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Helen Stamp

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Helen Stamp[*]

"We can afford to make mistakes. We can't afford to slow down."

Email from Dara Khosrowshahi, CEO Uber to C-suite, March 19, 2018, one day after the fatal collision that killed Elaine Herzberg.

INTRODUCTION

On the evening of March 18, 2018, Rafaela Vasquez had just started her shift as a 'vehicle operator'[1] in an Uber [2] autonomous vehicle.[3]

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[1] The term 'vehicle operator' is used by Uber before the collision occurs. *See*, *e.g.*, Uber Job Announcement in NAT'L TRANSP. SAFETY BD. OPERATIONS FACTORS GRP. CHAIRMAN'S FACTUAL REPORT, TEMPE, AZ. HWY18MH010 (report undated, docket information released to public on Nov. 5, 2019), https://data.ntsb.gov/Docket/?NTSBNumber=HWY18MH010. The National Transportation Safety Board notes in this report that Uber changed the term it uses for the drivers testing its autonomous vehicles to 'mission specialists' after the collision occurs. Uber also refers to its drivers as 'safety drivers' in its submission to the National Transportation Safety Board after the collision. *See* National Transportation Safety Board, *Collision Between Vehicle Controlled by Developmental Automated Driving System and Pedestrian, Tempe, Arizona, March 18, 2018* (2018), https://www.ntsb.gov/investigations/accidentreports/reports/har1903.pdf.

[2] Uber A.T.G. (Advanced Technologies Group) was a subsidiary of Uber which focused on the development of self-driving technology, and which was operating the self-driving testing program in Arizona in 2018. Uber A.T.G. was acquired by Aurora Innovation in December 2020. *See* Krystal Hu et al., *Uber Sells ATG Self-Driving Business to Aurora at $4 Billion*, REUTERS (Dec. 7, 2020, 4:13 PM), https://www.reuters.com/article/us-uber-atg-idUSKBN28H2RX. The author will use the general term Uber when referring to Uber A.T.G.

[3] The terms 'self-driving', 'automated', and 'autonomous' are used interchangeably in this paper, however, these terms all relate to the degree of driving autonomy a vehicle has. According to the Society of Automotive Engineers (SAE) Levels of Driving Automation, a vehicle can have self-driving capabilities at SAE Levels 0-3 but is not

The vehicle was driving test loops on public roads in Tempe, an inner suburb of the city of Phoenix, Arizona.[4] Elaine Herzberg was walking her bicycle across a road when she was struck by the Uber vehicle and died of her injuries later that evening. Within ten days of the collision, Uber completed a financial settlement with the Herzberg family.[5] Two months later, Uber's autonomous vehicle program left the jurisdiction of Arizona. Uber continued this program in Pittsburgh and San Francisco until selling its autonomous vehicle research unit to Aurora Innovations in December 2020.[6]

In August 2020, the Maricopa County Attorney's Office (MCAO), which has prosecutorial jurisdiction over criminal events occurring in Phoenix, charged Vasquez with negligent homicide[7] for the death of Elaine Herzberg.[8] An earlier review, in March 2019, by the neighbouring Yavapai County Attorney's Office (YCAO), cleared Uber of any criminal responsibility for the fatal collision.[9]

The burst of media and academic interest triggered by this fatal collision[10] has now dulled. The excited commentary about where liability

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autonomous until operating at SAE Level 4 or 5. *See SAE Levels of Driving Automation Refined for Clarity and International Audience*, SAE INTERNATIONAL (May 3, 2021), https://www.sae.org/blog/sae-j3016-update. The Uber vehicle involved in the collision on March 18, 2018, was considered to be operating at SAE Level 4 automation. *See also* National Transportation Safety Board, *supra* note 1.

[4] *See* National Transportation Safety Board, *supra* note 1 for details of the testing program and routes used by Uber.

[5] *See* Bernie Woodall, *Uber Avoids Legal Battle with Family of Autonomous Vehicle Victim*, REUTERS (Mar. 29, 2018, 10:35 PM), https://www.reuters.com/article/us-autos-selfdriving-uber-settlement/uber-reaches-settlement-with-family-of-autonomous-vehicle-victim-idUSKBN1H5092.

