important move in aviation safety management that has served as a model for other disciplines is the move from looking at accidents or incidents one by one, to looking for recurring patterns or risk factors. Aviation investigators constantly work to find “connections and interrelations between individual events” that suggest there is some “common, underlying risk.”¹⁶⁶ Their goal is to identify circumstances or events that appear symptomatic of some persistent organizational problem.¹⁶⁷ The TWA incident described above

¹⁵⁸ ALAN J. STOLZER ET AL., *SAFETY MANAGEMENT SYSTEMS IN AVIATION* 13 (2008). Stolzer, Halford, and Goglia describe three levels of safety risk management: Reactive safety management involves forensic analysis of harm-causing accidents or incidents in order to determine causative or contributory factors that led to the events. *Id.* at 215. Proactive safety management uses “trend analysis, hazard analysis, and other methods of scientific inquiry” to look for potential safety problems before they result in an accident. *Id.* The Aviation Safety Reporting System (ASRS), which promotes active reporting of potential safety hazards, is an example of a proactive program. *Id.* at 53. It is by far the most successful voluntary reporting system, and is widely accepted by virtually all stakeholders in the airline industry, including flight crews, dispatchers, maintenance technicians, and flight attendants. *Id.* For examples of other proactive airline safety programs, see *id.* at 51–53. The third level of safety management goes even farther, for example, using models such as probabilistic risk assessment and data mining to determine where and when the system is likely to fail. *Id.* at 217. See generally CUSICK ET AL., *supra* note 144, at 205–64 (describing reactive versus proactive safety management).

¹⁵⁹ MACRAE, *supra* note 157, at 1.

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² GRIFFIN ET AL., *supra* note 112, at 46.

¹⁶³ STOLZER ET AL., *supra* note 158, at 215.

¹⁶⁴ Clinton V. Oster Jr. et al., *Analyzing Aviation Safety: Problems, Challenges, Opportunities*, 43 RES. TRANSP. ECON. 148, 162 (2013).

¹⁶⁵ *Id.*

¹⁶⁶ MACRAE, *supra* note 157, at 150.

¹⁶⁷ *Id.*

is one example of this strategy, which linked the TWA crash to an almost identical near miss that had occurred just six weeks prior.¹⁶⁸ In addition, proactive investigations of similar incidents or near misses can lead to discovery of dangerous conditions, safety hazards or jeopardous human conduct before a catastrophic accident occurs.¹⁶⁹

B. *Sentinel Event Review in Medicine*

Systems-oriented, root cause analysis has also been applied with good results in medicine, although its use in this context is still evolving. Modern risk management in medicine looks to aviation as its precursor, but prior to applying the aviation model the medical profession employed an earlier version of multidisciplinary accident review.¹⁷⁰ Hospitals have a long tradition of conducting “morbidity and mortality conferences” to review negative patient outcomes and medical errors to better understand how they occurred and how they could have been prevented.¹⁷¹ In early versions, however, these reviews were limited by their backward-looking, “blaming” approach.¹⁷² More recently safety management experts have looked to commercial aviation as a model for more forward-looking, systems-oriented review.¹⁷³

Salient parallels between aviation and medicine make the commercial airline model a good one.¹⁷⁴ Physicians, like pilots, are highly educated for work in “high-risk environments,” they are often forced to make decisions under pressure, and they are “constantly reminded that their mistakes may cost human life.”¹⁷⁵ Both function in complex settings where teams of experts interact with technology, and in both settings, threats to safety can come from a wide range of environmental sources.¹⁷⁶ Also, in medicine as in aviation, safety is critical but financial concerns can affect the commitment of safety resources.¹⁷⁷ Scholars have also identified particular risk-management strategies used in aviation that are deemed transferable to the medical context, for example, aviation teamwork is suitable for adaptation to hospital operation rooms and

¹⁶⁸ CUSICK ET AL., *supra* note 144, at 252.

¹⁶⁹ *See, e.g., id.* at 490.

¹⁷⁰ *See, e.g.,* Kapur et al., *supra* note 130, at 1, 6.

¹⁷¹ *See* POPE & DELANY-BRUMSEY, *supra* note 122, at 2.

¹⁷² U.S. DEP’T OF JUSTICE, OFFICE OF JUSTICE PROGRAMS, THE SENTINEL EVENT INITIATIVE: PROCEEDINGS FROM AN EXPERT ROUNDTABLE 1, 5 (May 21–22, 2013), <https://www.ncjrs.gov/pdffiles1/nij/243586.pdf> [<https://perma.cc/2JYR-4EM9>].

¹⁷³ *See, e.g.,* Kapur et al., *supra* note 130, at 1.

¹⁷⁴ For a detailed chart comparing aviation to medicine, see *id.* at 2. Some authors have expressed reservations about the analogies between aviation and medicine. *See id.* at nn.5–9 (listing references).

¹⁷⁵ Rachel Wilf-Miron et al., *From Aviation to Medicine: Applying Concepts of Aviation Safety to Risk Management in Ambulatory Care*, 12 QUALITY & SAFETY CARE 35, 35 (2003).

¹⁷⁶ Robert L. Helmreich, *On Error Management: Lessons from Aviation*, 320 BMJ 781, 781 (2000).

¹⁷⁷ *Id.*

emergency departments, and the aviation safety reporting has served as a model for voluntary reporting of medical incidents.¹⁷⁸ In addition, the use of checklists and redundancies, which have transformed aviation safety, have been employed to good effect in addressing particular recurrent errors in medicine.¹⁷⁹

An important event that led medicine out of old-school blaming review toward more forward-looking review was the 1999 U.S. Institute of Medicine (IOM) consensus report *To Err is Human: Building a Safer Health System*.¹⁸⁰ It reported the alarming statistic that 44,000 people died every year from preventable errors.¹⁸¹ The key insight of the report was that the majority of medical errors result not from mistakes by individuals but from “faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them;”¹⁸² in other words, from “bad systems rather than bad people.”¹⁸³ This was a transformative concept for medical review of errors.¹⁸⁴ It led the IOM to conclude that mistakes can best be prevented by designing the medical system to “make it harder for people to do something wrong and easier for them to do it right.”¹⁸⁵ The IOM reasoned that “when an error occurs, blaming an individual does little to make the system safer and prevent someone else from committing the same error.”¹⁸⁶ Its recommendations were designed to adopt a more “institutionalized approach that identifies root causes and underlying system failures,”¹⁸⁷ with the goal of reducing medical errors by a minimum of 50% over the succeeding 5 years.¹⁸⁸

The Joint Commission, the oldest and largest standard-setting and accrediting body for healthcare organizations in the world,¹⁸⁹ has since institutionalized a strategy for identifying and analyzing harm-causing medical

¹⁷⁸ *Id.* at 782, 784.

¹⁷⁹ See INST. OF MEDICINE, *TO ERR IS HUMAN: BUILDING A SAFER HEALTH SYSTEM* 158, 162, 171–72, 194 (Linda T. Kohn et al. eds., 2000) [hereinafter IOM REPORT]; Kapur et al., *supra* note 130, at 4–5 (reviewing the literature on use of checklists in preventing medical errors).

¹⁸⁰ See generally IOM REPORT, *supra* note 179.

¹⁸¹ *Id.* at 1. For a summary version of the full report by its authors, see *id.* at 1–5. The report defines medical error as “the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim.” *Id.* at 4. The report lists as common errors: “adverse drug events and improper transfusions, misdiagnosis, under and over treatment, surgical injuries and wrong-site surgeries, suicides, restraint-related injuries or deaths, falls, burns, pressure ulcers, and mistaken patient identities.” NIKI CARVER & JOHN E. HIPSKIND, *MEDICAL ERROR 1* (2019).

¹⁸² CARVER & HIPSKIND, *supra* note 181, at 1.

¹⁸³ U.S. DEP’T OF JUSTICE, *supra* note 172, at 4.

¹⁸⁴ *Id.*

¹⁸⁵ CARVER & HIPSKIND, *supra* note 181, at 1.

¹⁸⁶ IOM REPORT, *supra* note 179, at 5.

¹⁸⁷ POPE & DELANY-BRUMSEY, *supra* note 122, at 2.

¹⁸⁸ IOM REPORT, *supra* note 179, at 4.

¹⁸⁹ *History of the Joint Commission*, JOINT COMMISSION, https://www.jointcommission.org/about_us/history.aspx [<https://perma.cc/437Y-WTBR>].

errors and formulating action plans to prevent such harms from recurring.¹⁹⁰ Since 1996, the Commission has had in place a Sentinel Event Policy, which requires accredited organizations to conduct a systemic review of all sentinel events to determine causal and contributing causes and to formulate an action plan to promote greater safety going forward.¹⁹¹ A sentinel event is defined as a patient safety event (not primarily related to the natural course of the patient's illness or underlying condition) that reaches a patient and results in death, permanent harm, or severe temporary harm.¹⁹² Such events are deemed "sentinel" because they signal that immediate investigation and response is needed.¹⁹³ The goal of sentinel event review, using a revised version of root cause analysis called Root Cause Analysis and Action (RCA²), is to identify and implement "sustainable systems-based improvements" that improve patient safety.¹⁹⁴ As virtually all U.S. hospitals and medical organizations are accredited by the Joint Commission, sentinel event review using RCA² has become the standard of safety for medical providers in this country.¹⁹⁵

RCA² seeks to improve traditional root cause analysis in two ways, first by emphasizing that investigation and analysis must be followed by a concrete action plan, and second by prescribing that analysis and implementation must focus on systems-oriented change.¹⁹⁶ Specifically, RCA² is designed to identify and mitigate "system vulnerabilities" rather than individual errors, on the theory that individual performance is a "symptom" of broader, systems-based problems.¹⁹⁷ Human error simpliciter is never an acceptable root cause because disciplining or retraining a human causer may reduce the risk that the errant actor will repeat his mistake, but it will not reduce the probability that the event

¹⁹⁰ See *Sentinel Event Policy and Procedures*, JOINT COMMISSION, https://www.jointcommission.org/sentinel_event_policy_and_procedures/ [<https://perma.cc/ER2R-MF5M>]. Accredited organizations are "strongly encouraged" but not required to report sentinel events to the Joint Commission, which enables "lessons learned" from the event to be added to the Joint Commission's Sentinel Event databases. *Id.* This contributes to widespread knowledge about harm-causing events and to enhanced opportunities for risk reduction. *Id.*

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ NAT'L PATIENT SAFETY FOUND., *RCA² IMPROVING ROOT CAUSE ANALYSES AND ACTIONS TO PREVENT HARM* i, vii (June 2015), <https://www.ashp.org/-/media/assets/policy-guidelines/docs/endorsed-documents/endorsed-documents-improving-root-cause-analyses-actions-prevent-harm.ashx> [<https://perma.cc/67R4-PES6>]. The overall goal of robust investigations of harm-causing events is a "culture of safety." U.S. DEP'T OF JUSTICE, *supra* note 172, at 4. The Agency for Healthcare Quality and Research at the Department of Health and Human Services has formulated indicators that measure the culture of safety at health institutions, such as whether staff members feel free to speak up if they see others making an error. *Id.* The goal is to "shine a spotlight on errors and create a culture where people are comfortable sharing information on mistakes." *Id.*

¹⁹⁵ See NAT'L PATIENT SAFETY FOUND., *supra* note 194, at vi (listing organizations that endorse the use of RCA).

¹⁹⁶ *Id.* at 1–3.

¹⁹⁷ *Id.* at vii.

will recur with other operators in similar circumstances.¹⁹⁸ Thus the strongest, most effective actions are systems-wide interventions that reduce the inevitable risk that well-trained and well-intentioned human operators will make mistakes. Strong, systems-oriented actions include architectural/physical plant changes, engineering control, simplification of processes, and standardization of equipment.¹⁹⁹ The weakest actions are those directed at directly changing human behavior, such as double checks, warnings, new procedures and re-training.²⁰⁰

Sentinel event, systems-oriented review in medicine has not yet reached the high level of success it has reached in aviation. The reasons for some of its failures in medicine hold important lessons for systems-oriented review in the criminal justice context. One determinative difference between aviation and medicine has to do with the organizational culture of the two contexts with regard to safety: over the past twenty years, aviation has developed a “non-blaming” culture in which incident reporting has become more routine and less threatening.²⁰¹ In addition, aviation is less hierarchical than medicine, which makes joint-responsibility for safety less threatening and more likely.²⁰² Commitment to safety permeates all levels of the business of airlines, whereas safety in medicine continues to be regarded as a specialized priority for some but not the obligation of all.²⁰³ Finally, organizational culture in some medical institutions continues to be a culture of “low expectations,” in which medical personnel fail to correct discrepancies, mistakes and inconsistencies.²⁰⁴ If medical personnel come to expect that they will receive faulty or incomplete information, it may lead them to conclude that “red flags” are not unusual or worrisome.²⁰⁵ They may come to regard them as only repetitions of the poor communication to which they have become accustomed.²⁰⁶

C. *The Importance of Multi-Incident Review*

Sentinel event review of particular, harm-causing events has been an essential feature of systems review in commercial aviation and in medicine. As

¹⁹⁸ *Id.* at 18. Retraining that is focused on the harm-causing event is also inadequate because there is always turnover and a high-profile event is eventually forgotten. *Id.*

¹⁹⁹ *Id.* at 17 (laying out an “action hierarchy” from stronger actions to weaker actions that was developed by the U.S. Department of Veterans Affairs National Center for Patient Safety, which has been “used for decades in many other industries to improve worker safety”); *id.* at 16 (internal citation omitted).

²⁰⁰ *Id.* at 17.

²⁰¹ Kapur et al., *supra* note 130, at 2.

²⁰² *Id.* at 5.

²⁰³ *Id.* at 2.

²⁰⁴ Mark R. Chassin & Elise C. Becher, *The Wrong Patient*, 136 ANNALS INTERNAL MED. 826, 830 (2002).

²⁰⁵ *Id.*

²⁰⁶ *Id.*

described above, the NTSB requires the investigation of all airline accidents and near misses and the Joint Commission requires that hospitals review all “sentinel events.”²⁰⁷

The dramatic success of systems-oriented analysis in these contexts, however, lies in accident investigation that goes *beyond* single incident review. Commercial aviation and medical investigators have increasingly used the information gleaned from individual reviews to identify patterns of repeated, similar errors that were found to have caused repeated, similar accidents.²⁰⁸ In turn, pattern identification has led the way for systems-oriented interventions that have had enormous success in changing the circumstances that lead to predictable, repeated human errors in these contexts.²⁰⁹

Single incident analysis is essential for identifying the lines of causation that uncover the root causes of a particular accident. Employed alone, however, single incident analysis has limited value. Focusing solely on individual events may frustrate an institution’s ability to appreciate its vulnerability to reoccurring harmful errors, some of which may result from easy-to-identify systems causes. Failing to see these easy fixes is to miss the lowest hanging fruit. By contrast, identifying patterns of errors and sharing information among similarly situated institutions or agencies promotes the most efficient and effective investigation of harm-causing events. In addition, prioritizing the investigation of reoccurring errors avoids the risk of investing inordinate resources to prevent a rare event, which may be unlikely to reoccur. In short, investigating and addressing reoccurring errors—by looking at both harmful events and near misses—has huge payoffs for accident reduction.

D. Sentinel Event Review in Criminal Justice

In 2004, twenty-one-year-old Michael Bell was shot in the head by officers of the Kenosha (Wisconsin) Police Department.²¹⁰ Michael had driven home from an evening out and pulled up to the curb at his home when police pulled up behind him.²¹¹ There is no dispute that Michael was unarmed, but the events that led to the shooting were outside the range of the officers’ dashcam and

²⁰⁷ See *How Aviation Safety Has Improved*, *supra* note 131; *Sentinel Event Policy and Procedures*, *supra* note 190.

²⁰⁸ See, e.g., Kapur et al., *supra* note 130, at 7.

²⁰⁹ *Id.*

²¹⁰ Pagan Kennedy, *Why Are Police Officers More Dangerous than Airplanes?*, N.Y. TIMES (Aug. 11, 2017), <https://www.nytimes.com/2017/08/11/opinion/sunday/traffic-stop-police-accident.html> [<https://perma.cc/798F-3JWT>].

²¹¹ *Id.* Police claimed that because Michael “failed to make a complete stop,” they followed him to his house and parked behind him. *Id.* Toxicology screens later demonstrated that Michael had been drinking that night. *Id.* Michael had tangled with one of the three officers sometime before, and was scheduled to appear in court the next day in connection with charges from that incident. Appendix to the Affidavit of Russell Beckman Regarding the Circumstances Surrounding the Possession of the Handgun of Officer Eric Strausbaugh During the Encounter with Michael E. Bell at 38 [on file with *Ohio State Law Journal*].

details were disputed.²¹² What is now clear, however, is that while three officers were trying to subdue Michael against a police vehicle, one yelled, “He’s got my gun,” and moments later a fellow officer shot Michael point blank in the head.²¹³

After the incident, Michael’s father, Michael Bell, Sr., who is a retired lieutenant colonel in the U.S. Air Force and familiar with NTSB investigations of airline accidents, assumed that there would be a similar, detailed, independent investigation of his son’s death.²¹⁴ Instead, the Kenosha police department internal affairs unit spent only 48 hours investigating the incident before concluding that the shooting was justified.²¹⁵ The investigation was apparently conducted without interviewing witnesses or waiting for the forensic evidence to come back from the crime lab.²¹⁶

When the forensic reports came back, and Michael’s fingerprints and DNA were not found on the officer’s gun, Mr. Bell, Sr. hired his own investigators, including a retired police detective from the Kenosha Police Department.²¹⁷ In the course of this investigation, the detective discovered evidence suggesting that the officer’s holstered handgun may have gotten caught in the driver’s side mirror—found to be broken at the base—which caused the tugging the officer interpreted as an effort to disarm him.²¹⁸

In comparing the vigorous investigations of airline accidents to the less independent and comparatively anemic investigations of many police shootings by their departments, Mr. Bell, Sr. was raising an important question: Does aviation have something to teach the criminal justice system about how to investigate harm-causing accidents with an eye toward preventing such events in the future? Significantly, Mr. Bell, Sr. did not blame the officer who fired the shot, concluding that he made an “honest mistake” in thinking that Michael had

²¹² *In Wisconsin, a Decade-Old Police Shooting Leads to New Law*, NPR (Dec. 13, 2014), <https://www.npr.org/2014/12/13/370592433/in-wisconsin-a-decade-old-police-shooting-leads-to-new-law> [<https://perma.cc/749V-6K9V>].

²¹³ *Id.*

²¹⁴ Kennedy, *supra* note 210.

²¹⁵ *In Wisconsin, a Decade-Old Police Shooting Leads to New Law*, *supra* note 212.

²¹⁶ *Id.*

²¹⁷ *Id.* For a record of this investigation, see generally *Evidence & Investigation*, PLEA FOR CHANGE, <https://michaelbell.info/Evidence.html> [<https://perma.cc/57TC-7ABD>] (describing the evidence and investigation of the Michael E. Bell shooting).

²¹⁸ See Affidavit of Russell Beckman Regarding the Circumstances Surrounding the Possession of the Handgun of Officer Erich Strausbaugh during the Encounter with Michael E. Bell at 2, <https://docs.google.com/file/d/0B6SnSBw-2l60ME9ibHI4SWdBN1k/edit> [<https://perma.cc/R5SZ-Y2DX>]. In 2010, the City of Kenosha agreed to pay \$1.75 million dollars to settle a wrongful-death lawsuit by Michael’s family. Kennedy, *supra* note 210. The family used the settlement money to fund a grassroots campaign to pass legislation to mandate that police incidents involving civilian deaths be investigated by outside, independent investigators. *In Wisconsin, A Decade-Old Police Shooting Leads to New Law*, *supra* note 212. The statute is admirable for requiring an independent investigation, but, unfortunately, it does not mandate the systems-oriented review that Mr. Bell, Sr. envisioned from his aviation experience. See WIS. STAT. § 175.47 (2014); Kennedy, *supra* note 210.

ahold of the officer's gun.²¹⁹ What Mr. Bell objected to was the fact that the department failed to conduct a thorough investigation that took seriously all available evidence.²²⁰ Instead it stopped with the conclusion that the shot was "justified."²²¹ A rigorous, systems-oriented sentinel event review of these circumstances would have gone behind the officer's mistake to determine why that mistake occurred. If the gun got caught on the side mirror, did that suggest an equipment design failure? Did it implicate an addressable vulnerability in the way the officer positioned himself so that his gun holster got caught? Was the initial stop justified? Could de-escalation techniques been used to diffuse the situation? Could Michael have been ticketed rather than arrested, in order to avoid the escalation that occurred? These kinds of questions could uncover systems vulnerabilities that could be addressed to make a similar shooting less likely to occur in the future. In other words, that the shooting may have been reasonable (lawful) *at the moment the shot was fired*²²² does not preclude a finding that there were ways it could have been prevented. The list of questions I have outlined suggest there may have been systems vulnerabilities that contributed to the shooting. This is the great benefit of independent, nonblaming, systems-oriented review.

Criminal justice scholars have begun to recognize the promise of systems-oriented review.²²³ Initial interest was spurred by the U.S. Justice Department's landmark 1998 study of the first twenty-eight wrongful convictions exposed by DNA testing²²⁴ and the growing number of such cases that were catalogued by the first Innocence Project.²²⁵

More recently, the National Institute of Justice²²⁶ has launched the Sentinel Events Initiative (SEI) to explore whether the same forward looking, all-stakeholders, multi-disciplinary, nonblaming review employed in medicine, aviation and other contexts could be used to address sentinel events in the criminal justice system.²²⁷ NIJ defines a sentinel event as an "unexpected negative outcome" that signals a possible weakness in the system and is likely caused by "compound errors."²²⁸ Such an event may provide, "if properly

²¹⁹ Kennedy, *supra* note 210.

²²⁰ *Id.*

²²¹ *Id.*

²²² I take no position on the question of whether the shooting was lawful at the moment it occurred.

²²³ See, e.g., Hollway et al., *supra* note 28, at 884.

²²⁴ See generally EDWARD CONNORS ET AL., NAT'L INST. OF JUSTICE, CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL (1996).

²²⁵ For a discussion of this history, see generally James M. Doyle, *Learning from Error in American Criminal Justice*, 100 J. CRIM. L. & CRIMINOLOGY 109 (2010).

²²⁶ The National Institute of Justice is part of the Office of Justice Programs at the Department of Justice.

²²⁷ James M. Doyle, *NIJ's Sentinel Events Initiative: Looking Back to Look Forward*, 273 NIJ J. 1, 1-2 (2013).

²²⁸ *Id.* at 1.

analyzed and addressed—important keys to strengthening the [criminal justice system] and preventing future adverse events or outcomes.”²²⁹ The purpose of the NIJ Sentinel Events Initiative is to “develop a template for how state and local stakeholders could learn from criminal justice errors” and to “provide a platform where stakeholders can disseminate information, accessing each other’s experiences and allowing access by other jurisdictions, including researchers, to knowledge gained from a sentinel review.”²³⁰

In 2013, after two years of preliminary research by NIJ fellow James Doyle,²³¹ the NIJ convened a roundtable of criminal justice experts to consider the applicability of sentinel event review for such negative outcomes as wrongful convictions, erroneous release of dangerous inmates, and cold cases that remain unsolved for too long.²³² Doyle urged his colleagues to consider making multidisciplinary, nonblaming review of errors a regular part of criminal justice practice; to make the errors themselves the mechanism for learning and change.²³³ The 2013 roundtable participants concurred with Doyle’s assessment and urged the NIJ to begin the process of testing the viability of sentinel event review in the criminal justice context.²³⁴

In 2014, NIJ invited jurisdictions around the country to volunteer to review a sentinel event that had occurred in their area of authority.²³⁵ Through a competitive process, three sites were selected: Milwaukee, Philadelphia, and Baltimore.²³⁶ Teams in each of these sites designated and conducted a review of a “justice error”—a sentinel event—that had occurred in their jurisdiction.²³⁷ All three sites successfully completed their reviews, providing the first empirical evidence of the feasibility of adopting SER in the criminal justice context.²³⁸ While retaining promised anonymity about the details of the sentinel event each

²²⁹ *Id.*

²³⁰ U.S. DEP’T OF JUSTICE, *supra* note 172, at 4–5. The publication *Mending Justice: Sentinel Event Reviews* is a special report that describes Doyle’s two-year investigation of the feasibility of sentinel event review in the criminal justice context. NAT’L INST. OF JUSTICE, *MENDING JUSTICE: SENTINEL EVENT REVIEWS 1* (2014).

²³¹ James M. Doyle was a former defense attorney from Boston.

²³² *See* U.S. DEP’T OF JUSTICE, *supra* note 172, at 1, 5, 24. Doyle reflected that the recent wave of DNA exonerations had focused attention on system-wide errors in criminal justice and undermined public confidence in the American public justice system. *Id.* at 2. He noted that some progress had been made in addressing these issues, but that efforts to that point had created best practices for individual actors, while ignoring the complex interactions and system features that together lead to adverse events. *See id.* at 2–3. He deemed this “linear” approach inadequate to address errors in complex systems, including the criminal justice system. *Id.* at 2.

²³³ *See id.* at 3.

²³⁴ Doyle, *supra* note 227, at 1.

²³⁵ NAT’L INST. OF JUSTICE, *PAVING THE WAY: LESSONS LEARNED IN SENTINEL EVENT REVIEWS 2* (Nov. 2015).

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.* at 3.

site chose to review, the NIJ published a detailed report of “lessons learned” across the three SERs.²³⁹

More recently, police scholars John Hollway, Calvin Lee, and Sean Smoot have urged the application of root cause analysis, as it has been applied in aviation, medicine, and other industries, to police shootings.²⁴⁰ They argue, as I do here, that our existing systems for evaluation of past officer-involved shootings by administrative investigations, civilian oversight, and civil and criminal investigation are inadequate for learning how to prevent similar shootings in the future.²⁴¹ They agree that unlike these existing strategies, which are backward-looking and individual-focused, root cause analysis could uncover nonhuman, systemic causes and corresponding systemic remedies that would be more effective in preventing officer-involved shootings.²⁴²

What is missing to this point is a more robust description of what root cause analysis might look like in the context of police-involved shootings, and precisely what kinds of systemic causes—and systemic solutions—root cause analysis might uncover.²⁴³ In what follows, I begin to fill that gap.

²³⁹ *Id.* at 2. The report covered the following topics: Where does a jurisdiction start when thinking about performing a sentinel event review? *Id.* at 3. What kind of event should be reviewed, including some of the benefits and challenges of selecting an older event? *Id.* at 3–4. Who should be on the sentinel event team—and who should lead or facilitate the review process? *Id.* at 5–6. How can the important “non-blaming” component of sentinel event review be achieved? *Id.* at 11. In 2014 and 2015, the NIJ made four research grants as part of its effort to bring sentinel event reviews into the criminal justice system. Nancy Ritter, *Testing a Concept and Beyond: Can the Criminal Justice System Adopt a Nonblaming Practice?*, 276 NIJ J. 38, 39–40 (2015). Grants were awarded to Texas State University to study wrongful convictions; the Vera Institute to implement and evaluate a protocol for reviewing cases of self-harm in New York City jail; Michigan State University to study the use of sentinel event review in aviation and medicine; and the Quattrone Center for the Fair Administration of Justice at the University of Pennsylvania to work with the Philadelphia Police Department, District Attorney’s Office, Defender Association, and Court of Common Pleas to evaluate the effectiveness of multidisciplinary sentinel event teams. *Id.* This project will create a database of errors and near misses similar to the Aviation Safety and Reporting System to provide a mechanism for prioritizing negative outcomes that are suitable for sentinel event review. *Id.* The goal is to develop rules and standards for the creation and maintaining of multi-stakeholder teams that will embrace a culture of learning from error. *Id.*

²⁴⁰ See Hollway et al., *supra* note 28, at 891–98.

²⁴¹ See *id.* at 891–92.

²⁴² See *id.* at 898–99.

²⁴³ A notable exception is Schwartz, who suggests some possible systemic solutions. See Joanna C. Schwartz, *System Failures in Policing*, 51 SUFFOLK U. L. REV. 535, 561–62 (2018). Her discussion, however, is quite general and does not combine individual incident root cause analysis with the kind of pattern analysis that has been so successful in aviation and medicine.

IV. SYSTEMS-ORIENTED REVIEW OF POLICE SHOOTINGS

Current methods of investigating police-involved shootings differ from the forward-looking, systems-oriented investigations of accidents that occur in aviation and medicine in three critical ways. First, unlike investigations by the NTSB and the Joint Commission, almost none of the traditional police investigatory mechanisms are fully independent from the employing police organization.²⁴⁴ Second, police reviews are designed solely to determine whether the *proximal, human* actor—the officer who pulled the trigger—was legally *culpable*, i.e., whether he acted reasonably at the moment of the shot. Once it is determined that the officer’s conduct was legally justified, the investigation is over. There is no interrogation of the broader circumstances surrounding the shooting, no search for systems vulnerabilities, and no analysis of how the shooting could have been prevented. (I examine this difference in more detail below.) Third, existing structures for police review have no mechanism for sharing analyses of individual police shootings to discover recurring errors or recurring systems breakdowns that could help identify forward-looking solutions.²⁴⁵

In the following pages, I illustrate what systems-oriented review might look like in the policing context by examining as a case study the 2014 shooting by a police officer of twelve-year-old Tamir Rice.²⁴⁶ First, though, I address the question of what the goal of systems-oriented review is—because that is more complicated in the police context than in aviation and medicine since lethal force is sometimes necessary to protect police and public safety.

A. *What Is the Goal of Systems-Oriented Review of Police Shootings?*

Effective systems-oriented review requires clearly defined goals. In aviation and medicine, the task of setting goals is relatively easy. In aviation the aim is to prevent airline crashes. In medicine the objective is to prevent harm or injury to patients that is not related to the natural course of the patient’s illness. While finding the right level of safety in these contexts includes financial

²⁴⁴ See *id.* at 558.

²⁴⁵ See Chuck Wexler, *Why We Need to Challenge Conventional Thinking on Police Use of Force*, in POLICE EXECUTIVE RESEARCH FORUM, GUIDING PRINCIPLES ON USE OF FORCE 6 (2016).

²⁴⁶ I will contrast the extant accountability reviews with what I call a “modified” systems-oriented review. I use the term “modified” because I am not a trained expert in RCA and my analysis is limited to the information contained in the existing record. Full-blown sentinel event review leading to systems-oriented review would require additional data gathering, participation by individuals involved in the event being reviewed, and third-party experts from the context in which the events occurred.

considerations, there is little else to “balance” against airline safety and patient safety.²⁴⁷

Setting a goal for systems-oriented review of police shootings is more complicated because there *are* important values (aside from cost) on the other side of the balance. Decreasing police-involved shootings of citizens might increase the risk that police officers or third parties could be shot or injured. Putting more pressure on police not to use their firearms might increase the incidence of crime or threaten public safety. In addition, the balancing is even more fraught because the costs and benefits on the two sides of the balance are not evenly distributed across demographic and socially defined communities: for example, police-involved shootings fall disproportionately on inner city, African-American communities, while many of the benefits of aggressive police intervention may inure to richer, whiter communities.²⁴⁸

That the goal is more complicated, however, does not preclude systems-oriented review of police shootings. It simply means that prevention measures must take account of conflicting values and distributional effects. The question for a systems-oriented investigator is whether a particular shooting (or pattern of shootings) could have been prevented *without* compromising police and public safety across all communities.²⁴⁹

Reviews that apply current legal standards never ask this question. Legality of lethal force depends upon whether the officer *reasonably believed* the force he or she applied was necessary under the specific circumstances at the moment the shot was fired. This inquiry is ultimately about accountability, not prevention: it tells us whether the officer was culpable for pulling the trigger given what he reasonably perceived at the time. That a particular killing was “justified” in this legal sense, however, tells us nothing about “what kinds of attacks really *require* lethal counterforce or how often police use of deadly force—whether fatal or not—saves the lives of police or crime victims.”²⁵⁰

Moreover, to call police-involved shootings “justifiable killings”²⁵¹ is to implicitly deny the social costs to victims, families, and the broader community

²⁴⁷ I say “little else” because it is possible that some efforts to create fewer accidents or incidents in aviation and medicine could have other, less easily monetized costs. For example, institution of a checklist before a surgery could increase the length of that procedure, which could lead to fewer surgeries and longer wait times for patients to get necessary treatments. Some human costs like these are not wholly monetizable. But, in general, the primary value on the other side of the equation is financial cost.

²⁴⁸ See generally WILLIAM J. STUNTZ, *THE COLLAPSE OF AMERICAN CRIMINAL JUSTICE* (2011) (discussing the distributional effects of criminal justice actions).

²⁴⁹ FRANKLIN E. ZIMRING, *WHEN POLICE KILL 91* (2017).

²⁵⁰ *Id.* at 124 (emphasis added).

²⁵¹ The FBI’s Supplementary Homicide Reports (SHR) designates officer-involved, fatal shootings as “justifiable killings by police officers of felons.” *Id.* at 122. The SHR is part of the Uniform Crime Reporting (UCR) Program administered by the FBI. BUREAU OF JUSTICE STATISTICS, DEP’T OF JUSTICE, *NATION’S TWO MEASURES OF HOMICIDE 1* (2014), <https://www.bjs.gov/content/pub/pdf/ntmh.pdf> [<https://perma.cc/9264-R5UF>]. “The UCR provides aggregate annual counts of the number of homicides occurring in the United

of legally justified shootings, especially those that were factually unnecessary because neither the officer nor the public was ultimately at risk.²⁵² While some officer-involved shootings might be unavoidable, every police shooting that takes a human life is regrettable and tragic.²⁵³ This point gets obscured by an investigative regime that ends by calling a shooting “justified.” Whether or not justified, every officer-involved shooting is undesirable and worthy of review to understand how and why it occurred and how it can be prevented in the future.

That the legal standard governing review of police shootings is focused on placing (or eliminating) blame rather than on decreasing unnecessary shootings underlines the need for additional, systems-oriented investigations. In the next section I illustrate the difference between accountability review and systems-oriented review by contrasting the extant reviews of the Tamir Rice shooting with a more systems-oriented inquiry.

B. Why Accountability Review Does Not Prevent Police Shootings: A Case Study of the Tamir Rice Shooting

On November 22, 2014, Tamir Rice was shot in a city park by Officer Timothy Loehmann from the Cleveland (Ohio) Division of Police.²⁵⁴ Loehmann and his partner, Officer Garmback, entered the park in their vehicle in response to a police dispatch call reporting a black male who allegedly kept “pulling a gun out of his pants and pointing it at people.”²⁵⁵ The officers drove across the

States.” *Id.* The SHR provides additional details about each homicide incident, including jurisdiction, exact date, demographic data on victim and perpetrator, circumstances surrounding the homicide, and the relationship between the victim and perpetrator. *Id.* This information permits detailed examination of different kinds of homicides. *Id.* SHR data are provided voluntarily by law enforcement agencies, and reporting is generally inconsistent and incomplete. *Id.* at 2.

²⁵² The social cost to victims and their communities is obvious. What might be less obvious is that there are also grave personal and professional costs for an officer who is involved in a lethal police-involved shooting. *See generally* DAVID KLINGER, INTO THE KILL ZONE 7, 203–71 (2004) (describing the dramatic, negative effects that police-involved shootings can have on the officer who pulled the trigger, effects that have been called “post-shooting trauma”—a form of traumatic stress syndrome—in law enforcement circles).

²⁵³ *See* Hollway et al., *supra* note 28, at 887–88 (“[O]ur system of criminal justice defines any [officer-involved shooting]—even one in which all protocols were followed by the officer—as an undesirable outcome, and one worthy of review to understand how and why it occurred with the goal being its prevention in the future.”).

²⁵⁴ KIMBERLY A. CRAWFORD, FED. BUREAU OF INVESTIGATION, REVIEW OF DEADLY FORCE INCIDENT: TAMIR RICE 1, http://prosecutor.cuyahogacounty.us/pdf_prosecutor/en-US/Tamir%20Rice%20Investigation/Crawford-Review%20of%20Deadly%20Force-Tamir%20Rice.pdf [https://perma.cc/Z74Q-5JTS].

²⁵⁵ TIMOTHY J. MCGINTY, OFFICE OF THE PROSECUTING ATTORNEY, CUYAHOCA COUNTY PROSECUTOR’S REPORT ON THE NOVEMBER 22, 2014 SHOOTING DEATH OF TAMIR RICE 3–4, http://prosecutor.cuyahogacounty.us/pdf_prosecutor/en-US/Rice%20Case%20Report%20FINAL%20FINAL%202012-28a.pdf [https://perma.cc/QM96-3NRA] [hereinafter CCPO REPORT].

ground close to the suspect and braked on the snow-covered grass.²⁵⁶ The vehicle then slid over forty feet to a point adjacent to where Tamir was standing.²⁵⁷ Officer Loehmann disembarked and fired his weapon within two seconds after the vehicle came to a stop.²⁵⁸ Tamir Rice was transported to a nearby hospital, but died several hours later from his injuries.²⁵⁹

It turned out that Tamir was only 12 and that the gun was an “airsoft” gun,²⁶⁰ which shoots small plastic pellets and is not designed to kill or wound.²⁶¹ Officer Loehmann later reported that Tamir looked like he was reaching for a gun in his waistband.²⁶²

In the aftermath of the shooting, the Cleveland Division of Police and the Cuyahoga County Prosecutor’s Office launched investigations into the shooting.²⁶³ Tamir Rice’s family and community called for criminal prosecutions of the officers and filed a wrongful death suit against the officers, the police department and the City of Cleveland, alleging claims under the Fourth Amendment, the Due Process Clause, and state tort law.²⁶⁴ The lawsuit and demands for prosecution reflect the strong causal intuitions and moral commitments that underlie calls for accountability review: the officers drove their police car into the park and shot and killed a young boy holding a pellet gun. Surely someone must be held accountable for Tamir’s tragic death.

²⁵⁶ *Id.* at 4.

²⁵⁷ *Id.*

²⁵⁸ *Id.*

²⁵⁹ *Id.* at 5.

²⁶⁰ *Id.* at 1. Airsoft guns are made to look realistic, but they have orange safety caps to distinguish them from the real thing. Mary Kilpatrick, *Tamir Rice Shooting: What Is an Airsoft Gun?*, CLEVELAND.COM (Nov. 24, 2014), https://www.cleveland.com/metro/index.ssf/2014/11/tamir_rice_shooting_what_is_an.html [<https://perma.cc/NLS6-T4VV>]. The safety cap on the gun Tamir was holding had been removed before he borrowed the gun from a friend. Memorandum from S. Lamar Sims, Esquire, to James A. Gutierrez and Matthew E. Meyer, Assistant Prosecuting Attorneys, Cuyahoga Cty. Office of the Prosecutor 2 (Oct. 6, 2015), https://cdn3.vox-cdn.com/uploads/chorus_asset/file/4149926/Colorado_prosecutor_Tamir_Rice.0.pdf [<https://perma.cc/ESA6-UZLK>]. Airsoft guns are purchased by young people—there are no restrictions on sale to minors—and also by war-reenactors, by law enforcement officials conducting drills, and by former military personnel. Kilpatrick, *supra* note 260.

²⁶¹ Kilpatrick, *supra* note 260.

²⁶² *Statement of Officer Timothy Loehmann*, CUYAHOGA CTY. OFFICE OF THE PROSECUTOR (Nov. 30, 2015), http://prosecutor.cuyahogacounty.us/pdf_prosecutor/en-US/Tamir%20Rice%20Investigation/Officer%20Loehmann%20Statement.pdf [<https://perma.cc/CMP9-VJTL>].

²⁶³ Timothy Williams & Mitch Smith, *Cleveland Officer Will Not Face Charges in Tamir Rice Shooting Death*, N.Y. TIMES (Dec. 28, 2015), <https://www.nytimes.com/2015/12/29/us/tamir-rice-police-shooting-cleveland.html> [<https://perma.cc/UNH7-N76L>]; CCPO REPORT, *supra* note 255, at 1.

²⁶⁴ *See generally* First Amended Complaint, *Winston v. Loehmann*, No. 1:14-CV-02670 (N.D. Ohio Jan. 30, 2015) (detailing the various claims brought by the administrator of the estate of Tamir Rice).

There were three layers of accountability review of the shooting. The first was an administrative review by the Internal Affairs Unit (IAU) of the Cleveland Police Department to determine whether police employees—the two officers and the police dispatcher—had violated any police rules or policies.²⁶⁵ The second, an administrative inquiry by the Critical Incident Review Committee (CIRC), was tasked to investigate the officers' actions and make recommendations to police management for changes to training, rules, policies, or equipment in light of the reviewed incident.²⁶⁶ The third review was conducted by the Cuyahoga County Prosecutor's Office (CCPO) to determine whether there was a basis to bring criminal charges against the two officers involved in the shooting.²⁶⁷

All three investigations concluded that Officer Loehmann had acted lawfully because he reasonably believed, based on the facts and circumstances known to him at the time, that Tamir Rice was reaching into his waistband to pull out a real gun.²⁶⁸ The only sanctions that were brought against either officer were administrative sanctions: Officer Garback was suspended for ten work days and ordered to attend remedial tactical training for failing to stop his police vehicle more quickly and declining to coordinate his approach with other police vehicles.²⁶⁹ Officer Loehmann was fired for failing to disclose a negative employment history on his application, but not for shooting Tamir Rice.²⁷⁰ The

²⁶⁵ See INTERNAL AFFAIRS UNIT, INVESTIGATIVE REPORT FROM TIMOTHY A. STACHO, SERGEANT, CLEVELAND DIVISION OF POLICE, TO MONROE B. GOINS, LIEUTENANT, CLEVELAND DIVISION OF POLICE 3 (Feb. 2015), https://www.dropbox.com/sh/z5g1kd9qzjggdw4/AABPS1s8y5g_pptRyUYI0g1oa?dl=0&preview=IA+Report.pdf [<https://perma.cc/YA56-8Z28>] [hereinafter IAU REPORT].