[6] *See* Edward Helmore, *Uber Shuts Down Self-Driving Operation After Crash*, THE GUARDIAN (May 23, 2018, 3:38 PM), https://www.theguardian.com/technology/2018/may/23/uber-shuts-down-self-driving-operation-in-arizona-two-months-after-fatal-crash; Andrew J. Hawkins, *Uber's Fraught and Deadly Pursuit of Self-Driving Cars is Over*, THE VERGE (Dec. 7, 2020, 4:05 PM), https://www.theverge.com/2020/12/7/22158745/uber-selling-autonomous-vehicle-business-aurora-innovation.

[7] Negligent Homicide; Classification, ARIZ. REV. STAT. § 13-1102. Defines negligent homicide in these terms: 'A person commits negligent homicide if with criminal negligence the person causes the death of another person, including an unborn child.'

[8] State of Arizona v. Vasquez, No. 785 GJ 251 (Aug. 27, 2020) (Case No. CR2020 - 001853 -001). The author has obtained copies of relevant court documents from these court proceedings through Public Records Requests made to the Clerk of the Superior Court, Maricopa County, Arizona.

[9] Letter from Ms. Sheila Polk, Yavapai County Attorney to Mr. Bill Montgomery, Maricopa County Attorney (Mar. 4, 2019) (on file with author).

[10] *See* Madeline Roe, *Who's Driving That Car: An Analysis of Regulatory and Potential Liability Frameworks for Driverless Cars*, 60 B.C. L. REV. 317, 318 (2019); Ken Oliphant, *Liability for Road Accidents Caused by Driverless Cars*, SING. COMPAR. L. REV. 190 (2019); Madeleine Clare Elish, *Moral Crumple Zones: Cautionary Tales*

falls when a person and machine share driving responsibilities has fatigued. More recently, the true consequence of accountability for this collision has been realised, with the criminal proceedings against Vasquez concluding with the parties agreeing to settle the matter. On July 28, 2023, Vasquez pleaded guilty to the reduced charge of 'endangerment'[11] and was sentenced to three years' probation.

As the only party to be held accountable for this collision, the conclusion of these criminal proceedings against Vasquez now presents a liability crossroads for how society is prepared to attribute criminal responsibility for harms caused by autonomous digital systems and by the corporations who develop this technology. These proceedings can either be accepted as the inevitable result of tragic circumstances or be questioned further to understand better the complexities of who was accountable for what happened. Taking the latter course, not only are there lessons to be learnt about applying laws to autonomous digital systems; there are also lessons about the power of Big Tech[12] and other large corporations and the influence such corporations can have over State agencies charged with regulating these companies.

In this paper, I will explore the influence Uber had over the Tempe Police Department, as police investigated the fatal collision, and over the offices of the Maricopa and Yavapai County Attorneys as prosecutorial

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in Human-Robot Interaction, 5 ENGAGING SCI., TECH., & SOC'Y. 40, 52 (2019); Antonios E. Kouroutakis, *Autonomous Vehicles: Regulatory Challenges and the Response from Germany and UK*, 46 MITCHELL HAMLINE L. REV. 1103 (2020); Conrad A. Buchler Jr., *Where We're Going, We Don't Need Drivers*, 19 LOY. J. PUB. INT. L. 1 (2017); Alexandra DeArman, *The Wild, Wild West: A Case Study of Self-Driving Vehicle Testing in Arizona*, 61 ARIZ. L. REV. 983, 994 (2019); David Bissell, *Automation Interrupted: How Autonomous Vehicle Accidents Transform the Material Politics of Automation*, 65 POL. GEO. 57, 57 (2018).

[11] Endangerment; Classification, ARIZ. REV. STAT. § 13-1201. Defines endangerment in these terms: 'A person commits endangerment by recklessly endangering another person with a substantial risk of imminent death or physical injury.'

[12] 'Big Tech' refers to the largest and most influential technology companies. Big Tech companies include Google, Amazon, Facebook, Uber, and Apple. Uber is labelled as Big Tech due to its popular influence and disruption to the taxi/ride share industry. *See generally* BRAD STONE, THE UPSTARTS: UBER, AIRBNB AND THE BATTLE FOR THE NEW SILICON VALLEY (Little, Brown and Company 2018); J. Powles, *The Corporate Culpability of Big Tech*, THE CULPABLE CORPORATE MIND 97 (E Bant ed., 2023); Enrique Dans, *There are Tech Companies and Then There are Uber-Tech Companies*, FORBES (Apr. 12, 2019), https://www.forbes.com/sites/enriquedans/2019/04/12/there-are-tech-companies-and-then-there-are-uber-tech-companies/?sh=729f61ce4be6; Linda Rosencrance, *Big Tech*, TECHTARGET (updated March 2021), https://www.techtarget.com/whatis/definition/Big-Tech; Jasper Jolly, *Is Big Tech Now Just Too Big to Stomach?* THE GUARDIAN (Feb. 6, 2021), https://www.theguardian.com/business/2021/feb/06/is-big-tech-now-just-too-big-to-stomach.