²⁶⁶ CRITICAL INCIDENT REVIEW COMM., TAMIR RICE INCIDENT 1 (Apr. 2017), https://www.dropbox.com/sh/z5g1kd9qzjggdw4/AABPS1s8y5g_pptRyUYI0g1oa?dl=0&preview=CIRC+Report.pdf [<https://perma.cc/VT5B-DUMK>] [hereinafter CIRC REPORT]. The CIRC was empaneled by Police Chief Calvin Williams in February 2016. *Id.* The Committee was chaired by the Deputy Chief of Field Operations, Cleveland Police Department, and consisted of eight members, five from the Cleveland Police Department and three administrators of the City of Cleveland. *Id.* It met from February 22, 2016 through October 6, 2016 and issued a report and an addendum. *Id.* at 3.

²⁶⁷ CCPO REPORT, *supra* note 255, at 1.

²⁶⁸ See *id.* at 70; CIRC REPORT, *supra* note 266, at 17; IAU REPORT, *supra* note 265, at 9.

²⁶⁹ See Letter from Michael McGrath, Dir., Cleveland Dep't of Pub. Safety, to Patrol Officer Frank Garback III, Cleveland Div. of Police 2–4 (May 30, 2017) [hereinafter McGrath Letter]. The CIRC investigation made a general recommendation that police receive more training in “off roadway driving [as well as] unconventional places.” CIRC REPORT, *supra* note 266, at 21.

²⁷⁰ Lindsey Bever & Wesley Lowery, *Cleveland Police Officer Who Fatally Shot 12-Year-Old Tamir Rice Is Fired—But Not for the Killing*, WASH. POST (May 30, 2017), <https://www.washingtonpost.com/news/post-nation/wp/2017/05/30/cleveland-police-officer-who-fatally-shot-12-year-old-tamir-rice-is-fired/> [on file with the author].

city ultimately settled the wrongful death lawsuit with the plaintiffs for \$6 million.²⁷¹

1. *The Inadequacy of Accountability Review*

The legal question being interrogated by the three investigations was whether the shooting of Tamir Rice was a justified use of deadly force.²⁷² Each of the three applied the Fourth Amendment standard to conclude that Officer Loehmann had acted lawfully.²⁷³ Under *Graham v. Connor*,²⁷⁴ police use of force is lawful if the officer's actions were "objectively reasonable" in light of the facts and circumstances as the officer knew or reasonably perceived them to be when he took the shot.²⁷⁵ The reasonableness analysis requires "careful attention to the facts and circumstances of each particular case, including the severity of the crime at issue, whether the suspect pose[d] an immediate threat to the safety of the officers or others, and whether he is actively resisting arrest or attempting to evade arrest by flight."²⁷⁶ The *Graham* Court cautioned that legality of force must not be judged with the "20/20 vision of hindsight," but must take into account that police officers are required to make "split-second judgments" under "tense, uncertain, and rapidly evolving" circumstances.²⁷⁷

²⁷¹ Mitch Smith, *Tamir Rice's Family to Receive \$6 Million from Cleveland*, N.Y. TIMES (Apr. 25, 2016), <https://www.nytimes.com/2016/04/26/us/tamir-rice-family-cleveland-settlement.html> [<https://perma.cc/39JB-5TKC>].

²⁷² See CCPO REPORT, *supra* note 255, at 1; CIRC REPORT, *supra* note 266, at 1; IAU REPORT, *supra* note 265, at 3.

²⁷³ See CCPO REPORT, *supra* note 255, at 35; CIRC REPORT, *supra* note 266, at 17; IAU REPORT, *supra* note 265, at 5.

²⁷⁴ 490 U.S. 386, 397 (1989).

²⁷⁵ Although there is a circuit split on this question, compare *Young v. City of Providence*, 404 F.3d 4, 22 (1st Cir. 2005) (providing that the conduct of officials leading up to the use of force should be considered), with *Livermore v. Lubelan*, 476 F.3d 397, 407 (6th Cir. 2007) (providing that everything leading up to the use of force should be disregarded), the Supreme Court has signaled that the timeframe for determining the propriety of allegedly excessive force is extremely narrow. See *Graham v. Connor*, 490 U.S. 386, 396–97 (1989). With very limited exceptions, the broader context that led up to the need for force is not relevant to the *Graham* inquiry.

²⁷⁶ *Graham*, 490 U.S. at 396.

²⁷⁷ *Id.* at 396–97. Although the Supreme Court has opined in *Scott v. Harris*, 550 U.S. 372, 383 (2007), that the *Graham* standard applies to both deadly and non-deadly force, many jurisdictions, including Cleveland, continue to apply the more specialized rules of *Tennessee v. Garner* to deadly force cases. See CCPO REPORT, *supra* note 255, at 35. As the CCPO framed it: "Law enforcement officers can only use deadly force in making an arrest where the police have probable cause to believe that the suspect poses a threat of death or serious bodily harm to the police or to public," for example, "if the suspect threatens the officer with a weapon." *Id.* (quoting *Tennessee v. Garner*, 471 U.S. 1, 11–12 (1985)).

Applying the *Graham* standard to the shooting of Tamir Rice, all three reports concluded that Officer Loehmann acted reasonably when he pulled the trigger.²⁷⁸ For example, according to the IAU investigator:

As [the officers] arrived on scene, Officer Loehmann saw a male, who fit the given description, stand up from a picnic table and place a gun in his pants The male walked toward the path of the [patrol] car and, as the [patrol] car came to a stop in front of him, raised his shirt with one hand and began drawing the gun from his pants with the other. Officer Loehmann exited the vehicle and, fearing for his and Officer Garmback's lives, shot the male two times in the abdomen and immediately sought cover behind the [patrol] car.²⁷⁹

The investigator concluded that “the use of deadly force by Officer Loehmann was reasonable and within the guidelines set forth in GPO 2.1.01 [Use of Force],” which mirrors the *Graham* standard.²⁸⁰

The CIRC investigator²⁸¹ and the Cuyahoga County Prosecutor's Office also agreed that Officer Loehmann had acted lawfully under *Graham*.²⁸² The CCPO report began with the troubling and revealing concession that Officer Garmback's “approach—skidding to a halt directly in front of where Tamir was standing—had left [Officer Loehmann] *dangerously exposed to what [Loehmann] believed was a suspect drawing a gun.*”²⁸³ But this observation was irrelevant to its analysis of the legality of the shooting:

[T]he two responding officers [were led] to believe a real man with a real gun was threatening innocent people's lives at a recreation center The officers, who had no idea that the gun was fake or that Tamir was only [twelve], thought he was going to pull the gun out at them.²⁸⁴

²⁷⁸ See CCPO REPORT, *supra* note 255, at 70; CIRC REPORT, *supra* note 266, at 17; IAU REPORT, *supra* note 265, at 9.

²⁷⁹ IAU REPORT, *supra* note 265, at 8–9.

²⁸⁰ See *id.* at 9 (quoting CLEVELAND DIVISION OF POLICE, GENERAL POLICE ORDERS ch. 2, § 2.1.01 (2014)).

²⁸¹ For example, the CIRC Report reported:

The CIRC examined the tactics used by PPO Loehmann and P.O. Garmback and determined they were reasonable and were based on their response to [Tamir's] actions of standing up and retrieving the gun from the picnic table, placing then [sic] gun in his waistband then initially turning away from officers, and then finally turning back towards the officers and taking the gun out of his waistband.”

CIRC REPORT, *supra* note 266, at 17. The CIRC concluded that according to its “review of Officer Loehmann's actions [involving the shooting of Tamir Rice] there are no apparent rule or policy violations.” *Id.* at 20.

²⁸² CCPO REPORT, *supra* note 255, at 66, 70.

²⁸³ *Id.* at 66 (emphasis added).

²⁸⁴ *Id.* at 69.

[T]he evidence does not show that [Loehmann's] decision to shoot was unreasonable, or that it was feasible to give more commands than he did . . . Loehmann was facing a suspect pulling an object from his waist The law does not require an officer to wait until being fired upon to confirm whether the gun is real or to give the suspect additional time to open fire to draw and fire [sic] upon the officer.²⁸⁵

The legal analysis applied in each of these reviews demonstrates four crucial limitations that make accountability review of the shooting inadequate for the purpose of preventing the next shooting. *First*, the reviews focused almost entirely on the actions of Officer Loehmann, the *proximal human causer* who pulled the trigger. Investigation of other officials was for the limited purpose of ascertaining whether they had violated police rules, not to interrogate whether their errors were causally linked to the mistaken shooting.²⁸⁶ In addition, none of the investigations considered whether broader systems failures contributed to the errors, misjudgments, or misunderstandings made by police officials.

Second, the applicable legal standard limited the analysis to the narrow question of whether Officer Loehmann reasonably believed that his life was in imminent danger *at the moment he discharged his weapon*.²⁸⁷ As a result of this narrow timeframe, the lawfulness inquiry did not consider whether the officers' approach—coming within four to seven feet of an allegedly armed suspect—unreasonably increased the *risk* that lethal force would be *required*. For example, it did not invite investigators to consider whether the officer failed to use de-escalation techniques or provoked the confrontation in some way. Nothing that occurred before the shooting mattered to the investigation.

Third, the ultimate question to be answered was whether Officer Loehmann was *culpable* for what he did. The purpose of the exercise was to assign blame, i.e., to determine whether the officer should be punished, reprimanded, or fined for what happened. Once each of the reviews had determined that the shooting by Officer Loehmann was lawful, the investigation was over and no additional causal inquiry was required or indeed permitted.

Fourth, the investigations were almost entirely *backward-looking*. The goal was to determine what policies, rules, or laws were broken and to hand down sanctions for past behavior.²⁸⁸ By contrast, prevention requires investigators to ask not "*what happened and who is to blame?*" but, rather, "*why did this happen*

²⁸⁵ *Id.* at 66.

²⁸⁶ *See, e.g.*, CIRC REPORT, *supra* note 266, at 20.

²⁸⁷ The Supreme Court has signaled that the timeframe for determining the propriety of allegedly excessive force is relatively limited. *See Graham v. Connor*, 490 U.S. 386, 396–97 (1989). Courts of appeals are divided on the question of how narrowly the timeframe should be defined, with some courts permitting a more liberal analysis. *See supra* note 275 and accompanying citations.

²⁸⁸ Only the CIRC analysis had anything to say about forward-looking policies, and its recommendations were vanishingly thin (one page out of twenty-one) and embarrassingly superficial. *See CIRC REPORT, supra* note 266, at 21.

and how can we make sure it *doesn't happen again?*"²⁸⁹ At the end of the day, "accountability review" of the sort described above is not well adapted to asking the "why" question.

Accountability questions are very important, and administrative reviews and lawsuits that ask them play an important role. These legal actions uncover important information, vindicate important society goals, and—at least sometimes—identify and punish culpable actors.²⁹⁰ But to focus exclusively on *individual* blame by the *last* actor for actions in the *past* is to miss something vital. This kind of analysis will almost never prevent the shooting of another Tamir Rice tomorrow, or next week, or next year: once the shooting is "justified" the investigator's job is done. In the complex, tightly coupled world of policing, with its susceptibility to systems accidents, we need a systems-oriented approach that goes beyond the search for accountability.

2. Applying Systems-Oriented Review

My goal in this part is to apply a more systems-oriented, forward-looking analysis to the events that led to the shooting of Tamir Rice. I do not purport to be doing actual "sentinel event review (SER)" as it is practiced in aviation and medicine. Formal SER would require additional data gathering, participation by individuals involved in the event being reviewed, and third-party experts, such as police and forensic specialists. By contrast, I am limited to the information that was gathered in the accountability investigations, and I can only gesture at possible systemic causes and preventative solutions. To the extent possible, however, I use the materials, analysis, and conclusions contained in the investigative record of the Tamir Rice shooting to highlight some of the additional questions that systemic, sentinel event review would be trying to ask (and answer).²⁹¹

Recall that SER is designed to investigate a harmful outcome—here a police shooting—that may signal underlying weaknesses in a system or process.²⁹² If properly analyzed and addressed, a sentinel event can provide important insights for preventing future, similar adverse outcomes.²⁹³ SER generally employs root

²⁸⁹ See Hollway et al., *supra* note 28, at 904 (describing the difference between "accountability review" and "root cause analysis").

²⁹⁰ *Id.* at 890.

²⁹¹ This Part relies on the reviews by IAU, CIRC, and CCPO and their supporting documents, including witness statements, reports by independent police expert, an Ohio Highway Patrol Accident Reconstruction Report, and an enhanced video of the moments before, during and after the shooting. The enhanced video was solicited by the Cuyahoga Prosecutor's Office from Grant Fredericks, an accredited video analyst with Forensic Video Solutions in Spokane Washington. See GRANT FREDERICKS, FORENSIC VIDEO SOLUTIONS, <https://assets.documentcloud.org/documents/2623185/2015-11-28-tr-video-enhancement-forensic-video.pdf> [<https://perma.cc/M22J-RYLV>].

²⁹² See *supra* Part III.

²⁹³ U.S. DEP'T OF JUSTICE, *supra* note 172, at 1.

cause analysis as a problem-solving tool to determine not only *what* and *how* the harm-causing event occurred, but also *why* it happened.²⁹⁴

One effective method to begin the process of identifying root causes is the “Five Whys” analysis. It involves identifying a problem and then asking a series of “whys” to try to get to successive underlying causes.²⁹⁵ The idea is that it takes *at least* five “Why?” questions—but sometimes more—to uncover a “root” or systems-oriented cause.²⁹⁶

To take a very simple example, suppose the problem is that your car won’t start. Here is how the “Five Whys” analysis might play out:

PROBLEM: The vehicle won’t start.

Why? Because the battery is dead.

Why? Because the alternator is not working.

Why? Because the alternator belt is broken.

Why? Because the alternator belt was worn past its useful lifespan and not replaced.

Why? Because the vehicle was not regularly maintained.

SOLUTION: Schedule regular maintenance checks.²⁹⁷

The immediate cause of the problem was a dead battery. If the owner gets a new battery, it will fix that problem and the car will run. Of course, the battery will quickly run down if she doesn’t also get the alternator working. But, even if she gets both a new battery *and* a new alternator belt, the problem will eventually reoccur unless the car has routine maintenance checks. The only way to keep the same series of events from happening again is to attend to the root problem, the cause, that lies at the beginning of a whole chain of causes.

Sentinel event review of individual harm-causing events is a first step toward identifying systems-oriented solutions.²⁹⁸ It may be that nonhuman causes such as organizational factors (management, policies, organizational pressures, or occupational culture) and/or workplace factors (supervision, training, or working conditions) have created a flammable brew just waiting to be ignited by human error.²⁹⁹ Solutions, then, should aim not to change people directly, but to change the conditions that lead them to make mistakes by adopting barriers and safeguards that constrain human conduct.³⁰⁰

Sentinel event review of the Tamir Rice shooting begins by identifying the harmful event or problem to be investigated: the shooting of an unarmed twelve-year-old boy.

²⁹⁴ See Hollway et al., *supra* note 28, at 906.

²⁹⁵ *Id.* at 904.

²⁹⁶ *Id.* at 905.

²⁹⁷ This example appears in *id.* at 904.

²⁹⁸ *Id.* at 905. Tools like the “Five Whys” analysis press investigators to work backward in the causal chain behind the human causers identified by accountability review.

²⁹⁹ REASON, HUMAN ERROR, *supra* note 33, at 173. Systemic factors can act as “error traps” that predispose to repeated, similar mistakes.

³⁰⁰ Hollway et al., *supra* note 28, at 905.

PROBLEM: Police Officer Loehmann exited his patrol car in a city park and shot an unarmed boy.

The first “why” question asks *why* the officer would have fired his gun at an unarmed person. It is the *only* question that was addressed by each of the three investigations of the Tamir Rice shooting.³⁰¹ The answer they gave went something like this:

Why? Because when Officer Loehmann fired the shot he was standing four to seven feet from an individual who fit a police dispatcher’s description of a male in the park who had been “pointing a gun at people.” The officer fired because he thought the male was reaching toward his waistband to pull out a gun.

This answer essentially ended the legal inquiry because it supported a finding that the officer acted reasonably, even if mistakenly: Officer Loehmann reasonably believed that the male he faced when he alighted from the vehicle was the same person who had been threatening people with a gun *and* he reasonably believed the person was reaching into his waistband for that gun.³⁰² Based on these facts, all three reviews concluded that the shooting was lawful.³⁰³ The investigations ended there.

Given the narrowness of this analysis, the question of prevention never came up. Indeed, the lawfulness judgment comes with an implicit assumption that the shooting *need not*—or *could not*—have been prevented: if the shooting was reasonably necessary to protect the officers’ safety, then it was—by definition—unavoidable. But this assumption is unfounded. That a shooting is justified addresses the momentary culpability of the officer at the moment he pulled the trigger. It tells us nothing about whether this is *the kind of circumstance* that requires lethal counterforce in order to save the lives of police or third parties or to prevent crime. Specifically, the *legality* of the shooting does not tell us whether this shooting—and others like it—could be prevented *without* compromising police or public safety. For that we need an investigation that employs a broader timeframe and goes beyond the first why question to interrogate deeper, systems-oriented causes.

James Reason’s typology of errors for assessing organizational accidents is helpful for expanding the causal horizon beyond the first “why” question addressed by accountability review.³⁰⁴ Reason makes a distinction between

³⁰¹ See CCPO REPORT, *supra* note 255, at 1; CIRC REPORT, *supra* note 266, at 17; IAU Report, *supra* note 265, at 3.

³⁰² See CCPO REPORT, *supra* note 255, at 69.

³⁰³ See *supra* note 278 and accompanying text.

³⁰⁴ Reason’s work is widely cited by virtually all institutions that routinely conduct root cause analysis. See, e.g., NAT’L INST. OF JUSTICE, *supra* note 230, at 6 (citing REASON, *supra* note 33). His most cited books were published in the 1990s, but his work goes back to the early 1970s. See JAMES REASON, HUMAN ERROR (1990); JAMES REASON, MANAGING THE RISKS OF ORGANIZATIONAL ACCIDENTS (1997).

“active failures” and “latent conditions,” both of which contribute to organizational accidents.³⁰⁵

Active failures are unsafe acts on the part of those who are in direct contact with the system, including, but not limited to, the proximal causer.³⁰⁶ They can result from: inattention or forgetfulness (“skill-based slips or lapses”); failing to apply good rules and policies or applying bad rules and policies (“rule-based mistakes”); or misapplication of rules or policies to new or novel situations (“knowledge-based mistakes”).³⁰⁷ Active failures can also involve violations (as opposed to merely errors). Violations arise from motivational factors and may result from intentionally cutting corners, thrill seeking, habitual rule breaking, or willful violations not condoned by management.³⁰⁸

Reason’s discussion of latent, harm-causing conditions is especially enlightening in the policing context, given accountability review’s failure to look beyond immediate, human causes. Unlike active failures and violations, latent conditions may (but need not) involve mistakes by human actors.³⁰⁹ Rather, they are preexisting, causal factors (culpable or not) that are necessary to the harmful event, like oxygen is a necessary condition for fire.³¹⁰ Organizational accidents in complex systems “arise from the insidious accumulation of delayed-action failures lying mainly in the managerial and organizational spheres.”³¹¹ “Such latent conditions (or latent failures) are like resident pathogens within the system.”³¹² “Organizational accidents can result when these latent conditions combine with active failures (errors or violations at the ‘sharp end’) . . . to breach or bypass the system defenses.”³¹³

In Reason’s parlance, an organizational accident involves much more than the conduct, culpable or not, of the proximate causer.³¹⁴ The “accident sequence” begins with the *organization*, where management decisions, organizational processes, and corporate culture create conditions in the *workplace* that promote errors and violations.³¹⁵ These conditions then combine with *human propensities* for errors and violations which can result in risk-creating acts.³¹⁶ In order for an accident to occur, the organizational and

³⁰⁵ REASON, HUMAN ERROR, *supra* note 33, at 173.

³⁰⁶ *Id.*

³⁰⁷ JAMES REASON, ORGANIZATIONAL ACCIDENTS REVISITED 14–16 (2016) [hereinafter REASON, ORGANIZATIONAL ACCIDENTS REVISITED].

³⁰⁸ *Id.* at 14.

³⁰⁹ *Id.* at 2–3.

³¹⁰ *Id.* at 3.

³¹¹ *Id.* at 9.

³¹² *Id.*

³¹³ REASON, ORGANIZATIONAL ACCIDENTS REVISITED, *supra* note 307, at 9.

³¹⁴ *Id.* at 10.

³¹⁵ *Id.* Workplace conditions might include high workloads, time pressure, lack of skill and experience, and inadequate equipment. *Id.*

³¹⁶ *Id.*

workplace conditions must combine with human errors or violations and penetrate the system's ordinary defenses.³¹⁷

Reason's typology of accident review highlights the grave limitations of the accountability analysis applied in the Tamir Rice investigations. Stopping with the conclusion that Officer Loehmann acted reasonably at the moment of the shooting leaves multiple potential causes unexplored. By contrast, a systems analysis requires investigators to reach back in time before the moment of the shooting by asking a descending series of questions. Applying a "Five Whys (or more)" framework, one line of analysis could look like this:³¹⁸

PROBLEM: Police Officer Loehmann exited his patrol car and shot an unarmed boy in a city park.