decisions were made, as a case study in regulatory capture. This paper will begin by considering how innovative technologies and corporations developing them impact the traditional concept of regulatory capture. This paper will then introduce the concept of secondary agency capture and explain how the traditional model of agency capture needs to evolve in order to accommodate secondary agency capture. The paper will focus on the particular features of Big Tech that are increasing the risks of capture and the regulatory agencies most likely to be vulnerable to it. The Tempe Police investigation into the death of Elaine Herzberg will then be used as a case study to demonstrate this.

The paper will also explore the findings of the National Transportation Safety Board (NTSB) to demonstrate the narrow focus taken by Tempe Police and other state agencies toward accountability for the crash. The paper will conclude with a discussion and recommendations.

I. REGULATORY CAPTURE AND INNOVATIVE TECHNOLOGIES

A. An Overview of Regulatory Capture Scholarship

The concept of regulatory capture has cast a wide net over academic scholarship. The troubling notion that agencies responsible for regulating industry can be influenced by the very entities they are seeking to regulate has been examined by scholars from different disciplines for over seventy years.[13] This established body of scholarship has considered the causes of regulatory capture and the difficulties in detecting and preventing capture.[14] This scholarship considers both *statutory* capture – where industry seeks to influence and lobby the process of law-making

[13] The study of regulatory capture also includes statutory capture where industry seeks to influence the drafting of regulations and statutes, however, this paper will only consider agency capture and the influence of industry over State agencies carrying out regulatory duties. *See generally* E. PENDLETON HERRING, PUBLIC ADMINISTRATION AND THE PUBLIC INTEREST (McGraw-Hill 1936); AVERY LEISERSON, ADMINISTRATIVE REGULATION (The University of Chicago Press 1942); JAMES W. FESLER, THE INDEPENDENCE OF STATE REGULATORY AGENCIES (1942); MARVER H. BERNSTEIN, REGULATING BUSINESS BY INDEPENDENT COMMISSION (Princeton Legacy Library 1955); George J. Stigler, *The Theory of Economic Regulation*, *in* 2 BELL J. ECON. MANAGE. SCI. 3 (1971); Justin Rex, *Anatomy of Agency Capture: An Organizational Typology for Diagnosing and Remedying Capture*, *in* 14 REGUL. & GOVERNANCE 271 (2020); William Novak, *A Revisionist History of Regulatory Capture*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 25 (Daniel Carpenter & David A Moss eds., 2013).

[14] Ernest Dal Bo, *Regulatory Capture: A Review*, 22 OXF. REV. ECON. POLICY 203, 203 (2006).

to have more pro-industry regulation put in place, and *agency* capture where industry attempts to influence how an agency interprets and applies particular regulations.

As this scholarship has progressed, capture is increasingly being recognised as a multifaceted concept extending well beyond the rare cases of the industry directly seeking to influence regulators through bribes or other unlawful means.[15] This scholarship has moved to consider capture in terms of regulators being driven or influenced by industry through non-pecuniary factors.[16] These factors have included political complaints made by industry,[17] the information advantage held by industry over regulators,[18] and the 'revolving door' of work opportunities where those working for regulators often come from the industry or return to the industry.[19]

The complexity of regulatory capture and the difficulties involved with observing and empirically measuring this[20] is reflected in the limited focus on case studies on capture included in this body of scholarship.[21] Such case studies have often focused on the behaviour of regulatory agencies following environmental disasters or the impact of

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[15] Ian Ayres & John Braithwaite, *Tripartism: Regulatory Capture and Empowerment*, 16 LAW & SOC. INQUIRY 435, 454 (1991).
[16] *See also* Jonas Anderson, *Court Capture*, 59 B.C. L. REV. 1543 (2018); Ernest Dal Bo, *supr*a note 14, at 205.
[17] *See* George W. Hilton, *The Basic Behavior of Regulatory Commissions*, 62 AM. ECON. REV. 47, 50 (1972); Randall G. Holcombe, *Rethinking Regulatory Capture*, 37 J. PRIV. ENTER. 39, (2022).
[18] Sam Peltzman, *Toward a More General Theory of Regulation*, 19 J. L. & ECON. 211, 231 (1976); Anderson, *supra* note 16; Wendy E. Wagner, *Administrative Law, Filter Failure, and Information Capture*, 59 DUKE L. J. 1321, 1340 (2010); A. Taeihagh, M. Ramesh & M. Howlett, *Assessing the Regulatory Challenges of Emerging Disruptive Technologies*, 15 REGUL. & GOVERNANCE 1009, 1010 (2021); S. W. Becker and F. O. Brownson, *What Price Ambiguity? Or the Role of Ambiguity in Decision-Making*, 72 J. POL. ECON. 62 (1964).
[19] *See* A. Taeihagh et al., *supra* note 18; Rachel Ashworth et al., *Regulatory Problems in the Public Sector: Theories and Cases*, 30 POL'Y & POL. 195, 201 (2002); Wentong Zheng, *The Revolving Door*, 90 NOTRE DAME L. REV. 1265, 1283 (2015); *See* T. Makkai & I. Braithwaite, *In and* Out *of the Revolving Door: Making Sense of Regulatory Capture*, 12 J. PUB. POL'Y. 61, 69 (1992).
[20] *See* Dal Bo, *supra* note 14, at 217.
[21] D. Carpenter & D. Moss, *Introduction*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT (Daniel Carpenter & David A. Moss eds., 2013).

voting behaviour on councils[22] yet rarely on law enforcement agencies.[23] The few case studies on law enforcement agencies focus more on the oversight bodies for law enforcement agencies rather than the police agencies themselves.[24] The lack of case studies has promoted criticisms of capture scholarship. Carpenter and Moss have described the scholarship as having "grown stale and ever more detached from practice"[25] while noting that capture is a "real and genuine threat to regulation."[26]

Portman has also observed:

> Today literature and the media often freely generalizes that regulated interests have been adept in capturing control of the regulators (Etzioni, 2009; Frank, 2009). However, remarkably little empirical work has been done to describe and analyse the contexts of various types of regulatory programs in terms of their susceptibility or resilience to capture.[27]

More recently, capture scholarship has been reinvigorated with considerations of more nuanced forms of capture, these being cultural capture and information capture. Engstrom describes cultural capture in the following way: "[t]his idea emphasizes interest-group capture of the

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[22] *See* M. Portman, *Regulatory Capture by Default: Offshore Exploratory Drilling for Oil and Gas*, 65 ENERGY POL'Y 37, 38 (2014); L. Fortmann, *The Role of Professional Norms and Beliefs in the Agency-Client Relations of Natural Resource Bureaucracies*, 30 NAT. RES. J. 361, 365 (1990); C. Thomas et al., *Special Interest Capture of Regulatory Agencies: A Ten-Year Analysis of Voting Behavior on Regional Fishery Management Council*, 38 POL'Y STUD. J. 447 (2010); J.K. Grant, *What Can We Learn From the 2010 BP Oil Spill?: Five Important Corporate Law and Life Lessons*, 42 MCGEORGE L. REV. 809 (2011); N. Abdurafiu Olaiya, et al., *Corporate Environmental Accountability in Nigeria: An Example of Regulatory Failure and Regulatory Capture*, 11 J. ACCOUNT. EMERG. ECON. 70 (2021).

[23] *See* T. Cheng & J. Qu, *Regulatory Intermediaries and the Challenge of Democratic Policing*, 21 CRIM. PUBL'N POLICY 59 (2022); I. Ciornei et al., *Regulatory Intermediaries and Value Conflicts in Policy Implementation: Religious Organizations and Life-and-death Policies in Belgium*, REGUL. & GOVERNANCE (2022).

[24] Cheng & Qu, *supra* note 23; Steven Wood, *"Capture" and the South-African Judicial Inspectorate of Prisons: A Micro-Level Analysis*, 19 INT'L. CRIM. JUST. REV. 46 (2009); Stephen Savage, *Thinking Independence: Calling Police to Account Through the Independent Investigation of Police Complaints*, 53 BRITISH J. CRIMINOLOGY 94, 95 (2013).