Why? (1) Because when Officer Loehmann fired the shot he was *standing four to seven feet from an individual* who fit a police dispatcher's description of a male in the park who had been "pointing a gun at people."³¹⁹ The officer fired because he thought the male was reaching toward his waistband to pull out a gun.³²⁰

Why? (2) Because Officer Garmback drove the police vehicle *right up to the suspect* instead of stopping farther back and seeking cover.³²¹

Why? (3) Because Office Garmback wanted to stop the vehicle *close enough so the officers could pursue the suspect on foot*.³²² The grass was wet and snowy, causing the vehicle to slide even closer than he intended.³²³

Why? (4) Because the officers (mistakenly) thought there was an "*active shooter*" in the park, which may have influenced their decision to come in quickly and not wait for backup.³²⁴

Why? (5) Because the officers were responding to a *dispatcher's inaccurate report* that there was an adult male in the park who was threatening people with a gun.³²⁵

Why? (6) Because the *dispatcher failed to tell police* that the 911-caller had actually said that the gun was "probably fake" and that the alleged shooter was "probably a juvenile."³²⁶

³¹⁷ In the language of Reason's famous "Swiss Cheese" model of accident causation, the accident only occurs if the holes in the cheese are lined up so that the hazard finds its way through all the potential layers—organizational, workplace and individual—that would otherwise arrest its progress. *Id.* at 2.

³¹⁸ Recall again that the idea behind "Five Whys" is that it takes *at least* five why questions to get to a root cause. As will become clear, this line of analysis is only one series of questions that would be posed as part of a multi-linear, systems review.

³¹⁹ CCPO REPORT, *supra* note 255, at 3.

³²⁰ *Id.* at 6.

³²¹ *Id.* at 49.

³²² *Id.* at 7.

³²³ *Id.* at 49.

³²⁴ *Id.* at 47.

³²⁵ CCPO REPORT, *supra* note 255, at 69.

³²⁶ *Id.* at 3.

a. *The Approach*

The questions numbered (2) through (4) above, interrogate the question why Officer Loehmann came to be standing so close to an active shooter. Why would Officer Loehmann have disembarked from the passenger seat of the patrol car within four to seven feet of an individual who was reportedly threatening people with a gun? The instant investigations considered these questions, but only in connection with possible violations of discrete police rules or policies.³²⁷ By contrast, sentinel review seeks to determine why the officers used the close approach and whether their decision was a causal factor in the mistaken shooting.

The investigators concluded that the police officers entered the park in response to a “Code-1,” which was the highest priority call.³²⁸ They drove their vehicle past a dead-end street and over wet, snowy grass, allegedly to get good access to the location of the alleged shooter.³²⁹ According to a forensic analysis by the Ohio State Highway Patrol, which was accepted by the CCPO, the police vehicle was traveling at about 19 mph when the officer braked to a stop.³³⁰ The police car came to rest only four to seven feet from where pre-teen Tamir Rice was then standing.³³¹

In defense of their close approach, the officers claimed that they purposely drove right up to the suspect because they had seen him pick up an object, place it in his waistband, and begin walking toward a nearby recreation building.³³² Officer Garmback stated that his approach was intended to keep the suspect from entering the recreation building where he might pose a danger to people

³²⁷ CIRC REPORT, *supra* note 266, at 20.

³²⁸ A Code-1 designation indicated that the incident posed a significant public risk. CCPO REPORT, *supra* note 255, at 41.

³²⁹ *Id.* at 7.

³³⁰ Officer Garmback said in his written statement that he was traveling at 10–12 mph, *id.*, but the Ohio State Highway Patrol Report put the speed at 19 mph. *Id.* at 30. The latter speed was accepted by the CCPO REPORT. *Id.*

³³¹ CRAWFORD, *supra* note 254, at 1. The investigations and witness statements, including statements by the officers themselves, assert that people on the scene before and after the shooting thought 12-year-old Tamir was much older, perhaps as old as 18 or 19. *See, e.g.*, CCPO REPORT, *supra* note 255, at 6. That he was mistaken for an adult rather than a child is consistent with social science studies identifying structural racism in age estimations of black male children. *See* Phillip Atiha Goff et al., *The Essence of Innocence: Consequences of Dehumanizing Black Children*, 106 J. PERSONALITY & SOC. PSYCHOL. 526, 532 (2014) (explaining that minority children are consistently estimated to be older than they actually are, while Caucasian children are not).

³³² CCPO REPORT, *supra* note 255, at 6. The officers invoked the Fifth Amendment and gave only written statements to the Internal Affairs Committee and to the CCPO. *Id.* at 5–6. It appears that they were interviewed by the CIRC investigator. *See* CIRC REPORT, *supra* note 266, at 14.

inside.³³³ On this explanation, the officers intentionally chose their close approach to allow them to disembark and pursue the suspect on foot.³³⁴

It bears emphasis that *not one* of the police experts or investigators involved in the official review of these events accepted this defense of the officers' approach. All agreed that no reasonable officer would have tried to engage an active shooter from such close range, but, rather, would have stopped their vehicle, taken cover and called for backup.³³⁵ For example, the Internal Affairs Unit concluded that Officer Garmback "did not employ proper tactics when he operated the [patrol] car up to what was reported to be an armed suspect, thereby violating [police policy]."³³⁶ The investigator concluded that Garmback had recklessly approached a suspect who was allegedly threatening to shoot people "without [waiting for] backup" even though another squad car had primary responsibility for the area.³³⁷ This action "placed himself and his partner in a position where either or both of them could have been injured by the suspect."³³⁸ The officer's tactically flawed approach called for administrative sanctions against him.³³⁹

Police expert Jeffrey Noble, who reviewed the video of the circumstances surrounding the shooting for the Cuyahoga County Prosecutor's Office, also strongly disputed the officers' defense of their close approach:

Reasonable police officers responding to a man with a gun call would have stopped their vehicle prior to entering the park to visually survey the area to

³³³ CCPO REPORT, *supra* note 255, at 7 ("As we moved in to the park, I saw the male in the gazebo. He matched the description given over the radio . . . I believed at first the male was going to run. I think I told my partner, 'watch him he's going to run.' However, he stopped and turned towards our cruiser . . . Part of my intentions was [sic] to keep him away from entering the Recreation Center Building.").

³³⁴ See CIRC REPORT, *supra* note 266, at 14–15 ("[Garmback] states he thought the suspect might run and slammed on the brakes in order to stop the car and 'bail out.' He stated he did this so that they could run after the subject. P.O. Garmback indicated he believed the subject might shoot at them because he did not run away as other subjects usually have in the past.").

³³⁵ See, e.g., IAU REPORT, *supra* note 265, at 5. Commander Brian Hefferman who, in reviewing the IAU's recommendations, acknowledged Garmback's alleged rationale (that he was worried the suspect would flee), but concluded that Garmback should have adopted a "safer approach" when working as a Field Training Officer with a rookie probationary partner. *Id.*

³³⁶ *Id.* at 6.

³³⁷ McGrath Letter, *supra* note 269, at 3. The letter advises Garmback of the results of the administrative pre-disciplinary hearing held on March 13, 2017, in which Garmback was charged with a series of rule violations. *Id.* at 1.

³³⁸ IAU REPORT, *supra* note 265, at 6.

³³⁹ As his reprimand letter framed it, Garmback approached a suspect who was allegedly threatening to shoot people "without [waiting for] backup" even though another squad car had primary responsibility for the area. McGrath Letter, *supra* note 269, at 3. He was sentenced to a ten-workday suspension for employing improper tactics in approaching an active shooter, failing to wait for backup, and failing to coordinate his actions with the police team that had primary responsibility for that area. *Id.* at 2–4.

avoid driving upon a subject who may be armed. This serves not only to protect the officers, but also serves to protect others who may be in the area and it provides both time and distance for the officers to evaluate the situation and develop a plan. It also allows time for other officers to arrive to provide assistance.

. . . .

The officers' *grossly reckless tactics* placed Officer Loehmann in a position where he was within a few feet of Tamir [This was] counter to virtually all police training that counsels officers to develop a plan prior to confronting a subject, to take their time and proceed cautiously and slowly in attempting to resolve a situation, to remain calm, to remain at a safe distance from a subject, to wait for backup when possible, and to employ tactics focused on de-escalation.³⁴⁰

Noble described the alternatives in some detail:

[P]olice officers are trained how to evaluate and manage potentially violent field situations and how to apply tactics to minimize the danger of risk to themselves and others Reasonable officers understand the value of cover and concealment, contact and cover strategies, and calm and effective negotiation skills. They are well-versed in containing scenes, setting perimeters, isolating suspects, and evacuating those in harm's way. Modern police officers are also provided a wide range of tools (including less lethal options like pepper spray, Tasers, and impact projectiles) to minimize the necessity of using serious or deadly force.³⁴¹

As an alternative defense for his close approach, Garmback claimed that he meant to stop further from the suspect, but the brakes locked and the vehicle slid closer than he had intended.³⁴² It is undisputed that the squad car slid somewhere between 40 and 75 feet after the officer applied the brakes.³⁴³ This second

³⁴⁰ JEFFREY J. NOBLE, PRELIMINARY EXPERT REPORT OF JEFFREY J. NOBLE 8–9 (Nov. 2015), <https://www.chandralaw.com/files/blog/Jeff-Noble-Preliminary-Report.pdf> [<https://perma.cc/K2T6-ELFM>] (emphasis added); see also ROGER CLARK, EXPERT REPORT ON THE SHOOTING DEATH OF TAMIR RICE 10, <https://www.ecbalaw.com/wp-content/uploads/2015/11/00234247.pdf> [<https://perma.cc/U8BC-S5B5>] (“Officers are trained to approach similar situations carefully, to assess it, and try to de-escalate it. Here, Officers Loehmann and Garmback did the opposite. Officer Garmback jumped the curb, drove through the park at a reckless speed, stopped right beside Tamir, and Officer Loehmann jumped out shooting [T]hey had plenty of time to stop their car sooner and assess the situation from a position of cover and safety.”).

³⁴¹ NOBLE, *supra* note 340, at 7.

³⁴² CCPO REPORT, *supra* note 255, at 7 (“The cruiser did slide as I applied my brakes. I am not sure how far. The car did not stop where I intended.”) On the day the shooting occurred, the ground was wet with snow and covered with wet leaves. *Id.* at 4.

³⁴³ See *id.* at 30 (stating that, based on the speed of the vehicle, the frictional value of the surface at the time, and video evidence, Ohio State Highway Patrol Sergeant John Thorne determined that the vehicle slid to a stop at a minimum of 40.3 feet in 3.5 seconds, or a maximum of 73.3 feet in 4.5 seconds).

explanation for Garmback's close approach, however, begs two important questions: First, was the officer driving at a *safe rate of speed* when he applied the brakes, given the need for caution in confronting a possible active shooter? Second, was his *intended* stopping point far enough back to afford safety and cover in a dangerous situation, given that the grass was wet and snowy? If the answer to either of these questions is "no," then we are back to saying that Garmback violated best police practices by coming in too close to an active shooter.³⁴⁴

Although police experts universally condemned the officer's close approach as violating police best practices—and the IAU recommended discipline of Officer Garmback for these actions³⁴⁵—none considered whether the close approach was a causal factor in the shooting. The CCPO report stated that Officer Garmback's "approach—skidding to a halt directly in front of where Tamir was standing—had left [Officer Loehmann] *dangerously exposed to what he believed was a suspect drawing a gun.*"³⁴⁶ The IAU investigation concurred that Garmback violated "cover and concealment training" and "high risk traffic stop training" when he drove his police car "up to what was reported to be an armed suspect" thereby "*plac[ing] himself and his partner in a position where either or both of them could have been injured by the suspect.*"³⁴⁷ But when considering the lawfulness (reasonableness) of the shooting itself, both investigations treated Officer Loehmann's dangerous location as a "given" and

³⁴⁴ The answers to these questions depend on factual reconstructions of the accident and conclusions based on these reconstructions, upon which investigators and police experts disagreed. Compare NOBLE, *supra* note 340, at 5 (finding that the officers engaged in reckless tactical decision making that created the danger and the deadly force was excessive, unreasonable, and inconsistent with generally accepted police practices), with CIRC REPORT, *supra* note 266, at 17 (finding that the tactics used by the officers were reasonable). For example, there is a factual dispute among investigators and experts as to when exactly Officer Garmback applied the brakes in an attempt to stop the vehicle: when the officers saw Tamir sitting still in the gazebo with no gun visible *or* when Tamir allegedly picked up an object, put it in his waistband, and began walking out of the gazebo and toward the vehicle. This distinction matters for Garmback's claim that he drove close because he thought the suspect would enter the recreation center and harm people inside. The CIRC investigator concluded that Garmback braked when he saw Tamir with a gun, that the vehicle was traveling about 19 mph when Garmback braked, that the officer was in control of the vehicle, and that he could not have anticipated his vehicle would slide on the wet grass. CIRC REPORT, *supra* note 266, at 15–17 (stating that "it was possible to clearly see a person picking up a weapon from the picnic table located in the gazebo").

³⁴⁵ See IAU REPORT, *supra* note 265, at 6 (concluding that "Officer Frank Garmback did not employ proper tactics when he operated the zone car up to what was reported to be an armed suspect, thereby violating General Police Order 2.1.01 [Use of Force]" and recommending that he be "disciplined").

³⁴⁶ CCPO REPORT, *supra* note 255, at 66 (emphasis added). CCPO investigators did not fault Garmback only because they concluded that he had intended to stop "much earlier than he did." *Id.* at 49; see also CIRC REPORT, *supra* note 266, at 15–16 (concluding that Garmback intended to stop the vehicle sooner, but it slid on the wet grass).

³⁴⁷ IAU REPORT, *supra* note 265, at 6 (emphasis added).

neither considered whether the bad positioning contributed to the shooting.³⁴⁸ That Garmback's action may have *increased the risk* that deadly force would be *necessary* was deemed irrelevant.³⁴⁹

Police expert Kimberly Crawford made this explicit in her analysis, concluding that whether or not “the officers enhanced [the] risk by entering the park and stopping their vehicle so close to a potentially armed suspect” was not germane to the lawfulness analysis: “Whether the officers’ actions were courageous or foolhardy [in driving within a few feet of the suspect] is not relevant to a constitutional review of the subsequent use of force.”³⁵⁰ Legal consultant S. Lamar Sims’s analysis was similar, concluding that:

[Officer Garmback] approached and stopped in such fashion that Officer Loehmann *was in a position of great peril*—he was within feet of a gunman who had stood up, was approaching the police car and reaching toward his waistband. The officers did not create the violent situation—they were responding to a situation fraught with the potential for violence to citizens To suggest that Officer Garmback should have stopped the car at another location is to engage in exactly the kind of “Monday morning quarterbacking” *the case law exhorts us to avoid*.³⁵¹

The admonition to avoid “Monday morning quarterbacking” is an ironic one under these circumstances. While fans could be faulted for second guessing coaching decisions after a sports event, teams and their coaches spend hours doing precisely that kind of review to figure out what went wrong. My point here is not to fault the instant investigations for focusing their constitutional analysis on the moment of the shooting, as required by the current constitutional standard. It is to make clear that accountability review, which under current doctrine stops at “why” question (1), has foreclosed an entire line of inquiry that is crucial for preventing the next police shooting, namely, “Did the officers’ ‘reckless approach’ which left them ‘dangerously exposed’ and put them in ‘great peril’ significantly (and unreasonably) increase the risk that deadly force would be needed to protect them?” In prevention (or systemic) terms, could a different approach—for example, waiting for backup before engaging the

³⁴⁸ See *id.* at 9; CIRC REPORT, *supra* note 266, at 17; see also CCPO REPORT, *supra* note 255, at 37–41.

³⁴⁹ See IAU REPORT, *supra* note 265, at 9; CIRC REPORT, *supra* note 266, at 17; see also CCPO REPORT, *supra* note 255, at 37–41 (arguing that “the tactics used by the police officers prior to the use of deadly force cannot be the basis for finding the use of deadly force itself unreasonable”).

³⁵⁰ CRAWFORD, *supra* note 254, at 6.

³⁵¹ Sims, *supra* note 260, at 12–14 (referring to *City & Cty. of S.F. v. Sheehan*, 135 S. Ct. 1765, 1777 (2015)) (emphasis added). Sims’s reference to “Monday morning quarterbacking” reflects the Supreme Court’s warning not to judge the reasonableness of excessive force with the benefit of 20-20 hindsight. See *Graham v. Connor*, 490 U.S. 386, 387 (1989); *Sheehan*, 135 S. Ct. at 1777.

shooter or employing de-escalation techniques—have prevented the shooting *without* compromising police and public safety?³⁵²

On the first point, recall that the officers argued they drove in quickly and close to engage Tamir Rice on foot and block him from entering the recreation center.³⁵³ This claim implicitly invoked the CPD’s “active shooter” policy, which permits officers to move in rapidly without backup to engage a person who is actively threatening others with a firearm.³⁵⁴

Like virtually all police agencies, Cleveland adopted its active shooter policy in the wake of the Columbine school shooting.³⁵⁵ Before Columbine, the universal best practice was for patrol officers to “contain” and “control” a dangerous situation or person and call in a specialized SWAT team to engage with the shooter.³⁵⁶ In the Columbine incident, police from various Denver-area agencies responded and secured the perimeter of the school but did not enter to stop the shooter.³⁵⁷ Although police were doing exactly what they were trained to do, this strategy was deemed inadequate for circumstances requiring immediate action to halt a shooter.³⁵⁸ The active shooter policies adopted post-Columbine give patrol officers the authority to approach at close range without backup in order to stop an individual who is actively engaged in killing people or attempting to kill people in a populated area.³⁵⁹

The Cleveland Police Department’s policy defines an active shooter as an individual whose “activity and use of a firearm (or any other deadly instrument, device, machine, dangerous ordnance, or deadly hazard) is causing or attempting to cause immediate death and/or serious physical harm in a well populated area (target rich environment), such as a school, church, business, or any other public place.”³⁶⁰ When these circumstances occur, Cleveland police

³⁵² See *infra* notes 365–71 and accompanying text.

³⁵³ See CCPO REPORT, *supra* note 255, at 47.

³⁵⁴ See *id.* at 46–47.

³⁵⁵ *Id.* at 46.

³⁵⁶ *Id.* Law enforcement agencies call this the 4Cs: Contain, Control, Communicate and Call SWAT. See Amaury Murgado, *Movement to Contact*, POLICE MAG. (Nov. 14, 2013), <http://www.policemag.com/channel/careers-training/articles/2013/11/movement-to-contact.aspx> [<https://perma.cc/99KL-54NS>].

³⁵⁷ POLICE EXEC. RESEARCH FORUM, CRITICAL ISSUES IN POLICING SERIES: THE POLICE RESPONSE TO ACTIVE SHOOTER INCIDENTS 1 (2014).

³⁵⁸ See *id.* at 2 (“‘Contain and negotiate’ may be appropriate for hostage incidents or situations where a person is barricaded in a room and unable to harm victims. But it is not appropriate for active shooter incidents.”).

³⁵⁹ CCPO REPORT, *supra* note 255, at 46–47.

³⁶⁰ See *id.* at 46 (quoting Cleveland Police Department Active Shooter Policy). The CPD definition is somewhat broader than the definition that has been adopted across multiple law enforcement agencies, including the FBI and the Department of Homeland Security, which defines an active shooter as “an individual *actively engaged in killing or attempting to kill* people in a populated area,” such as a school, workplace, house of worship, transportation center, or other public gathering site. *Active Shooter Resources*, FED. BUREAU OF INVESTIGATION, <https://www.fbi.gov/about/partnerships/office-of-partner-engagement/active-shooter-resources> [<https://perma.cc/3M69-CMCN>].

“have the authority to and shall attempt to make immediate contact with and stop the active shooter.”³⁶¹ The prosecutor who investigated the Tamir Rice shooting concluded that the officers’ actions fit within this policy because they faced a “*potential active shooter*” who was “*attempting to cause death and/or serious physical harm*” at the nearby recreation center, which was 200 feet away.³⁶²

Let’s just pause here. Upon arrival at the park, the officers did *not* see terrified people running away or wounded bodies on the ground. They did *not* hear gunshots or screaming. The park was virtually empty except for the lone figure of Tamir Rice sitting or standing with no visible firearm. Nothing they witnessed would have confirmed their interpretation of the dispatcher’s message: that they were facing an active shooter.

Thus, the prosecutor’s reading of the CPD was certainly a very broad one. By it, the policy would apply not only to actual shooters but also to *potential* shooters (which could be anyone with a gun!). Under the prosecutor’s reading, the officers were justified in the belief that Tamir Rice was “*causing or attempting to cause immediate death and/or serious physical harm*” at the moment they entered the park without backup, even though they had no confirmation that shots had been fired, that anyone actually had a gun, or that anyone had been hurt or was in danger.³⁶³

By contrast, police expert Jeffrey Noble concluded that the active shooter policy had not been triggered, observing that “there were no claims that a single shot had been fired [or that] anyone was injured in any way, and the officers could see as they arrived that there was no one else in the area.”³⁶⁴ Invoking the active shooter policy under these circumstances was broadly inconsistent with the purpose of such policies; namely, to authorize police action when the suspect is *actively shooting people* and “even a one-minute delay in responding may result in multiple additional fatalities.”³⁶⁵

It bears emphasis that after all the facts and expert testimony had been considered, the Cleveland Police Department agreed that Tamir Rice was not an active shooter within the meaning of the Department’s policy: it concluded that

³⁶¹ CCPO REPORT, *supra* note 255, at 47.

³⁶² *Id.* Around the time of the incident the recreation center’s security video system recorded a few people near the entrance to the recreation center. *Id.* at 48. In addition, the prosecutor reasoned that “as an experienced First District officer, Garmback would have known that during business hours, the Recreation Center would be crowded with children and adults.” *Id.* at 49.

³⁶³ *Id.* at 47 (emphasis added).

³⁶⁴ JEFFREY J. NOBLE, SUPPLEMENTAL PRELIMINARY EXPERT REPORT 5 (Dec. 2015), <https://www.ecbalaw.com/wp-content/uploads/2015/12/Rice.-Jeff-Noble-Supplemental-Report-00234880x9CCC2.pdf> [<https://perma.cc/ENU8-GQF8>].

³⁶⁵ POLICE EXEC. RESEARCH FORUM, *supra* note 357, at 8, 13. Every so-called “active shooter” event chronicled in FBI and other reports involves a person who has already started shooting. *See generally, e.g.*, FED. BUREAU OF INVESTIGATION, U.S. DEP’T OF JUSTICE, ACTIVE SHOOTER INCIDENTS IN THE UNITED STATES FROM 2000–2018 (2019) (listing active shooter incidents that took place in the United States between 2000–2018).

Garmback's claim that he "had to take these actions because it was an active shooter situation [was] not supported by the facts."³⁶⁶

That Officers Garmback and Loehmann apparently believed they were following CPD's active shooter policy under these circumstances raises broader, systemic questions. For example, did the active shooter policy encourage the officers to make a precipitous approach that increased the likelihood that deadly force would be required without improving officer safety or public safety? Police expert Jeffrey Noble answers in the affirmative.³⁶⁷ He concludes that "Officer Loehmann's inaccurate assessment of the situation may [have been] a factor in his unreasonable use of deadly force."³⁶⁸

Or, to ask the question more broadly, are active shooter policies generally being applied in the appropriate circumstances?³⁶⁹ Do they conflict with de-escalation goals? Has the more precipitous approach that is permitted by these policies increased the incidence of police-involved shootings in some circumstances where such shootings might have been avoided? Virtually no attention has been paid to this important, systemic question by police scholars.

Relatedly, the invocation of the active shooter policy against a potential shooter foreclosed the skillful use of de-escalation techniques that might have diffused the threat without endangering the lives of the officers.³⁷⁰ In the language of Perrow's theory of systems accidents, de-escalation creates slack in the social system by loosening the otherwise tight coupling that often characterizes fast-moving, uncertain police/citizen interactions.³⁷¹ It gives police more time and creates more space for diffusing the situation without triggering a rapid sequence of circumstances that is hard to arrest or constrain.³⁷² While most large police agencies have adopted de-escalation policies,³⁷³ either voluntarily or under Department of Justice consent decrees,³⁷⁴ the meaning and

³⁶⁶ McGrath Letter, *supra* note 269, at 4.

³⁶⁷ NOBLE, *supra* note 364, at 5.

³⁶⁸ *Id.*

³⁶⁹ For a discussion of active shooter events and policies, see generally J. PETE BLAIR ET AL., ACTIVE SHOOTER: EVENTS AND RESPONSE (2013).

³⁷⁰ None of the investigations discussed whether de-escalation policies could have been used. See generally CCPO REPORT, *supra* note 255; IAU REPORT, *supra* note 265; CIRC REPORT, *supra* note 266 (all failing to discuss de-escalation techniques that could have been utilized). I am not aware of whether the CCPD had such a policy in place at the time of the Tamir Rice shooting and, if so, whether the officers had attended de-escalation training.

³⁷¹ See PERROW, *supra* note 19, at 90; see also Sherman, *supra* note 89, at 436–37 (describing the dangers of tight coupling in the policing context).

³⁷² *Police De-Escalation Training Policy Shift*, POWERDMS (May 15, 2019), <https://www.powerdms.com/blog/police-de-escalation-training-policy-shift/> [<https://perma.cc/Z8GY-YQG3>].

³⁷³ *Id.*

³⁷⁴ These consent decrees are pursuant to 42 U.S.C. § 14141. See, e.g., U.S. DEP'T OF JUSTICE, INVESTIGATION OF THE BEACON POLICE DEPARTMENT AGREEMENT, <https://www.clearinghouse.net/chDocs/public/PN-NY-0006-0002.pdf> [<https://perma.cc/SN4F-LW79>] (holding that the BPD needed to revise its use of force policy to

application of de-escalation techniques continues to be debated by police leaders.³⁷⁵ Police departments that have instituted de-escalation training have reported drops in use-of-force incidents,³⁷⁶ but there is a need for systematic empirical studies to document the benefits (and costs) of such training. More robust use of de-escalation strategies may be a systems-oriented strategy that would reduce the risk of police-involved shooting in some contexts.

To summarize: unlike accountability review, sentinel event review gets us to questions (2)–(4), forcing us to ask what features of police rules, policies, management and culture might have contributed to the officers' decision to approach an active shooter, driving at 19 mph over wet and snowy grass, without backup and without adequate cover. In addition, the line of analysis I have constructed from the instant reports is only the beginning of a systems-oriented analysis. The potential causes that I have identified—along with other possible causes—could, in turn, implicate defects in supervision, management, training, or organizational culture. The goal of systems review is to identify actionable steps that will address not only the proximate cause, but second and third order causes—both human (active) and organizational (latent)—that combined with the proximate human cause to result in a catastrophic event. Recommendations

emphasize verbal de-escalation techniques as part of an agreement to resolve the DOJ's investigation of the BPD pursuant to 42 U.S.C. § 14141).

³⁷⁵ In 2016, the Police Executive Research Forum, a prominent, policing think tank, published its Guiding Principles on Use of Force, which urged police agencies to “[a]dopt de-escalation as formal agency policy.” See POLICE EXEC. RESEARCH FORUM, GUIDING PRINCIPLES ON USE OF FORCE 40 (Mar. 2016). There was immediate pushback from the International Association of Chiefs of Police (IACP), a large professional association for law enforcement worldwide. See Tom Jackman, *National Police Groups Add ‘De-Escalation’ to New Model Policy on Use of Force*, WASH. POST (Jan. 17, 2017), <https://www.washingtonpost.com/news/true-crime/wp/2017/01/17/national-police-groups-add-de-escalation-to-new-model-policy-on-use-of-force/?noredirect=on> [<https://perma.cc/T5VX-UYNY>]. In 2017, however, a group of eleven national police organizations, including IACP, adopted a model policy that incorporated the concept of de-escalation. See NATIONAL CONSENSUS POLICY AND DISCUSSION PAPER ON USE OF FORCE 2–3 (Oct. 2017), https://www.theiacp.org/sites/default/files/all/no/National_Consensus_Policy_On_Use_Of_Force.pdf [<https://perma.cc/6NNH-N77P>]. Several large police groups, including two national sheriffs' associations and the Major Cities Chiefs Association, and PERF, declined to sign on to this document because it included other policies, for example, the use of warning shots, with which they disagreed. Jackman, *supra* note 375. Most states (thirty-four total) do not mandate de-escalation training, leaving the decision whether to train up to local chiefs and sheriffs. Many departments do not provide such training, citing reasons such as cost, lack of staff, and belief that the training is unnecessary or is a rebuke to traditional policing. Curtis Gilbert, *Not Trained to Kill*, AM. PUB. MEDIA REP. (May 5, 2017), <https://www.apmreports.org/story/2017/05/05/police-de-escalation-training> [<https://perma.cc/45RQ-MHA3>].

³⁷⁶ See, e.g., POLICE EXEC. RESEARCH FORUM, *supra* note 375, at 15; see also Zaid Jilani, *Police Officers Should Be Trained in De-Escalation. It Works*, INTERCEPT (Nov. 9, 2017), <https://theintercept.com/2017/11/09/baltimore-police-deescalation-video/> [<https://perma.cc/3Q8W-TDFA>].

are designed not only, or primarily, to change the behavior of human causers, but to make it harder for them to make mistakes.

b. *The Dispatcher's Call*

Returning to our list of “why” questions, we are ready to tackle (5)–(6), which interrogate the response to “why” question (4); namely, why did the officers mistakenly think they were facing an active shooter?

Why (5)? Because the officers were responding to a *dispatcher's inaccurate report* that there was an adult male in the park who was threatening people with a gun.

Why (6)? Because the *dispatcher failed to tell* police that the 911-caller had actually said that the gun was “probably fake and the alleged shooter was “probably a juvenile.”

To get at these questions, I need to fill in the beginning of the story of what happened on November 22, 2014, the day that Tamir Rice was shot.³⁷⁷ At approximately 3:24 pm, a Cleveland Police dispatcher received a 911 call in which the caller's initial words were, “I'm sitting here in the park . . . by the West Boulevard Rapid Transit Station. There's a guy with a pistol. It's probably fake, but he's like pointing it at everybody.”³⁷⁸ Two more times in the course of a very short conversation, the caller expressed uncertainty about whether the gun was real, saying “It's probably fake” and “I don't know if it's real or not.”³⁷⁹ The caller also said the guy was “probably a juvenile.”³⁸⁰

Despite the fact that the caller expressed multiple qualifications, the call-taker did not convey these qualifications to the police dispatcher who told police: “Hey we have a Code-1³⁸¹ at Cudell. Everybody is tied up on priorities. Supposed to be a guy sitting on the swings pointing a gun at people.”³⁸² And again,

Alright, it's at Cudell Rec Center; 19, 10 West Boulevard; 1, 9, 1, 0 West Boulevard. [911 caller] calling. He said in the park by the Youth Center, there's a black male sitting on the swing. He's wearing a camouflage hat, a gray jacket with black sleeves. He keeps pulling a gun out of his pants and pointing it at people.³⁸³

³⁷⁷ CCPO REPORT, *supra* note 255, at 2.

³⁷⁸ *Id.*

³⁷⁹ *Id.* at 3.

³⁸⁰ *Id.* For text of the entire 911 call, see *id.* at 2–3.

³⁸¹ A Code-1 is the highest priority call and it “designated the incident as [posing] a significant public risk.” *Id.* at 3, 41.

³⁸² *Id.* at 3.

³⁸³ CCPO REPORT, *supra* note 255, at 4.

As a result of this message, Officers Loehmann and Garmback volunteered to respond to what was deemed the highest priority police call.³⁸⁴ They later testified that they believed they were responding to an “active shooter” situation, which under police protocols might have given them justification to approach the suspect without waiting for backup.³⁸⁵ Their expectation that the person they were about to encounter was an adult threatening people with a real gun shaped their expectations and tactical decisions as they drove into the park and confronted the suspect.³⁸⁶ When Officer Loehmann disembarked with his gun drawn and saw the suspect reach toward his waistband, he believed the suspect was now threatening him with a real gun.³⁸⁷ He did not know that the suspect was a child and the gun he was allegedly reaching for was a nonlethal “airsoft” gun.³⁸⁸

The call-taker’s errors were prior workplace mistakes, holes in an earlier layer of Swiss cheese, weaknesses in the layers of protection that might have reduced the risk of (or prevented) the accident. The IAU investigation concluded that the call-taker had “failed to include [certain pertinent] information in the incident or to update the incident with the applicable [information],” in violation of Bureau of Communications and Property Control, Communications Control Section, Policy and Procedure Number 2012-04(VII).³⁸⁹

According to police experts, procedures requiring additional questioning and updating reflect the necessity for call-takers to be sufficiently skeptical of the accuracy and veracity of the 911 caller. While information given from a citizen-informant who gives his or her name and phone number is considered the most accurate form of informant information,³⁹⁰ dispatchers are also trained to be skeptical: many 911 calls are outright false and/or contain incorrect or inaccurate information.³⁹¹ The uncertainty conveyed in the call in this case

³⁸⁴ *Id.* at 3.

³⁸⁵ *Id.* at 6, 45. It is not clear that even based on the erroneous dispatch the situation qualified as an “active shooting” as the suspect had not shot anyone or actively threatened to shoot. See *supra* notes 362–65 and accompanying text.

³⁸⁶ CCPO REPORT, *supra* note 255, at 6–7.

³⁸⁷ *Id.* at 6.

³⁸⁸ *Id.* at 2.

³⁸⁹ IAU REPORT, *supra* note 265, at 9–10. This policy requires the call-taker to “obtain the basic information and immediately send the information to the dispatcher” informing the caller that the call-taker “must ask a few more questions, advising [the caller] that this will not delay the information being sent to the dispatcher or the responding zone car.” *Id.* at 9. The call-taker is to “gather pertinent information on the critical call and update the incident as needed.” *Id.* at 9–10.

³⁹⁰ CCPO REPORT, *supra* note 255, at 42 (citing LEWIS R. KATZ, OHIO ARREST, SEARCH AND SEIZURE 93 § 2:22 (2015 ed.) (concluding that the officers had probable cause that the suspect had violated Ohio’s felonious assault statute by taking a gun out and pointing it at people)).

³⁹¹ See, e.g., CLARK, *supra* note 340, at 9. Officer Clark, who was retained by the Rice family in their § 1983 suit against the City of Cleveland, see CCPO REPORT, *supra* note 255, at 31, had 40 years of experience in law enforcement. CLARK, *supra* note 340, at 2, 9. As a former supervisor in the Los Angeles County Sheriff’s Department communications center,

would have required, at a minimum, a means for the informant to make contact with the dispatched units to vet the information the dispatcher had received.³⁹² This was especially important given that Tamir was dressed in fairly ordinary clothing,³⁹³ which would have made it more difficult to identify him quickly and increased the risk of misidentification. The dispatcher should have instructed the informant to move to a safe place and remain on the line to provide accurate information or point out the target to police officers.³⁹⁴

The call-taker also failed to convey to the dispatcher and thus to police officers converging on the scene the specific uncertainties the 911 caller had expressed when calling in the alleged threat, namely that the person he had observed might be a kid (“juvenile”) playing around with a toy (“fake”) gun.³⁹⁵ According to Assistant County Prosecutor Matthew Meyer who reviewed the entire episode for the Cuyahoga County Prosecutor’s Office, if the officers had received this “critical information,” they “would not have considered this incident to have been so serious and almost certainly would have used different tactics.”³⁹⁶ The information the officers received from the dispatcher “led the two responding officers to believe that a [grown] man with a real gun was threatening innocent people’s lives at a recreation center.”³⁹⁷ Their mistaken beliefs distorted their assessment of the risks posed, shaped their tactical choices, and negatively impacted their response to Tamir’s actions. When Tamir “unexpectedly moved in their direction and began pulling the gun from his waistband, the officers had no idea that it was fake or that Tamir was only twelve.”³⁹⁸

he was well acquainted with the danger of “false alarms” and the safeguards necessary to ensure that reliable information is obtained and dispatched with precision to field units. *Id.* at 9. In his view, the dispatcher’s report was “grossly incomplete.” *Id.*

³⁹² *Id.* at 9.

³⁹³ See CCPO REPORT, *supra* note 255, at 3. The caller said the black male had on “a gray coat with black sleeves,” “gray pants,” and a “camouflage hat.” *Id.*

³⁹⁴ See CLARK, *supra* note 340, at 8.

³⁹⁵ CCPO REPORT, *supra* note 255, at 69.

³⁹⁶ See News 5 Cleveland, *Full Press Conference: Grand Jury Declines to Indict Officer who Shot 12-year-old Tamir Rice in Clev.*, YOUTUBE (Dec. 28, 2015), <https://www.youtube.com/watch?v=N7GZFbEm2eo> [<https://perma.cc/4XZZ-UGSK>] (reporting by Assistant County Prosecutor Matthew Meyer with quoted material at 39:00–39:23). The IAU investigator recommended that the call-taker be disciplined for her failure to “include the information [that the suspect might be a juvenile and the gun might be fake] in the incident or to update the incident with the applicable [information].” IAU REPORT, *supra* note 265, at 10. This failure violated police policy concerning how incidents are to be reported and updated. See *id.* The CIRC also concluded that the call-taker “may have violated” police policy. See CIRC REPORT, *supra* note 266, at 19. In discussing the effect of the erroneous dispatch message, CIRC investigators noted: “From [the officers’] perspective they were preparing to respond to the call for a male with a gun pointing it at people.” *Id.* at 17.

³⁹⁷ News 5 Cleveland, *supra* note 396, at 53:08–53:24.

³⁹⁸ *Id.* at 53:24–53:38.

Neither the IAU investigation nor the CIRC investigation (nor most of the police experts who reviewed the case) adequately discussed the *possible causal link* between the erroneous dispatch information the officers received and their use of deadly force in the park.³⁹⁹ This is a crucial omission if the goal is to avoid the next tragic shooting. It again points out the limitations of accountability review.

Two police experts did consider a possible link—concluding there was none—but for conflicting reasons. Police expert Ken Katsaris concluded that the omitted information was “irrelevant to the deadly force decision” because at the *precise point* when Tamir Rice appeared to be reaching for his waistband “the only objectively reasonable decision to be made by Loehmann was to utilize deadly force and deploy his firearm.”⁴⁰⁰ Police expert Roger Clark agreed that the dispatch was irrelevant but for a different reason. He reasoned that even based upon what Officer Loehmann *did* know “it was unreasonable for him (Loehmann) to jump out with his gun drawn and immediately open fire within 1.7 seconds at a person he could not be sure was the subject of the dispatch.”⁴⁰¹ Crucially, both experts applied a very narrow timeframe—the exact moment of the shooting—in finding the erroneous dispatch causally irrelevant.

One last piece of the puzzle is that the erroneous dispatch was the first step in the causal chain that led Officers Garmback and Loehmann to apply the department’s “active shooter” policy.⁴⁰² As noted earlier, this was a crucial judgment: the police officers believed it permitted, indeed compelled them to act more aggressively, more quickly, and without waiting for backup. Approaching an armed and dangerous individual at close range without backup would obviously have increased the risk that the officers would find it necessary

³⁹⁹ The IAU REPORT recommended punishment for the call-taker’s failure accurately to convey all relevant information to the officers, but did not connect it to the shooting. IAU REPORT, *supra* note 265, at 10. The CIRC Report noted in passing that the erroneous transmission led the officers to believe “they were preparing to respond to the call for a male with a gun pointing it at people,” but did not pursue this connection further. CIRC REPORT, *supra* note 266, at 17 (recommending follow-up training for dispatchers involved, including training on following correct procedures for documenting incoming information, but not how to handle unclear reporting from a 911 caller). The CCPO Report came the closest to connecting the erroneous dispatch with the shooting, noting that the reasonableness of the officers’ actions must be judged based on their “tragically mistaken [view] about the key facts of the case.” CCPO REPORT, *supra* note 255, at 69. The conclusion that the officers had acted lawfully, however, marked the end of the legal inquiry with no further need to interrogate the causal connections for purpose of prevention. *See id.* at 69–70.

⁴⁰⁰ W. KEN KATSARIS, REPORT AND OPINIONS OF W. KEN KATSARIS POLICE CONSULTANT AND TRAINER: USE OF DEADLY FORCE BY CLEVELAND AND POLICE OFFICER TIMOTHY LOEHMANN RESULTING IN DEATH OF TAMIR E. RICE ON NOVEMBER 22, 2014, at 7 (Nov. 2015), http://prosecutor.cuyahogacounty.us/pdf_prosecutor/en-US/Tamir%20Rice%20Investigation/Katsaris%20Report%20on%20Tamir%20Rice_Redacted.pdf [<https://perma.cc/SCJ6-GUQD>].

⁴⁰¹ CLARK, *supra* note 340, at 10.

⁴⁰² Police expert Jeffrey Noble disagreed that the circumstances triggered the CPD’s active shooter police. *See supra* notes 362–65 and accompanying text.

to use deadly force against the suspect.⁴⁰³ It should be clear that a contain-and-wait-for-backup strategy might have produced a different result than a strategy designed to neutralize a potentially dangerous gunman: if the officers had received the correct information about the suspect, sought backup to secure the recreation center, taken more time to consider their approach, and kept in touch with the dispatcher, the situation might have resolved without a shooting. If so, the dispatcher's error that led to the designation "active shooter" may have played a decisive role in the shooting of Tamir Rice.

In a true systems review, my linear analysis of questions (5)–(6) would have been supplemented by an exploration of additional possible causes for the dispatcher's actions: was there a policy in place that led the dispatcher to decline to pass on information she was unsure of? Was the dispatcher operating without clear guidance on how to handle transmission of disputed or unclear information? Was there a policy in place, but the dispatcher was inadequately trained on that policy? Did the dispatcher fail to disclose out of fear that if she cast doubt on whether the gun was real, police might place themselves in danger? Was the dispatcher distracted, inattentive or careless as a result of personal circumstances (e.g., fatigue) or workplace conditions (e.g., low morale)? Any of these causes could, in turn, lead to additional "why" questions and ultimately to additional human or systems causes that could be addressed by remedial recommendations.