[25] Carpenter & Moss, *supra* note 21, at 5.

[26] *Id.*

[27] Portman, *supra* note 22, at 38; *see also* Amitai Etzioni, *The Capture Theory of Regulations – Revisited*, 46 SOC. 319, 320 (2009); Thomas Frank, *Obama and 'Regulatory Capture*,' WALL ST. J. 1, 1–2 (June 24, 2009).

administrative process through the creeping colonization of ideas. Thus, an industry can somehow convince regulators to think like it."[28] Kwak has explored cultural capture in terms of social networks and the influence of identity, status and relationships, noting that in terms of those working for regulatory agencies: "There is a spectrum of behaviour that ranges from outright corruption to nobly serving the public. People's actions are the product of many different factors, and mixes of motivations are certainly possible."[29]

Anderson reflects on the increasing difficulty of observing this form of capture:

> Distinct from "informational capture," this form of capture is more concerned with the informal influence of industry and the interpersonal relationships of agency employees . . . . Cultural capture—because it relies upon personal relationships rather than money or jobs—is much harder to pin down than more traditional forms of capture.[30]

Recent scholarship has also observed that complex policy domains are more likely to involve capture as regulators increasingly rely on industry for information which can create an environment where the public is "incapable of tracing policy outcomes to agency decisions."[31]

B. The Particular Impact of Big Tech on Agency Capture

It is at this juncture in regulatory agency capture scholarship that a further challenge to regulators has arrived in the form of Big Tech.[32] While agencies have often struggled to regulate industries producing technically complex products due to information asymmetry,[33] Big Tech

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[28] David Freeman Engstrom, *Corralling Capture,* 36 HARV. J. L. & PUB. POL'Y 31, 32 (2013); *see* JAMES KWAK, *Cultural Capture and the Financial Crisis*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 71, 76 (Daniel Carpenter & David A. Moss eds., 2013).
[29] Kwak, *supra* note 28, at 76–80.
[30] Anderson, *supra* note 16, at 1562.
[31] Engstrom, *supra* note 28, at 35; *see* JAMES WILSON, BUREAUCRACY: WHAT GOVERNMENT AGENCIES DO AND WHY THEY DO IT 79–83 (1991).
[32] See *supra* note 12 and accompanying text for a discussion of Big Tech.
[33] *See also* Sidney A. Shapiro, *The Complexity of Regulatory Capture: Diagnosis, Causality, and Remediation*, 17 ROGER WILLIAMS U. L. REV. 221 (2012); Eva Heims & Sophie Moxon, *Mechanisms of Regulatory Capture: Testing Claims of Industry Influence in the Case of Vioxx*, REGUL. & GOVERNANCE (2023); Jeffrey T. Macher et al., *Regulator Heterogeneity and Endogenous Efforts to Close the Information Asymmetry Gap*, 54 J.L. & ECON. 25 (2011).

and the innovative technologies these companies develop have exacerbated the risks which can lead to regulatory capture. In particular, the pace and enormous scale at which Big Tech operates poses a particular threat to regulatory agencies. The continually developing information advantage which Big Tech has over regulators[34] means that regulators are extremely reliant on this industry to guide them with new technologies. Added to these risk factors is the excitement and appetite of massive numbers of consumers who want to use these new technologies which can impact the decision making of regulators.[35] Big Tech's disruptive mode of operating, which can include disregarding the regulatory regime in place (instead of seeking to challenge or minimise existing regulation)[36] is also a factor which presents challenges for regulators. As Big Tech's development of innovative technologies continues to accelerate, it is more important than ever to monitor the impact this form of industry has on regulators and create awareness,

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[34] Taeihagh et al., *supra* note 18, at 1010; Selwyn W. Becker & Fred O. Brownson, *What Price Ambiguity? or the Role of Ambiguity in Decision-Making*, 72 J. POL. ECON. 62 (1964).

[35] *See generally* Roger Brownsword et al., *Law, Regulation, and Technology: The Field, Frame, and Focal Questions*, *in* THE OXFORD HANDBOOK OF LAW, REGULATION AND TECHNOLOGY 1, 9 (Roger Brownsword et al. eds., 2016); Gregory N. Mandel, *Legal Evolution in Response to Technological Change*, *in* THE OXFORD HANDBOOK OF LAW, REGULATION AND TECHNOLOGY 226, 234 (Roger Brownsword et al. eds., 2016); Deryck Beyleveld & Roger Brownsword, *Emerging Technologies, Extreme Uncertainty, and the Principle of Rational Precautionary Reasoning*, 4 LAW, INNOVATION & TECH. 35 (2012); ANDREW BARRY, POLITICAL MACHINES: GOVERNING A TECHNOLOGICAL SOCIETY 197, 200 (2001); Lyria Bennett Moses, *Recurring Dilemmas: The Law's Race to Keep Up With Technological Change*, U. ILL. J. L. TECH. & POL'Y 239, 246 (2007); Lyria Bennett Moses, *Agents of Change: How the Law Copes with Technological Change*, 20 GRIFFITH L. REV. 763, 766 (2011); Lyria Bennett Moses, *How to Think About Law, Regulation and Technology: Problems with 'Technology' as a Regulatory Target*, 5 LAW INNOVATION & TECH. 1, 5 (2013); ROGER BROWNSWORD, RIGHTS, REGULATION, AND THE TECHNOLOGICAL REVOLUTION 1, 9 (2008); Nathan Cortez, *Regulating Disruptive Innovation*, 29 BERKELEY TECH. L.J. 175, 176 (2014); Karinne Ludlow et al., *Regulating Emerging and Future Technologies in the Present*, 9 NANOETHICS 151, 152–153 (2015); GARY E. MARCHANT ET AL., INNOVATIVE GOVERNANCE MODELS FOR EMERGING TECHNOLOGIES (2013); Lyria Bennett Moses, REGULATING IN THE FACE OF SOCIOTECHNICAL CHANGE, in THE OXFORD HANDBOOK OF LAW, REGULATION AND TECHNOLOGY (Roger Brownsword et al. eds., 2016); Adam Thierer, *The Pacing Problem and the Future of Technology Regulation: Why Policymakers Must Adapt to a World that's Constantly Innovating*, TECHNOLOGY AND INNOVATION EXPERT COMMENTARY (Aug. 8, 2018), https://www.mercatus.org/economic-insights/expert-commentary/pacing-problem-and-future-technology-regulation.

[36] Laura Adler, *Framing Disruption: How a Regulatory Capture Frame Legitimized the Deregulation of Boston's Ride-for-hire Industry*, 19 SOCIO. ECON. REV. 1421, 1442 (2021); Veena B. Dubal et al., *Disrupting Regulation, Regulating Disruption: The Politics of Uber in the United States*, 16 PERSP. ON POL'Y. 919, 919 (2018); I. Shapiro & D. McDonald, *Regulation Uber Alles: How Governments Hurt Workers and Consumers in the New, New Economy,* U. CHI. LEGAL F. 461 (2017).

responses, and mitigations, through analyzing examples of capture.

This paper will contribute to the scholarship on agency capture by analyzing an important case study: the criminal investigation by Tempe Police of the fatal collision between an Uber autonomous vehicle and Elaine Herzberg. This case study is important given the very limited number of case studies available across capture scholarship. It is also important as it will illustrate how Big Tech, as an industry, is deepening capture of regulatory agencies by influencing, not only the primary agencies which regulate aspects of Big Tech directly but also, sub-agencies tasked with carrying out certain duties on behalf of the primary agencies (such as police officers or municipal council workers). This extended influence over multiple levels of regulatory agencies is what I term *secondary* agency capture. An understanding of secondary agency capture needs to begin by revisiting the elements of the traditional model of agency capture.

II. AN EVOLVING MODEL OF AGENCY CAPTURE

A. The Traditional Model of Agency Capture

The large amount of capture scholarship can sometimes obscure the basic elements of what capture is. Carpenter has outlined a model of agency capture which clearly identifies the main elements in the following way:

1. An identifiable 'general interest' or 'public interest' for which a regulation was created. This public interest is embodied in the statute that delegates authority and resources to a regulator which is charged with administering the regulation;
2. An identifiable interest or goal of the 'industry' or within an industry, there exists an interest of dominant or particular firms;
3. That in applications of regulation or enforcement, the public interest or statutory obligations of the agency do not coincide with industry interests; and
4. There exists some mechanism of undue or disproportionate influence whereby the industry attempts to induce the regulator to choose industry interests over the public interest.[37]

[37] Daniel Carpenter, *Detecting and Measuring Capture*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 57, 60 (Daniel Carpenter & David A. Moss eds., 2014).