V. THE PROMISE OF SENTINEL EVENT/SYSTEMS REVIEW IN POLICING

The purpose of my discussion in the prior section was to identify and answer some of the "why" questions that sentinel event review might tackle. While my analysis relied on the information contained in the instant investigations, it differed from the administrative and legal investigations of the Tamir Rice shooting in at least three important ways: *First*, my analysis expanded the causal timeframe. It went behind the proximal human causer to ferret out second and third level causes outside the narrow time frame of the immediate causer's actions. In addition, rather than asking whether each human causer was blameworthy for violating a law or policy applicable to their specific area of

⁴⁰³ As noted earlier, where activity poses a serious risk to public safety, most police departments have shifted from a "contain-and-wait-for-backup strategy" towards a policy that authorizes the first police responders to "quickly engage and attempt to neutralize active shooters." CCPO REPORT, *supra* note 255, at 46 (citing Anderson Cooper, *Responding to an Active Shooter*, 60 MINUTES (Nov. 22, 2015), <https://www.cbsnews.com/news/responding-to-an-active-shooter-60-minutes-anderson-cooper/> [<https://perma.cc/J3BW-SB62>]). The CPD defined an active shooter as one whose "activity and use of a firearm (or any other deadly instrument, device, machine, dangerous ordnance [sic], or deadly hazard) is causing or attempting to cause immediate death and/or serious bodily harm in a well populated area (target rich environment), such as a school, church, business, or any other public place." *Id.*

responsibility, I asked how their conduct ultimately contributed to the end result: the tragic shooting of an unarmed boy.

Second, the analysis went behind individual *human* errors to ask what kinds of *latent systemic causes* might lie behind them, including error-producing conditions in the workplace—such as low morale, fatigue, poor police training, or inadequate equipment—and organizational factors—such as management decisions, organizational processes, and corporate culture.⁴⁰⁴

Finally, the ultimate purpose of my inquiry was not primarily to identify errors made by individual actors in order to sanction them. Its purpose, rather, was to identify systems-oriented barriers and defenses that could reduce the risk of the kinds of human errors that may have occurred.

Detailed investigation of particular, harm-causing events of this sort has been an essential feature of systems review in commercial aviation and medicine.⁴⁰⁵ Recall, however, that the dramatic advances in safety in these contexts depends upon additional analysis that goes *beyond* single incident review. Risk management experts have learned to use the insights gleaned from particular, sentinel event reviews to uncover *patterns* of repeated, similar errors that were found to have caused repeated, similar accidents.⁴⁰⁶ This pattern evidence has then been employed by risk managers to formulate systems-oriented solutions to address the repeated errors.⁴⁰⁷ It is this pattern-identifying analysis that is responsible for the dramatic advances in safety in commercial aviation and medicine.⁴⁰⁸

In Part A, below, I next identify some features of the Tamir Rice shooting that have recurred in other police shootings, and thus may call for systems-oriented solutions. I can only gesture in this direction, however. It would ultimately fall to policing experts to identify errors and corresponding points of systems vulnerability, and then formulate and implement solutions designed to address these failures. Then, in Part B, I broaden the discussion beyond the Tamir Rice shooting. I discuss systems-oriented solutions suggested by data-informed analysis of demographic and circumstantial features of police shootings writ large.

⁴⁰⁴This is why broadening the timeframe in Fourth Amendment analysis would be helpful, but not sufficient. As noted above, some circuits have permitted claimants to include, in their excessive force claim, circumstances that preceded the actual moment of the shooting. *See supra* note 275 and accompanying text. This could permit a court to consider whether reckless or unreasonable tactical decisions prior to the shooting unreasonably increased the risk that deadly force would be necessary. For example, in an excessive force claim against Officer Loehmann, it might have permitted a court to consider Loehmann's role in the decision to drive the patrol car so close to Tamir that it put the officers in danger. For obvious reasons, however, even the broader timeframe would not yield the same benefits as root cause analysis, which not only broadens the timeframe, but includes consideration of second and third level causes not directly related to Officer Loehmann's actions.

⁴⁰⁵*See supra* Parts III.A–B.

⁴⁰⁶*See supra* Part III.C.

⁴⁰⁷*See, e.g.,* Kapur et al., *supra* note 130, at 7.

⁴⁰⁸*See id.*

A. *Beyond the Single Incident*

Comparing the Tamir Rice case with other incidents of police-involved shootings suggests some repeated circumstances that may increase the risk of police shootings. I have already discussed two such circumstances; namely, circumstances involving active shooters and circumstances that might call for de-escalation strategies. Comparing police responses in multiple contexts involving the invocation of active shooter policies could lead to systemic lessons for safer, more effective use of police force. Similarly, comparing the use of de-escalation strategies in multiple contexts could enhance police learning about best practices in diffusing potentially dangerous confrontations.

A third systemic factor that contributed to the shooting of Tamir Rice was a breakdown in communication at several points. The first was the transfer of erroneous information between the dispatcher and the police officers, which led them to think they were facing an adult, active shooter with an actual gun.⁴⁰⁹ The second communication breakdown was Officer Garmback's failure to coordinate his approach with another police vehicle that was in the area and was formally assigned to the jurisdiction in which the park was located.⁴¹⁰ Garmback failed to report his arrival time to the dispatcher and neglected to make radio contact at any time prior to the shooting.⁴¹¹ As Garmback's disciplinary letter framed it:

No one knew where you were or what you were doing, and you did not know where anyone else was or what they were doing, until after the shooting occurred. . . . You never requested instructions from the primary car or otherwise coordinated your efforts with the primary car. You never gave the primary car the opportunity to decide on the best strategy.⁴¹²

Had Garmback communicated his location, the other officers—who arrived at the park only a few minutes later—could have provided backup, which might have changed the chosen approach and created space for de-escalation strategies.

Significantly, communication breakdown among team members is one of the most significant systemic causes of accidents that has been identified by risk management experts in commercial aviation and medicine.⁴¹³ Airlines have

⁴⁰⁹ CCPO REPORT, *supra* note 255, at 69.

⁴¹⁰ McGrath Letter, *supra* note 269, at 2.

⁴¹¹ *Id.*

⁴¹² *Id.* at 3.

⁴¹³ See, e.g., Helmreich, *supra* note 176, at 781 (arguing that pilots and doctors have “common interpersonal problem areas and similarities in professional culture” including the breakdown of communication); MACRAE, *supra* note 157, at 96 (concluding that “[c]ommunication problems are regularly found to be key contributors to adverse events and accidents”); A.J. Starmer et al., *Changes in Medical Errors After Implementation of a Handoff Program*, 371 NEW ENG. J. MED. 1803, 1803 (2014) (identifying “miscommunications” as a “leading cause of serious medical errors”).

sought to address the risks of miscommunication in the cockpit or between pilots and other airline personnel by requiring airline employees to undergo Crew Resource Management (CRM) training.⁴¹⁴ CRM training can be traced back to National Aeronautics and Space Administration research, which identified human error resulting from failures of interpersonal communications, decision making and leadership as a major cause of air crashes.⁴¹⁵ CRM is a set of instructional strategies aimed at reducing human error and increasing the effectiveness of flight crews by improving teamwork in the cockpit.⁴¹⁶ While it is difficult to establish a clear causal link between CRM training and airline safety, studies demonstrate a positive effect on attitudes, knowledge, and safety-enhancing behavior.⁴¹⁷

Medical experts have sought to replicate the CRM program in the medical context, particularly among personnel in the operating room.⁴¹⁸ Hospitals have also sought to improve communication by standardizing what is communicated when patients are “handed off” from one medical person to another, with dramatic reduction of medical errors.⁴¹⁹

Police officers, like commercial aviation personnel and medical personnel, work in teams, which include other officers, administrative personnel, dispatchers, etc. Miscommunication and misunderstanding among members of the policing team and uncertainty about who is in charge have contributed to many tragic scenarios in the policing context.⁴²⁰

⁴¹⁴ Robert L. Helmreich et al., *The Evolution of Crew Resource Management Training in Commercial Aviation*, 9 INT’L J. AVIATION PSYCHOL. 19, 19 (1999).

⁴¹⁵ *Id.*

⁴¹⁶ Paul O’Connor et al., *Crew Resource Management Training Effectiveness: A Meta-Analysis and Some Critical Needs*, 18 INT’L J. AVIATION PSYCHOL., 353, 353–54 (2008).

⁴¹⁷ Eduardo Salas et al., *Does Crew Resource Management Training Work? An Update, an Extension, and Some Critical Needs*, 48 HUM. FACTORS 392, 410 (2006).

⁴¹⁸ See, e.g., Kapur et al., *supra* note 130, at 5 (arguing that communication failures may be more likely to occur in healthcare than in aviation cockpit settings and suggesting that some healthcare settings may benefit from implementation of aviation procedures); Leonie Seager et al., *Applying Aviation Factors to Oral and Maxillofacial Surgery—The Human Element*, 51 BRITISH J. ORAL MAXILLOFACIAL SURGERY 8, 8 (2013) (identifying features of crew resource management training that could readily be applied to healthcare settings).

⁴¹⁹ See generally Starmer et al., *supra* note 413 (describing multicenter study assessing programs de-signed to improve handoff of information about patient care).

⁴²⁰ See generally Kimberly Kindy, *The Post Asked Experts to Examine 5 Viral Videos of Police Shootings. Here’s Their Analysis*, WASH. POST (July 22, 2016), https://www.washingtonpost.com/national/the-post-asked-experts-to-examine-5-viral-videos-of-police-shootings-heres-their-analysis/2016/07/22/47a0a446-4df2-11e6-a422-83ab49ed5e6a_story.html [<https://perma.cc/2J4X-67BS>] (pointing out breakdowns in communication that contributed to lethal police-involved shootings); see also Barbara E. Armacost, *The Organizational Reasons Why Police Departments Don’t Change*, HARV. BUS. REV. (Aug. 19, 2016), <https://hbr.org/2016/08/the-organizational-reasons-police-departments-dont-change> [<https://perma.cc/2ZCA-HZ87>]. One tragic and notorious example of a lethal breakdown in communication between officers and the suspect and among the officers on the scene is the shooting of Amadou Diallo on February 4, 1999. See

Finally, the Tamir Rice shooting raises the broader question of mistakes caused by realistic-looking, nonlethal guns. In 2016, the *Washington Post* did an analysis of police shootings involving “ultra-real-looking pellet guns, toy weapons and non-functioning replicas.”⁴²¹ According to the *Washington Post*’s database of fatal police shootings, over the two years prior to the article’s publication, police had shot and killed eighty-six people in such encounters.⁴²² Half of these shootings occurred at night.⁴²³ Police report that in sixty cases the suspect pointed the gun at them, and in virtually all of the cases the suspect failed to comply with their instructions.⁴²⁴ Significantly, in a large percentage of these cases—thirty-eight out of eighty-six—the suspect had a history of mental illness.⁴²⁵ Ten of the shootings began as robberies⁴²⁶ and fourteen resulted from calls of domestic disturbances.⁴²⁷ Over the years, however, a significant number of police shootings involving imitation firearms have involved individuals who were not committing crimes, some of whom were young children.⁴²⁸

In 1988, Congress passed legislation that required a bright orange barrel on some imitation firearms, including water guns, many replicas and Airsoft guns that fire nonmetallic projectile, but it exempted BB guns, pellet guns, and replicas of antique firearms.⁴²⁹ Subsequent studies mandated by federal law to study whether the mandated orange barrels would prevent shootings found that the markings did not help police distinguish between toy guns and real guns.⁴³⁰

generally Jane Fritsch, *The Diallo Verdict: The Overview; 4 Officers in Diallo Shooting Are Acquitted of All Charges*, N.Y. TIMES (Feb. 26, 2000), <https://www.nytimes.com/2000/02/26/nyregion/diallo-verdict-overview-4-officers-diallo-shooting-are-acquitted-all-charges.html> [<https://perma.cc/86C4-AGU8>] (describing chaotic use of firearms by four officers against unarmed Diallo in his apartment vestibule).

⁴²¹ John Sullivan et al., *In Two Years, Police Killed 86 People Brandishing Guns that Look Real—But Aren’t*, WASH. POST (Dec. 18, 2016), <https://www.washingtonpost.com/investigations/in-two-years-police-killed-86-people-brandishing-guns-that-look-real-but-arent/2016/12/18/ec005c3a-b025-11e6-be1c-8cec35b1ad25story.html> [<https://perma.cc/CEA9-4N9B>].

⁴²² *Id.*

⁴²³ *Id.*

⁴²⁴ *Id.*

⁴²⁵ *Id.*

⁴²⁶ *Id.* According to a 1990 study of shootings involving toy or imitation firearms, a nontrivial number involved suspects who were using them to commit crimes such as robbery and assault. See POLICE EXEC. RESEARCH FORUM, BUREAU OF JUSTICE STATISTICS, DEP’T OF JUSTICE, TOY GUNS: INVOLVEMENT IN CRIME AND ENCOUNTERS WITH POLICE viii (June 1990) [hereinafter TOY GUNS]. This study found that fifteen percent of all robberies are perpetrated with fake firearms. *Id.*

⁴²⁷ Sullivan et al., *supra* note 421.

⁴²⁸ See *id.* For example, five-year-old Patrick Andrew Mason was shot by a police officer who came to do a welfare check and mistook a child with a red gun for a burglar. *Id.*

⁴²⁹ *Id.*

⁴³⁰ See TOY GUNS, *supra* note 426, at viii–ix; KENNETH CARLSON & PETER FINN, ABT ASSOCIATES INC., TEST OF THE VISIBILITY OF TOY AND REPLICA HANDGUN MARKINGS x

Police confirm that it is “virtually impossible” to train officers to distinguish between actual guns and imitations from a distance.⁴³¹ They are trained to treat anything that looks like a gun as a potential lethal threat, regardless of what the suspect may try to claim.⁴³²

The risk created by imitation firearms cries out for a systemic, legislative solution. One possibility would be to mandate that the entire surface of all toy guns and BB guns be painted a bright color, as California state law requires.⁴³³ Of course, it remains to be seen whether police officers are able to distinguish the bright colors at a distance or at night. Eleven states, the District of Columbia and Puerto Rico have banned imitation firearms or imposed restrictions on their use.⁴³⁴ The cities of Washington, D.C., Baltimore, Maryland, and Boston, Massachusetts have outlawed imitation firearms in public.⁴³⁵ The risk posed by the ubiquity of imitation firearms, some made by manufacturers who advertise their imitation guns as “carbon copies” of their most popular lethal firearms, cannot be addressed at the level of the individual police agency.⁴³⁶ It requires a systemic, legislative solution.

A final, intractable, systemic issue raised by the shooting of Tamir Rice is the fact that the twelve-year-old was assumed by most everyone on the scene to have been an adult.⁴³⁷ This mistake traces back to the initial 911 caller who was

(Aug. 1989), <https://www.ncjrs.gov/pdffiles1/digitization/146870NCJRS.pdf> [<https://perma.cc/CWQ9-VTUZ>].

⁴³¹ Sullivan et al., *supra* note 421.

⁴³² See TOY GUNS, *supra* note 426, at ix. During site visits by PERF investigators conducting the study referenced in note 426, police officers described a “Shoot/Don’t Shoot” training video in which the suspect appears with a gun and says something like “Don’t shoot, it’s a toy.” When the officer stands down, the suspect shoots the officer. This training illustrates why police are taught to assume that any object that looks like a firearm is a real weapon. *Id.*

⁴³³ Sullivan et al., *supra* note 421. In 2015, Sen. Barbara Boxer (D. Cal.) introduced a bill that would have mandated the California solution as a matter of federal law, but the bill stalled in committee. *Id.*

⁴³⁴ See Kevin Frazzini, *Fracas over Fakes*, 42 ST. LEGISLATURES 8, 8 (2016).

⁴³⁵ Luke Broadwater & Yvonne Wenger, *Baltimore OKs Ban of Replica Guns*, BALT. SUN (Nov. 14, 2016), <http://www.baltimoresun.com/maryland/baltimore-city/bs-md-ci-replica-guns-20161114-story.html> [<https://perma.cc/LV98-6FM4>]; Trisha Thadani, *Boston Bans Replica Guns in Public Places*, USA TODAY (Nov. 10, 2015), <https://www.usatoday.com/story/news/nation/2015/11/10/boston-toy-guns/75487896/> [<https://perma.cc/9S9J-L5LJ>].

⁴³⁶ See, e.g., *Air Pistols*, SIG SAUER, <https://www.sigsauer.com/products/airguns/pistols/> [<https://perma.cc/VSQ5-CCGL>].

⁴³⁷ CCPO REPORT, *supra* note 255, at 3. Both Officers Loehmann and Garmback thought twelve-year-old Tamir was over eighteen years old. *Id.* at 6–7. Detective Lentz, who arrived on the scene immediately after Tamir was shot, thought the boy was seventeen or eighteen. *Id.* at 8. Patrol Officer Ken Zverina and Patrol Officer Ricardo Roman, who were in the area and arrived on the scene six minutes after the shooting described Tamir as “18–20 years old” and “early twenties” respectively. *Id.* at 10–11. Two other officers who responded to the report of shots fired, Louis Kitko and Chuck Judd, stated that Tamir looked to be somewhere between eighteen and twenty years old. *Id.* at 11–12.

unsure whether Tamir was a “juvenile.”⁴³⁸ The systemic nature of the error is reflected in social science studies showing that black boys are routinely misperceived as older than they actually are, including by police.⁴³⁹ For example, in one study black thirteen-year-old boys were routinely mischaracterized as adults by police officer participants from a large urban police department.⁴⁴⁰ The average age error for thirteen-year-old black boys was 4.59 years!⁴⁴¹ The overestimation of age was correlated with police assumptions that the black, juvenile suspects were more culpable than white boys of the same age.⁴⁴² Significantly, it was also correlated with a higher level of use of force by police against black male children, controlling for how much the suspects resisted arrest or were located in high-crime areas.⁴⁴³

Devising systemic solutions for racial disparities of this sort is a huge challenge. Some police departments have initiated programs to address implicit racial bias through educational training, with mixed success for lasting change.⁴⁴⁴ Police departments in many cities have also sought to create more racially mixed departments to better reflect the demographics of their communities.⁴⁴⁵ Community oriented policing—where officers walk the neighborhood on foot or otherwise become involved with neighborhood youth—means that police are more likely to know or recognize the juveniles in the areas they patrol. This strategy could mitigate the kind of mistakes that contributed to Tamir’s death. At the end of the day, though, structural racism is one of our nation’s biggest challenges in contexts that go well beyond policing. A more detailed account is beyond the scope of this Article.

⁴³⁸ *Id.* at 3.

⁴³⁹ Goff et al., *supra* note 331, at 530–35.

⁴⁴⁰ *See id.* at 535.

⁴⁴¹ *See id.* at 534–35. The study focused on black boys rather than girls on the ground that black boys were more likely to become involved in criminal activity. *Id.* at 528.

⁴⁴² *See id.* at 534.

⁴⁴³ *See id.* at 535. Significantly, these racial disparities were predicted by measures of dehumanization but not by traditional measures of explicit or implicit bias. *Id.* Dehumanization is “the denial of full humanness to others,” meaning that social protections from violence can be removed. *Id.* at 527 (quoting Nick Haslam, *Dehumanization: An Integrative View*, 10 PERSONALITY & SOC. PSYCHOL. REV. 252, 252 (2006)). The general association between a group and “animals” is one form of dehumanization. *Id.* at 528. For example, the association of African-Americans with great apes. *Id.*

⁴⁴⁴ For an optimistic assessment by a former police officer turned lawyer that “sophisticated training could lead to more accurate threat identifications, correcting for racial bias that officers may not even be aware of,” see Seth Stoughton, *How Police Training Contributes to Avoidable Deaths*, ATLANTIC (Dec. 12, 2014), <https://www.theatlantic.com/national/archive/2014/12/police-gun-shooting-training-ferguson/383681/> [https://perma.cc/HQW5-U7U9].

⁴⁴⁵ *See* U.S. DEP’T OF JUSTICE & EQUAL EMPLOY’ T OPPORTUNITY COMM’N, ADVANCING DIVERSITY IN LAW ENFORCEMENT 36–46 (2016), <https://www.justice.gov/crt/case-document/file/900761/download> [https://perma.cc/WZH7-UZLE].

B. Data-Informed Analysis: Looking for Patterns in Police Shootings

The identification of system vulnerabilities in the circumstances leading up to the shooting of Tamir Rice and the effort to identify similar vulnerabilities in other police shootings illustrates the way a single incident can be mined for potential pan-incident vulnerabilities and corresponding pan-incident solutions. But analyzing specific incidents is only one strategy for this.

A second strategy is to analyze the wide range of accessible statistical data that is currently available on police shootings for patterns that suggest potential systemic changes. This kind of research and analysis, focusing specifically on systems-oriented interventions, are still in their infancy. One of the most thorough recent studies along these lines is Franklin Zimring's 2017 book, *When Police Kill*, made possible by newly accessible statistical data from two websites, both launched in 2015 to keep detailed data on police shootings.⁴⁴⁶

For many years the FBI and the Centers for Disease Prevention were the only available sources of data on the incidence and circumstances of police-involved fatal shootings. Government officials have admitted that these data, which depend on voluntary reporting,⁴⁴⁷ were and are woefully inadequate and incomplete.⁴⁴⁸ In 2015, the *Washington Post* and the *Guardian* (a British daily newspaper) each launched databases designed to keep better records of police-involved shootings.⁴⁴⁹

⁴⁴⁶ See ZIMRING, *supra* note 249, at 43.