While Carpenter's model explains the features of agency capture well, this paper will argue that there is a need to expand this model due to fundamental changes in the way in which industry is operating as a result of the development of innovative technologies.

B. Adding Secondary Capture to the Traditional Model

The concept of secondary capture can be added to Carpenter's model in the following way:

1. An identifiable public interest is embodied in a statute that delegates authority and resources to a *primary* regulator who is charged with administering the regulation;
2. The primary regulator directs or requires the assistance of a *subagency* to administer or enforce the regulation;
3. Industry attempts to induce the primary regulator to choose industry interests over the public interest; and
4. Secondary capture occurs when the sub-agency is also induced to choose industry interests over the public interest. This can occur through direct industry influence or because of directions given by the primary agency to the subagency or both.

Secondary capture will not automatically occur in all instances of regulatory capture. There are several risk factors which are likely to increase the chances of secondary capture occurring and which relate to the Uber Herzberg case study.

III. RISK FACTORS FOR SECONDARY CAPTURE

A. A New Type of Industry Player

In much of the literature on regulatory capture, the features of the industry involved, and how these features may influence agencies, is not examined in detail or, is considered self-explanatory. I will argue in this paper that the rise of Big Tech means that more attention needs to be paid to the particular features of how this industry operates and how this influences agencies.

As mentioned earlier, Big Tech is an industry developing complex technologies with a global ability to influence at scale and speed. These technology companies also have the ability to influence the market they operate at different levels. Schiller coined this new digital market as

'digital capitalism' where "networks are directly generalizing the social and cultural range of the capitalist economy as never before."[38]

Big Tech companies have also been called 'gate keepers' with Birch and Bronson describing this as:

> This gatekeeper role can be understood through the dual politics of scalability and modularity we have outlined here, as well as the tensions that arise from it. Big Tech has both the scale size to engender certain outcomes like network effects and the integrative capacity to constitute and control a broader ecosystem of social actors, devices, legal mechanisms, etc.[39]

The growth of digital technologies, the rise of Big Tech (and the digital platforms they have created) has not gone unnoticed by society.[40] Public and political concerns over the vast wealth, market share, and popular influence held by these companies has led to legal action being taken against these companies and comparisons made between Big Tech and nation States.[41] The influence which Big Tech companies can exert in international affairs, through the control of information on their platforms, and lobbying in relation to the passing of laws, has also been the subject of academic and media commentary.[42] Big Tech is a

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[38] DAN SCHILLER, DIGITAL CAPITALISM: NETWORKING THE GLOBAL MARKET SYSTEM (MIT Press 1999).

[39] Kean Birch & Kelly Bronson, *Big Tech*, 31 SCI. AS CULTURE 1, 10 (2022); *see also Regulating Digital Gatekeepers: Background on the Future Digital Markets Act*, EUROPEAN PARLIAMENT, https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659397/EPRS_BRI(2020)659397_EN.pdf.

[40] SCHILLER, *supra* note 38; Elettra Bietti, *Self-Regulating Platforms and Antitrust Justice*, 101 TEX. L. REV. 165 (2022).

[41] *See* Powles, *supra* note 12; Complaint, United States v. Google, U.S. Dist. LEXIS 136338 (2023); *Justice Department Sues Monopolist Google for Violating Antitrust Laws*, OFFICE OF PUB. AFF. (Oct. 20, 2020), https://www.justice.gov/opa/pr/justice-department-sues-monopolist-google-violating-antitrust-laws; Karin Matussek, *Amazon, Apple Probed by Germany Over Online Sales Curbs,* BLOOMBERG TECH. (Oct. 29, 2020), https://www.bloomberg.com/news/articles/2020-10-29/amazon-apple-probed-by-germany-over-online-sales-curbs?leadSource=uverify%20wall; Deborah Brown, *Big Tech's Heavy Hand Around the Globe,* FOREIGN POL'Y IN FOCUS, (Sep. 8, 2020, 6:30 PM), https://www.hrw.org/news/2020/09/08/big-techs-heavy-hand-around-globe; Gunther G. Teubner, *The Corporate Codes of Multinationals: Company Constitutions Beyond Corporate Governance and Co-determination*, *in* CONFLICT OF LAWS AND LAWS OF CONFLICT IN EUROPE AND BEYOND: PATTERNS OF SUPRANATIONAL AND TRANSNATIONAL JURIDIFICATION (Rainer Nickel ed., 2009).