⁴⁴⁷ The FBI publishes an annual “justifiable homicide by law enforcement” count using data voluntarily supplied by police departments. FED. BUREAU OF INVESTIGATION, CRIMINAL JUSTICE INFORMATION SERVICES DIVISION UNIFORM CRIME REPORTING PROGRAM: 2019.1 NATIONAL INCIDENT-BASED REPORTING SYSTEM USER MANUAL 33 (2018), <https://www.fbi.gov/file-repository/ucr/ucr-2019-1-nibrs-user-manual.pdf> [<https://perma.cc/4D9B-FXS5>]. Recently, the Justice Department announced that it is trying out a new open-source system to count officer-involving shootings. Oliver Laughland et al., *Justice Department Trials System to Count Killings by US Law Enforcement*, GUARDIAN (Oct. 5, 2015), <https://www.theguardian.com/us-news/2015/oct/05/justice-department-trials-system-count-killings-us-law-enforcement-the-counted> [<https://perma.cc/ETE3-HPD2>]. The program is being run by the Bureau of Justice Statistics. *Id.* This new “hybrid” system—combining open source data with a survey of local authorities—resulted in a count that was more than twice the rate previously reported by the FBI. Jon Swaine & Ciara McCarthy, *Killings by US Police Logged at Twice the Previous Rate under New Federal Program*, GUARDIAN (Dec. 15, 2016), <https://www.theguardian.com/us-news/2016/dec/15/us-police-killings-department-of-justice-program> [<https://perma.cc/AU2Z-RGJH>]. See generally BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, ARREST-RELATED DEATHS PROGRAM REDESIGN STUDY, 2015–16: PRELIMINARY FINDINGS (2016).

⁴⁴⁸ Mark Tran, *FBI Chief: ‘Unacceptable’ that Guardian Has Better Data on Police Violence*, GUARDIAN (Oct. 8, 2015), <https://www.theguardian.com/us-news/2015/oct/08/fbi-chief-says-ridiculous-guardian-washington-post-better-information-police-shootings> [<https://perma.cc/J8LE-SLCX>].

⁴⁴⁹ Julie Tate et al., *How the Washington Post Is Examining Police Shootings in the United States*, WASH. POST (July 7, 2016), <https://www.washingtonpost.com/national/how-the-washington-post-is-examining-police-shootings-in-the-united-states/2016/>

The *Washington Post* began compiling a database of every fatal shooting in the United States by a police officer in the line of duty.⁴⁵⁰ The *Post* tracks more than a dozen details about each killing, including the race of the victim, the circumstances of the shooting, and whether the person was armed or experiencing a mental health crisis.⁴⁵¹ It obtains the information for the database from local news reports, law enforcement websites, social media, and by monitoring independent databases such as Killed by Police and Fatal Encounters.⁴⁵²

The *Guardian*'s website—"The Counted"—is an interactive database that uses a "verified crowdsourcing model to record fatal encounters through sixteen data points."⁴⁵³ The *Guardian* has also published a series of long form investigations into recurring police use of force issues identified by analysis of the data.⁴⁵⁴

Police scholars urging systems-oriented review in policing have begun to rely on these databases to identify trends and patterns associated with increased

07/07/d9c52238-43ad-11e6-8856-f26de2537a9d_story.html [on file with the author]; Oliver Laughland & Jamiles Lartey, *Counting Police Killings in the US: Landmark Stories that Led to Change*, GUARDIAN (Dec. 9, 2015), <https://www.theguardian.com/us-news/2015/dec/09/counting-police-killings-landmark-stories> [<https://perma.cc/B8WF-4JCN>].

⁴⁵⁰Tate et al., *supra* note 449.

⁴⁵¹*Id.*

⁴⁵²*Id.* In 2016, the *Post* began gathering additional information by filing open records requests with police departments. "More than a dozen additional details are being collected about officers in each shooting," and the "[o]fficers' names are being included in the database after The Post contacts the departments to request comment." *Id.*

⁴⁵³Laughland & Lartey, *supra* note 449; *see also The Counted: About the Project*, GUARDIAN, <https://www.theguardian.com/us-news/ng-interactive/2015/jun/01/about-the-counted> [<https://perma.cc/84LY-3MJV>] ("The Counted is a project by *The Guardian*—and you—working to count the number of people killed by police and other law enforcement agencies in the United States throughout 2015 and 2016, to monitor their demographics and to tell the stories of how they died.").

⁴⁵⁴*See generally The Counted*, GUARDIAN, <https://www.theguardian.com/us-news/series/counted-us-police-killings-us-database> [<https://perma.cc/56X9-7DUM>]. The series includes investigations of police shooting into moving vehicles, police shootings of suicidal victims, the deadly use of Tasers, and a five-part investigation into Kern County, California, which had the highest rate of officer-involved deaths in the United States in 2015. Jon Swaine et al., *Moving Targets*, GUARDIAN (Sept. 1, 2015), <https://www.theguardian.com/us-news/2015/sep/01/moving-targets-police-shootings-vehicles-the-counted> [<https://perma.cc/88YM-B42A>]; Jon Swaine & Jamiles Lartey, *Forced to Fire: Are US Police Hiding Behind 'Suicide by Cop' Shootings?*, GUARDIAN (Oct. 6, 2015), <https://www.theguardian.com/us-news/2015/oct/06/suicide-by-cop-the-counted> [<https://perma.cc/L5WG-5LA7>]; Oliver Laughland et al., *Bolts from the Blue*, GUARDIAN (Nov. 5, 2015), <https://www.theguardian.com/us-news/2015/nov/05/police-tasers-deaths-the-counted> [<https://perma.cc/EE2M-ZJHG>]; Jon Swaine & Oliver Laughland, *The County: The Story of America's Deadliest Police*, GUARDIAN (Dec. 1, 2015), <https://www.theguardian.com/us-news/2015/dec/01/the-county-kern-county-deadliest-police-killings> [<https://perma.cc/CZ5A-4D8G>].

risk of police shootings.⁴⁵⁵ Perhaps the most comprehensive is Franklin Zimring's book-length analysis of police-shooting data.⁴⁵⁶ One of the most important goals of Zimring's analysis is to find systems-oriented strategies that reduce police shootings of civilians—even legally justified ones—*without compromising police safety*.⁴⁵⁷ So, for example, his recommendations for empirical research call for studies that encompass *both* investigations on the character and causes of police use of fatal force and research on minimizing threats to police from life-threatening incidents while on duty: "Testing the current assumptions about what threatens police and searching for tactics and limitations on police force that can reduce civilian death rates at no cost to police safety are the central tasks of policy research on police use of deadly force."⁴⁵⁸

For Zimring, the most important strategy for decreasing the use of deadly force by armed police officers is clear restrictions on the *circumstances* in which and the *extent* to which police are permitted to use force.⁴⁵⁹ In getting at what such restrictions should look like, a key question is what kinds of police/citizen interactions result in the highest incidence of police shootings. One systemic strategy would be to reduce, when possible, the kinds of police/citizen interactions that increase this risk.⁴⁶⁰

Zimring used 2015 data from the *Guardian* website to answer the police/citizen interaction question posed above.⁴⁶¹ His analysis revealed that while most of the categories of citizen activity resulting in police-involved shootings involved relatively serious, criminal activities (criminal investigation, crime in progress, arrest in progress, serving warrants, armed and dangerous, shots fired), fully nine percent of shootings—approximately 100 deaths per

⁴⁵⁵ See Sherman, *supra* note 89, at 428 (first citing David Klinger, *Social Theory and the Street Cop: The Case of Deadly Force*, IDEAS IN AM. POLICING 1, 1–15 (2005); and then citing Jordan C. Pickering & David A. Klinger, *Enhancing Police Legitimacy by Promoting Safety Culture*, in THE POLITICS OF POLICING: BETWEEN FORCE AND LEGITIMACY 21, 21–39 (Mathieu Deflem ed., 2016)).

⁴⁵⁶ See generally ZIMRING, *supra* note 249.

⁴⁵⁷ See *id.* at 162.

⁴⁵⁸ *Id.*

⁴⁵⁹ *Id.* at 227, 231.

⁴⁶⁰ For a similar recommendation, see Schwartz, *supra* note 243, at 546; see also Conor Friedersdorf, *End Needless Interactions with Police Officers During Traffic Stops*, ATLANTIC (July 8, 2016), <https://www.theatlantic.com/politics/archive/2016/07/end-needless-interaction-with-cops-during-traffic-stops/490412/> [<https://perma.cc/GJ3G-PV3L>] ("A broken taillight does not require armed agents of the state to approach a motorist's window."); Christopher Kutz, *Op-Ed: For a Safer America, Curtail Traffic Stops*, L.A. TIMES (Aug. 13, 2015), <http://www.latimes.com/opinion/op-ed/la-oe-0813-kutz-traffic-stops-20150812-story.html> [<https://perma.cc/6RVA-8TCR>] (arguing that traffic stops pose substantial danger to police officers, risk escalation, and confrontation with no corresponding increase in road safety).

⁴⁶¹ ZIMRING, *supra* note 249, at 43.

year—occurred after a traffic stop.⁴⁶² This was despite the fact that individuals who are shot during a traffic stop are disproportionately unlikely to be armed.⁴⁶³

While police officers are relatively unlikely to be injured or killed during routine traffic stops, the “dominant narrative” in policing is that traffic stops are fraught with hidden, unpredictable danger.⁴⁶⁴ Jordan Blair Woods describes how police academies “show officer trainees videos of the most extreme cases of violence against officers during routine traffic stops in order to stress that mundane police work can quickly turn into a deadly situation if they become complacent on the scene or hesitate to use force.”⁴⁶⁵ According to police magazines and websites, traffic stops figure prominently in law enforcement training videos because “the traffic stop remains one of the most dangerous aspects of police work.”⁴⁶⁶ Given their training, it is not surprising that traffic stops create stress and anxiety and police approach them ready for action. Joanna Schwartz frames it this way: “As an officer is walking up to the car window, he is likely to be primed for the possibility that the person he has stopped is armed and dangerous, and that he may need to make a split-second decision about whether to use force.”⁴⁶⁷ This creates precisely the kind of “cognitive strain that heightens implicit biases and makes error more likely.”⁴⁶⁸

Given these realities, Zimring’s observation is important: while many of the risk-creating police/citizen interactions he identified are impossible to avoid because they involve serious criminal activity, it *would* be possible to reduce the incidence of traffic stops. For example, police could use cameras more widely, i.e. to identify and ticket not only speeders and red-light violators, but also individuals with minor violations such as broken taillights. One creative solution for minor traffic offenses is for police to pull up behind an automobile, photograph the license plate and log a ticket to that license plate by computer.⁴⁶⁹ The key point here is that it makes sense to reduce the incidence of routine traffic

⁴⁶² *Id.* at 52–53.

⁴⁶³ See Ben Montgomery, *Why Cops Shoot*, TAMPA BAY TIMES (Apr. 5, 2017), <http://www.tampabay.com/projects/2017/investigations/florida-police-shootings/why-cops-shoot/> [<https://perma.cc/VN6S-8KJC>]. A study of shootings during traffic stops in Florida found that almost seventy percent of the people shot during traffic stops were unarmed. *Id.*

⁴⁶⁴ Jordan Blair Woods, *Policing, Danger Narratives, and Routine Traffic Stops*, 117 MICH. L. REV. 635, 637 (2019) (surveying police training literature emphasizing the danger of traffic stops).

⁴⁶⁵ *Id.* at 638 (internal footnotes omitted).

⁴⁶⁶ Dean Scoville, *The Hazards of Traffic Stops*, POLICE MAG. (Oct. 19, 2010), <http://www.policemag.com/channel/patrol/articles/2010/10/duty-dangers-traffic-stops.aspx> [<https://perma.cc/93GB-RBKE>]; see also John Wills, *Routine Traffic Stops*, OFFICER.COM (June 3, 2013), <https://www.officer.com/on-the-street/body-armor-protection/article/10952972/routine-traffic-stops> [<https://perma.cc/GVG5-X7MN>] (arguing that no traffic stop is “routine”).

⁴⁶⁷ Schwartz, *supra* note 243, at 547.

⁴⁶⁸ *Id.* at 548.

⁴⁶⁹ See Friedersdorf, *supra* note 460.

stops if they greatly increase the risk of police-involved shootings and pose risks to officer safety, without significantly enhancing road safety.⁴⁷⁰

It is worth noting that quite a number of the most notorious police-involved shootings that have occurred over the past fifteen years involved traffic stops for relatively trivial violations that ultimately escalated out of control, resulting in the deaths of Samuel DuBose,⁴⁷¹ Sandra Bland,⁴⁷² Walter Scott,⁴⁷³ Philando Castile,⁴⁷⁴ Michael Bell,⁴⁷⁵ and others.⁴⁷⁶ Reducing the incidence of traffic stops is a systems-oriented strategy that could save the lives of approximately one hundred civilians⁴⁷⁷ and ten police officers per year.⁴⁷⁸

⁴⁷⁰ Unfortunately, police departments might resist any effort to reduce traffic stops because officers routinely use such stops—and accompanying searches incident to arrest, automobile searches, or inventory searches—to investigate non-traffic related crimes. *See, e.g.*, Devallis Rutledge, *Investigative Traffic Stops*, POLICE MAG. (Sept. 1, 2005), <https://www.policemag.com/339426/investigative-traffic-stops> [<https://perma.cc/N4JK-Q84P>]. Recent Supreme Court cases have curtailed their power to do so, but not entirely eliminated it. *See generally* Barbara E. Armacost, *Arizona v. Gant: Does It Matter?*, 2009 SUP. CT. REV. 275, 276 (arguing that *Arizona v. Gant* curtailed, but did not eliminate, traffic stops). In addition, police agencies would have to give up the notorious “Ferguson strategy” of using traffic stops to load citizens with tickets and fines in order to raise money for the city. U.S. DEP’T OF JUSTICE, CIVIL RIGHTS DIV., INVESTIGATION OF THE FERGUSON POLICE DEPARTMENT 9–15 (Mar. 2015), https://www.justice.gov/sites/default/files/opa/press-releases/attachments/2015/03/04/ferguson_police_department_report.pdf [<https://perma.cc/Q84Z-AGZ6>]; *see also* Beth A. Colgan, *The Excessive Fines Clause: Challenging the Modern Debtors’ Prison*, 65 UCLA L. REV. 2, 22 (2018) (discussing the revenue generated from economic sanctions and Ferguson County’s use of fines and fees as a major component of their municipal budget). That fewer traffic stops would curtail these two strategies would be an important win in my view.

⁴⁷¹ Ryan Felton, *Samuel DuBose Shooting Was Due to ‘Critical Errors in Judgment’*, *Report Finds*, GUARDIAN (Sept. 11, 2015), <https://www.theguardian.com/us-news/2015/sep/11/sam-dubose-shooting-independent-report> [<https://perma.cc/XN6E-3B9Q>].

⁴⁷² Laughland, *supra* note 7.

⁴⁷³ Michael S. Schmidt & Matt Apuzzo, *South Carolina Officer Is Charged with Murder of Walter Scott*, N.Y. TIMES (Apr. 7, 2015), <https://www.nytimes.com/2015/04/08/us/south-carolina-officer-is-charged-with-murder-in-black-mans-death.html> [<https://perma.cc/8PZB-99L8>].

⁴⁷⁴ Nelson, *supra* note 8.

⁴⁷⁵ Kennedy, *supra* note 210.

⁴⁷⁶ *See supra* notes 462–63 and accompanying text.

⁴⁷⁷ In the first six months of 2015, approximately 500 police officers were killed during policing activities, and nine percent of these deaths occurred during traffic stops, for a total of approximately 100 per year. *See* ZIMRING, *supra* note 249, at 51–53. For this data, Zimring relies on media reports linked to the *Guardian*’s descriptions of police killings reviewed and coded by researcher Colin Christensen. *See id.* app. at 259–85; *see also* *The Counted*, *supra* note 454 (discussing findings on the use of deadly force by police).

⁴⁷⁸ Between 2005 and 2014, 18.4% of the 505 felonious deaths of police officers resulted from traffic pursuits or stops, an average of nine per year. Michelle Ye Hee Lee, *Are Most Job-Related Deaths of Police Caused by Traffic Accidents?*, WASH. POST (July 12, 2016), https://www.washingtonpost.com/news/fact-checker/wp/2016/07/12/are-most-job-related-deaths-of-police-caused-by-traffic-incidents/?utm_term=.766ad0a9c857 [on

A second important observation about the circumstances of deadly force is that the kind of threat that provoked deadly force was very different when the officer was alone.⁴⁷⁹ Single officers were more likely to use deadly force against the same threat than multiple officers.⁴⁸⁰ In addition, single officers who kill were at least *nine times* as likely to kill an assailant who had no weapon than officers in pairs or more.⁴⁸¹ Zimring's explanation is that "[a]s a matter of strategy as well as psychology, police officers who confront what they regard as danger are much more vulnerable when operating without the assistance and counsel of another officer."⁴⁸² This vulnerability might lead officers to take more precipitous and aggressive actions, as it causes stress that can increase the incidence of miscalculations, misjudgments, and errors.

An obvious systems-oriented strategy is to make sure, as much as possible, that police officers act in pairs rather than alone. In addition, "a good tactical response to potential danger when it is operationally possible is to call for more police."⁴⁸³ Zimring recommends a clear rule: "When police are in constant communication with dispatchers and their departments, a rule that prohibits shootings in favor of calling for assistance makes sense unless the absence of gunfire produces a true emergency where the officer or an innocent citizen will be in mortal danger."⁴⁸⁴ This recommendation could call into question the broad scope and specific terms of active shooter policies.⁴⁸⁵

A third observation that bears notice is that in approximately thirty-three percent of the police shootings—over 150 deaths per year—the person who was killed by gunfire had or was threatening to use only a knife, club, or other weapon that may have had little or no potential to kill the police officer.⁴⁸⁶ Virtually all of the attacks that kill police officers—97.5%—are with firearms.⁴⁸⁷ FBI data shows that less than one percent of police deaths result

file with *Ohio State Law Journal*]. Between 2014 and 2018, a total of twenty-four police officers were killed in traffic stops or pursuits, for an average of five per year. FED. BUREAU OF INVESTIGATION, DEP'T OF JUSTICE, 2018 LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2 (2019), <https://ucr.fbi.gov/leoka/2018/tables/table-24.xls> [<https://perma.cc/N3B2-AJV8>].

⁴⁷⁹ ZIMRING, *supra* note 249, at 59–61.

⁴⁸⁰ *Id.* at 60–61.

⁴⁸¹ *Id.* at 61.

⁴⁸² *Id.* at 60.

⁴⁸³ *Id.*

⁴⁸⁴ *Id.* at 229.

⁴⁸⁵ See *supra* notes 356–61 and accompanying text.

⁴⁸⁶ See ZIMRING, *supra* note 249, at 57. This is an empirical claim, which Zimring supports with statistical evidence from websites and studies that track on-duty police officer fatalities from various causes. *Id.* For example, only two police officers were killed with knives or other cutting instruments in the United States between 2008–2013. *Id.* at 97. Significantly these deaths resulted at close range by assailants who had hidden knives. *Id.*

⁴⁸⁷ *Id.* at 96.

from knife wounds.⁴⁸⁸ In addition, British and German case studies show that protocols that use other than deadly force against knives and blunt instruments did not increase the risk to the lives of police in those countries.⁴⁸⁹ Zimring argues that the so-called “21-foot rule”—which advises deadly force against a knife-wielding attacker who comes within twenty-one feet—lacks empirical support.⁴⁹⁰ In light of existing data, Zimring proposes a blanket rule prohibiting deadly force in response to knives and blunt instruments with very few exceptions.⁴⁹¹

A fourth observation about the circumstances of deadly force is that about ten percent of all fatal shootings by police officers in the United States—or about 100 per year—take place where the potential assailant had no weapon at all.⁴⁹² The question in these cases is whether police safety would be compromised by holding their fire in cases in which no weapon is observed. In its *Guiding Principles On Use of Deadly Force*, the Police Executive Research Forum concluded, based on international police studies, that non-shooting responses to no-weapon situations do not threaten police lives and safety: “Unless there is credible and specific intelligence that a suspect is armed with a deadly weapon, a ‘shoot first’ policy seems premature and should be prohibited.”⁴⁹³

A fifth observation concerns the extent to which a deadly attack was ongoing and the total amount of deadly force used. A major factor contributing to civilian fatalities is the total number of gunshot wounds inflicted by police.⁴⁹⁴ As neither official governmental reports nor the *Guardian* or *Washington Post* websites have kept comprehensive data on this issue, Zimring looked to a study of fatal and nonfatal shootings by the Chicago Police Department from 2007–2013.⁴⁹⁵ He found that the death rate for multiple-wound shootings (fifty-one percent) was more than twice the death rate for single-wound shootings (twenty-one percent), and that three-quarters of the civilian fatalities involved more than

⁴⁸⁸ *Id.* at 95, 229. In order to have complete information about the risk to police officers, however, we need additional data on the incidence and seriousness of nonfatal knife attacks, and the types of weapons and types of attacks that produce serious injuries. *Id.* at 163–64.

⁴⁸⁹ *See id.* at 80, 83–84, 90.

⁴⁹⁰ *Id.* at 100–01. The “21-foot rule” was apparently formulated by Lt. John Tueller, a firearms instructor with the Salt Lake City Police Department, who was said to have written that “it [is] entirely possible for a suspect armed with an edged weapon to fatally engage an officer armed with a handgun within a distance of 21 feet.” *Id.* at 100. The rule, which encourages officers to start shooting when knife-wielding adversaries are within twenty-one feet, has spread throughout the law enforcement community. *Id.*

⁴⁹¹ *Id.* at 229.

⁴⁹² ZIMRING, *supra* note 249, at 57. (This excludes situations where police saw something that turned out not to be a gun or weapon). *Id.*

⁴⁹³ *Id.* at 228 (citing Wexler, *supra* note 245, at 5–8).

⁴⁹⁴ *Id.* at 64.

⁴⁹⁵ *Id.* at 65.

one police-inflicted wound.⁴⁹⁶ The study demonstrates that police infliction of multiple wounds is a major risk in civilian deaths. According to Zimring, however, few if any departments have done research on the question of whether multiple shots are necessary to make police safer or made serious efforts to control multiple-shot continuations of shootings that were initially justified.⁴⁹⁷

In light of the paucity of data to elucidate the possible effects of restrictions on continued shots, Zimring recommends restrictions in only three limited scenarios.⁴⁹⁸ But he calls the lack of reliable and detailed information on this and other issues concerning how weapons have been used in confrontation between civilians and police officers a “mind-boggling feature of the status quo in American police killings.”⁴⁹⁹ This absence of information “risks the lives not only of the victims of police shootings but also of police.”⁵⁰⁰

In addition to Zimring, other police scholars have identified additional specific patterns in police shootings that call out for systems-oriented considerations. For example, Lawrence Sherman, who analyzed data from the *Washington Post*'s website, “Fatal Force,” in 2015, noticed that a majority of the shootings (fifty-one percent) in his seven-month sample occurred in communities of fewer than 50,000 people, and almost seventy percent occurred outside of major cities of 250,000 or more.⁵⁰¹ In addition, the rate of police-involved shootings per one-hundred homicides was six times greater in the smallest of communities, those with less than 10,000 people, as compared to the largest cities.⁵⁰² Sherman argues that studies identifying different rates of shootings in different geographical and social contexts foregrounds “organizational and environmental differences in the potential causal mechanisms or their policy applications for reducing shootings.”⁵⁰³

Joanna Schwartz has pointed to evidence suggesting that police overtime and “moonlighting” likely contribute to violence and error resulting from officer

⁴⁹⁶ See *id.* at 67–69. More than seventy-four percent of individuals who are wounded five or more times by police shootings die of their wounds. *Id.* at 69.

⁴⁹⁷ ZIMRING, *supra* note 249, at 231.

⁴⁹⁸ Zimring describes three settings where he believes available data justifies restrictions on continued shots: first, when an adversary may have a gun but has already been wounded by police fire; second, where the adversary has not fired shots and is now on the ground; and third, where the adversary is fleeing from a confrontation with police. In the first two scenarios, Zimring doubts there is a realistic danger that a non-shooting suspect will begin shooting if the officers stop their shots. In the third category, Zimring posits that the firing may be “motivated by apprehending the suspect or avoiding the frustration of defeat by escape” rather than reasonable risk of police being shot. *Id.* at 231–32.

⁴⁹⁹ *Id.* at 232.

⁵⁰⁰ *Id.*

⁵⁰¹ Sherman, *supra* note 89, at 429 (citing Lawrence W. Sherman, Small is Dangerous: Community Size and Police Shooting Deaths, Presented at The American Society of Criminology 71st Annual Meeting (Nov. 18, 2015)).

⁵⁰² *Id.* at 429–30.

⁵⁰³ *Id.* at 430.

fatigue.⁵⁰⁴ She cites studies demonstrating “that fatigued officers ‘were significantly more likely to associate African-Americans with weapons,’ received more complaints, were more likely to be involved in use of force incidents, and were more likely to commit ethics violations.”⁵⁰⁵ A systems-oriented fix for this problem would be to limit the amount of time officers could work overtime, and limit their freedom to take on additional work.

Schwartz has also identified contexts in which police agencies might adopt the use of “checklists,” a systems-oriented strategy that has been used with great success in commercial aviation and medicine.⁵⁰⁶ Checklists can be effective for educating or reminding actors of important steps that promote safety. Perhaps counterintuitively, carefully formulated checklists can improve safety even in recurring emergency or stressful circumstances by focusing the actor’s attention and laying out a logical sequence of considerations and actions where time is of the essence.⁵⁰⁷ In the policing context, checklists are being used in an attempt to reduce the disproportionately high incidence of shootings that occur during police interaction with individuals who have a history of mental illness.⁵⁰⁸ Two police agencies have begun field-testing a checklist (“screening form”) for identifying people with severe mental illness who may pose a danger to themselves or others.⁵⁰⁹ An important goal of the program is to collect data that can be analyzed and used to “establish a connection between a particular

⁵⁰⁴ Schwartz, *supra* note 243, at 550 (first citing KAREN L. AMENDOLA ET AL., POLICE FOUND., THE SHIFT LENGTH EXPERIMENT: WHAT WE KNOW ABOUT 8-, 10-, AND 12-HOUR SHIFTS IN POLICING 35–36 (2011); and then citing Seth W. Stoughton, *Moonlighting: The Private Employment of Off-Duty Officers*, 2017 U. ILL. L. REV. 1847, 1882–83 (2017); and then citing Bryan Vila, *Sleep Deprivation: What Does It Mean For Public Safety Officers?*, 262 NAT’L INST. JUST. J. 26, 26, 29 (2009)).

⁵⁰⁵ *Id.* (quoting Mike Maciag, *The Alarming Consequences of Police Working Overtime*, GOVERNING STATES & LOCALITIES (Oct. 2017), <https://www.governing.com/topics/public-justice-safety/gov-police-officers-overworked-cops.html> [<https://perma.cc/BVT7-XWQH>]) (citing U.S. DEP’T OF JUSTICE, CIVIL RIGHTS DIV., INVESTIGATION OF THE NEW ORLEANS POLICE DEPARTMENT 72 (Mar. 2011), https://www.justice.gov/sites/default/files/crt/legacy/2011/03/17/nopd_report.pdf [<https://perma.cc/B9SB-A8VR>])).

⁵⁰⁶ *Id.* at 550–51.

⁵⁰⁷ See generally GAWANDE, *supra* note 31 (discussing the use and effectiveness of checklists in complicated, complex, and emergency situations in medical, aviation, and other high-risk scenarios).

⁵⁰⁸ Schwartz, *supra* note 243, at 550–51 (citing Gary Howell, *The Dark Frontier: The Violent and Often Tragic Point of Contact Between Law Enforcement and the Mentally Ill*, 17 SCHOLAR 343, 367 (2015)). It has been estimated that approximately seven percent of police-civilian interactions in the United States involved persons with a mental illness. Christian Mason et al., *Responding to Persons with Mental Illness: Can Screening Checklists Aid Law Enforcement?*, FBI LAW ENFORCEMENT BULL. (Feb. 4, 2014), <https://leb.fbi.gov/articles/featured-articles/responding-to-persons-with-mental-illness-can-screening-checklists-aid-law-enforcement> [<https://perma.cc/J8PD-H3W9>].

⁵⁰⁹ *New Checklists Being Tested to Help Cops Respond to People with Mental Illness*, POLICEONE.COM (Dec. 1, 2011), <https://www.policeone.com/emotionally-disturbed-persons-edp/articles/4777754-New-checklist-being-tested-to-help-cops-respond-to-people-with-mental-illness/> [<https://perma.cc/ZNL4-DNBD>].

combination of observable characteristics and a high risk of potentially dangerous behavior.”⁵¹⁰ The final step would be to incorporate these insights into police training to enhance the safety of police officers as well as mentally ill individuals.

C. Challenges to Systems-Oriented Review: What Will It Take?

In thinking about the application of sentinel event/systems-oriented review in the policing context it is useful to consider four circumstances that have been essential to the success of such review in aviation and medicine.

First, in both contexts sentinel event review of certain kinds of incidents is mandatory, required by the NTSB in aviation and strongly encouraged by the Joint Commission in medicine.⁵¹¹ *Second*, in both contexts sentinel event review investigations enjoy some degree of protection from discovery in civil (and criminal) cases.⁵¹² *Third*, both contexts have organizations that can receive information from individual investigations, aggregate that information with investigative information from other similar events, and identify common causes.⁵¹³ *Fourth*, both contexts have an official, institutional mechanism for conveying the results of sentinel event investigations of single events, or the safety recommendations they identify, back to their members, which promotes best practices across institutions.⁵¹⁴

⁵¹⁰ *Id.*; see also Mason et al., *supra* note 508 (recommending that law enforcement agencies adopt a checklist similar to the brief-jail-mental-health-screening (BJMHS) checklist that many local jails have adopted to screen arriving inmates along with Crisis Intervention Team (CIT) training).

⁵¹¹ See *Report an Aircraft Accident to the NTSB*, NAT'L TRANSP. SAFETY BOARD, <https://www.nts.gov/Pages/Report.aspx> [<https://perma.cc/3C3L-LK7W>]; JOINT COMM'N, SENTINEL EVENTS (SE) 6 (Jan. 2016), https://www.jointcommission.org/assets/1/6/CAMH_24_SE_all_CURRENT.pdf [<https://perma.cc/ZFK9-HT6E>].

⁵¹² See JOINT COMM'N, *supra* note 511, at 13; *Confidentiality and Incentives to Report*, AVIATION SAFETY REPORTING SYS., <https://asrs.arc.nasa.gov/overview/confidentiality.html> [<https://perma.cc/X5KG-MSBZ>]. See generally ALEXANDER T. WELLS & CLARENCE C. RODRIGUES, COMMERCIAL AVIATION SAFETY 87–88 (4th ed. 2003) (describing the Aviation Safety Reporting System, a voluntary, confidential reporting system designed to gather the maximum amount of information without discouraging the reporter).

⁵¹³ See JOINT COMM'N, *supra* note 511, at 12; WELLS & RODRIGUES, *supra* note 512, at 52–68 (describing the role of the National Transportation and Safety Board in investigating airline accidents, creating accident reports, making safety recommendations, and publicizing reports and safety information); *Program Briefing*, AVIATION SAFETY REPORTING SYS., <https://asrs.arc.nasa.gov/overview/summary.html> [<https://perma.cc/FKT7-GMBQ>] (describing role of ASRS in “collect[ing], analyz[ing] and respond[ing] to voluntarily submitted aviation safety incident reports in order to lessen the likelihood of aviation accidents”).

⁵¹⁴ See JOINT COMM'N, *supra* note 511, at 14; WELLS & RODRIGUES, *supra* note 512, at 87 (explaining that the Aviation Safety Reporting System analyzes data and publicizes reports of its findings); *Program Outputs*, AVIATION SAFETY REPORTING SYS., <https://asrs.arc.nasa.gov/overview/outputs.html> [<https://perma.cc/2NT6-M75V>] (ASRS

These features pose notable—but not insurmountable—challenges for the potential success of systems-oriented review and prevention in policing. Unlike aviation and medicine, policing is highly decentralized. Police agencies lack an authoritative, institutional mechanism for mandating investigations and for prescribing the kind of review designed to uncover systems-oriented solutions. Instead, police departments have their own localized mechanisms such as internal affairs review and civilian oversight board review for reviewing incidents that occur in their own jurisdiction.⁵¹⁵ Unlike airlines and hospitals, police departments are not required to collect the kind of data necessary for identifying patterns and systems vulnerabilities.⁵¹⁶ Without such data, police agencies cannot make evidence-based decisions designed to reduce the risks of harm-causing conduct by police.⁵¹⁷

In addition, policing has no widely accepted, centralized mechanism for collecting, receiving, and analyzing crucial information derived from sentinel event/systems-oriented reviews.⁵¹⁸ This lack of centralization severely limits the

promotes safety through: alerting messages relaying safety information to individuals in a position of authority; distributing a monthly newsletter to pilots, air traffic controllers, and others; publishing *ASRS Directline* containing ASRS reports to operational managers, safety officers, training organizations, and publications departments; taking database search requests on safety issues; assists in aviation safety rulemaking; and conducts and publishes research studies on specific issues and problems in aviation safety).

⁵¹⁵ See Hollway et al., *supra* note 28, at 892–95 (describing mechanisms for review by a department’s homicide investigators, internal affairs department or civilian review board). The U.S. Department of Justice has created a certain level of centralization by mandating specific police reforms pursuant to consent decrees with some troubled police agencies under 42 U.S.C. § 14141. See Rachel Harmon, *Promoting Civil Rights through Proactive Policing Reform*, 62 STAN. L. REV. 1, 3 (2009); see also 32 U.S.C. § 12601 (2017) (formerly cited as 42 U.S.C. § 14141). Many of these reforms have been mandated in multiple departments and some have become accepted as best practices. See U.S. DEP’T. OF JUSTICE, CIVIL RIGHTS DIV., THE CIVIL RIGHTS DIVISION’S PATTERN AND PRACTICE POLICE REFORM WORK: 1994–PRESENT 3 (Jan. 2017), <https://www.justice.gov/crt/file/922421/download> [<https://perma.cc/XMJ5-TWZY>]. But this mechanism is seriously limited by resource constraints on the DOJ’s ability to bring suit. See Harmon, *supra* note 515, at 3. Professor Harmon has recommended ways that DOJ could use § 14141 proactively to induce police reform. See *id.* at 22.

⁵¹⁶ See Schwartz, *supra* note 243, at 558.

⁵¹⁷ See *id.* at 559.

⁵¹⁸ See *id.* at 558. The Police Executive Research Forum (PERF), an independent research organization, conducts important research resulting in widely-read recommendations on best practices. See POLICE EXEC. RESEARCH FORUM, *supra* note 375, at 121. These recommendations are often debated and sometimes rejected, but many of PERF’s recommendations end up influencing policies adopted by police agencies around the country. See generally *id.* at 33–73 (“The policies, training, tactics, and recommendations for equipment and information exchange that are detailed in this chapter amount to significant changes in a police agency’s operations and culture.”). Unlike the Joint Commission in medicine, however, PERF is not an accrediting agency that can mandate best practices, and unlike the NTSB in aviation, PERF cannot require review of shooting or other harm-causing incidents by police. See *Facts About Hospital Accreditation*, JOINT COMMISSION (Sept. 12,

ability to identify repeated errors and patterns across harm-causing incidents like police shootings. It also limits the potential for disseminating crucial information from lessons learned. Evidence from other fields has shown that in order for learning to result from sentinel event review, there must be an intentional plan to disseminate the findings of the investigation and to ensure that the recommendations are “salient and actionable.”⁵¹⁹

Centralization of sentinel event review in aviation also means that reviews are done by an on-call, multidisciplinary team that includes not only subject matter experts (pilots, flight attendants, mechanics) but also experts in risk management.⁵²⁰ Just as NTSB investigation enables a kind of review that would be impossible for individual airlines, police agencies would benefit from the availability of centralized, multidisciplinary resources for expert investigation and data gathering. Importantly, these external reviews would be designed not to blame individual officers, but to identify system vulnerabilities and systems-oriented solutions.

Sentinel event review by a team that includes risk management experts also ensures that recommendations will be systems-oriented and effective. Recommendations by local teams without such expertise are often what systems analysts would call “weak,” meaning solutions such as reminders, additional training, or policy rewrites.⁵²¹ These kinds of fixes may simply result in risk migration, where the mitigation of one risk simply results in a new risk.⁵²² In addition, they do not address latent causes, such as poorly designed technology or defective operational systems, systems problems that predispose to human error.⁵²³ Involving human factor experts increases the likelihood of stronger, more effective solutions.

The challenges to sentinel event review in policing are real but by no means unsurmountable, and the rewards of such review are enormous. First and foremost, systems review holds the potential to reduce the number of police shootings and begin to chip away at the layers of police-citizen animosity repeatedly stoked by civilian deaths at the hands of police. This would be infinitely good, not only for civilians but for police officers, many of whom labor faithfully in difficult circumstances and bear the brunt of public anger and

2018), https://www.jointcommission.org/facts_about_hospital_accreditation/ [<https://perma.cc/J68L-8J2U>]; *Office of Aviation Safety*, NAT’L TRANSP. SAFETY BOARD, https://www.nts.gov/about/organization/AS/Pages/office_as.aspx [<https://perma.cc/8FPV-D9JD>].

⁵¹⁹Peerally et al., *supra* note 124, at 418 (describing why sentinel event review in medicine has been less successful than sentinel event review in aviation).

⁵²⁰*See The Investigative Process*, *supra* note 135. In contrast to aviation accident investigators who comprise a team of on-call investigative experts (including experts in systems-thinking and human factors), sentinel event review in hospitals is conducted by local, clinical teams. *See id.*; Peerally et al., *supra* note 124, at 418. Some experts claim that this difference has made sentinel event review in medicine much less effective. *See id.*

⁵²¹*See* Peerally et al., *supra* note 124, at 418.

⁵²²*Id.*

⁵²³*Id.*

suspicion. In addition, focusing on prevention has great potential to increase police officer safety. According to Professor Zimring, there have been no rigorous, scientific, systems-oriented evaluations of the strategies and tactics that are designed to protect police.⁵²⁴ These benefits make systems-oriented review worth fighting for.

VI. CONCLUSION

Despite its significant promise, systems-oriented review will likely face resistance. Some of the strongest resistance may come from police departments themselves and from the communities that are most affected by police shootings.

Police departments are notoriously defensive toward outside investigations of police shootings and other incidents.⁵²⁵ Systems solutions may be suspect, especially if they are viewed as being imposed by authorities outside of the police department without taking account of the realities on the ground.⁵²⁶ Police leaders might be slow to let go of deeply held, but unsupported assumptions about risks to their safety, for example the belief that ordinary traffic stops pose a very high risk of officers being shot.⁵²⁷ They are also likely to resist bright-line rules against vigorously defended practices—such as the use of lethal force against suspects in fleeing vehicles or suspects within twenty-one feet brandishing a knife—which increase the risk of unnecessary shootings, i.e., shootings not required to protect police or public safety.⁵²⁸ Police may also resist other systems-oriented reforms that threaten police practices offering collateral benefits aside from safety. For example, a move to reduce traffic stops would undermine policing's widespread practice of using such pretextual stops to investigate unrelated crimes.⁵²⁹ Getting police departments on board for systemic changes will pose significant challenges.

In a surprising way, though, systems review actually holds promise for responding to some of law enforcement's own most vehement criticisms of civil actions and criminal prosecutions against police officers. The law enforcement community complains that legal actions make the officer who pulled the trigger a "scapegoat" for merely doing his job. In addition, they assert that such actions are never about one shooting; rather, legal actions blame one officer for what communities deem a long history of police transgressions. It turns out that systems review may actually address these criticisms in important ways.

The goal of systems review is precisely to get beyond the single-minded focus on blaming the shooter in order to identify workplace and organizational causes that lie behind the last human causer. By focusing on systemic causes,

⁵²⁴ ZIMRING, *supra* note 249, at 97–98.

⁵²⁵ See Schwartz, *supra* note 243, at 559–60.

⁵²⁶ *Id.*

⁵²⁷ See *supra* notes 463–70 and accompanying text.

⁵²⁸ See *supra* notes 454, 486–91 and accompanying text.

⁵²⁹ See *supra* note 470 and accompanying text.

systems-oriented review has the effect of spreading the blame so that individual officers are *not* the only ones held responsible for harm-causing incidents and are not left to bear alone the professional and personal consequences of having taken a human life. By reducing the likelihood that sharp end actors will make mistakes—including reasonable mistakes—systems solutions should ultimately reduce the likelihood that officers will be blamed for just “doing their job.” Moreover, data-driven improvements in police use of firearms will ultimately increase officer safety. In short, if articulated clearly and done right, systems review should prove appealing to the policing community.

Another source of resistance to systems review will likely come from the communities that have experienced the most harm from police shootings. Public resistance takes us back to where we started: when there is a police shooting, families and communities understandably look for someone—a human being—to blame. The need to hold someone accountable is deeply embedded in human nature. For this purpose, systems review seems inadequate. After all, it looks for causes that lie behind the immediate *human* causer to identify underlying systems vulnerabilities that contributed to the harm-causing action. Solutions are forward-looking and preventative, rather than backward-looking and blaming. While systems analysis need not (and should not) replace some form of accountability review, loosening the grip on blaming is likely to go down hard in communities plagued by police-involved shootings.

The best response to the anticipated public reaction against systems-oriented review is this: the vast majority of police-involved shootings are ultimately deemed “justified” or “reasonable” by police investigators and courts, and that is the end of the investigation. Most police-involved shootings do not result in criminal charges and even fewer in convictions. This is true even in the many cases in which the shooting was factually *unnecessary* under the circumstances (i.e., the suspect was unarmed or the officer’s safety was not actually at risk). As much as we might want to think otherwise, under our current system there is almost no “accountability” of the sort communities are crying out for. By adopting systems-oriented review, virtually *nothing* will be lost, and *much* will be gained.

I am *not* arguing that police officers should escape responsibility when they do misbehave. But our current relentless focus on accountability—while an understandable human reaction—has become the enemy of prevention in the very communities that need it most.