[42] *See* Ellen P. Goodman & Julia Powles, *Urbanism Under Google: Lessons from Sidewalk Toronto,* 88 FORDHAM L. REV. 457, 457–459 (2019); Julia Powles & Hal

distinctive industry which continues to develop innovative technology.[43] This is reflected in Big Tech's behaviour toward and influence over consumers, governments, and regulatory agencies.[44] The concerns regarding Big Tech have primarily focussed on the overt actions of these companies; what is less noticeable is the pervasive influence which these companies can have on State agencies. These agencies are the government departments and instrumentalities of a State which have integral roles and functions in society. This form of influence is far harder to discern as its effect is seen by the general public, and by other State agencies, as a decision or response of the State agency rather than being viewed as an action by the Big Tech company involved.

Therefore, the very nature of Big Tech and the unique way in which this industry operates, is contributing to secondary capture of agencies. This capture is further supported by increasing cultural capture which is occurring due to innovative products being developed by Big Tech with public demand for these products leading to the development of a "shared cultural framework, institutionalized into existing policy frameworks, through which to interpret the ongoing and new policy issues."[45]

B. A Particular Form of Regulatory Agency

For secondary capture to occur, a certain type of relationship needs to exist between the primary regulatory agency and the subagency. This is a relationship whereby the sub-agency is mandated to carry out

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Hodson, *Google DeepMind and Healthcare in an Age of Algorithms,* 7 HEALTH TECH. 351 (2017); Andy Tarrant & Tim Cowen, *Big Tech Lobbying in the EU,* 93 POL. Q. (Apr. 6, 2022), https://onlinelibrary.wiley.com/doi/10.1111/1467-923X.13127; Ian Bremmer, *Big Tech Can See a Future Where the Nation State is No Longer the Master*, THE TIMES (Nov. 19, 2021), https://www.thetimes.co.uk/article/big-tech-can-see-a-future-where-the-nation-state-is-no-longer-the-master-ndt7cqzxf.

[43] Kai Jia & Shaowei Chen, *Global Digital Governance: Paradigm Shift and an Analytical Framework*, 2 GLOB. PUB. POL'Y 283–305 (2022).

[44] *See generally* Jenny Shepherd, *Saving NHS Money - or a Bonanza for Big Pharma and Big Tech?*, OPEN DEMOCRACY (2014)*;* Salomé Cis de Ugarte et al., *A New Era for European Merger Control: An Increasingly Fragmented and Uncertain Regulatory Landscape,* 6 EUR. COMPETITION & REGUL. L. REV. 17, 18 (2022); Dipayan Ghosh & Ramesh Srinivasan, *The Future of Platform Power: Reining In Big Tech*, 32 J. DEMOCRACY 163, 163 (2021); Maham Usman, *Breaking Up Big Tech: Lessons From AT&T,* 170 U. PA. L. REV. 523, 526 (2022); Matthew Feeney, *The Tyranny of Big Tech*, 41 CATO J. 794, 795 (2021) (reviewing JOSH HAWLEY, THE TYRANNY OF BIG TECH (2022)); LEIGHTON ANDREWS, FACEBOOK, THE MEDIA AND DEMOCRACY: BIG TECH, SMALL STATE? (Bob Franklin ed., 2020); Linda Monsees et al., *Transversal Politics of Big Tech*, 17 INT'L. POL. SOCIO. 1 (2023).

[45] Wendy Y. Li, *Regulatory Capture's Third Face of Power*, 21 SOCIO. ECON. REV. 1217, 1221 (2023).

the tasks and duties requested by the primary agency.

Law enforcement agencies usually operate in hierarchies with a clear chain of command from senior to junior officers and have set powers and processes which are used to investigate criminal or other unlawful conduct. Law enforcement agencies in the United States remain subject to industry influence as the priorities and direction of the agency comes from an elected official or is influenced by an elected official.

Capture is very difficult to detect in law enforcement agencies due to the broad discretion retained by senior police officers and county attorneys regarding whether to prosecute a particular matter,[46] and because the decision made regarding prosecution is not open to judicial review. Magill explains:

> Other structural features of judicial control limit its capacity to police capture. Judicial review is only available *ex post*, not *ex ante*, and only to evaluate discrete decisions. Administrative law doctrine rules out challenges that allege systematic or programmatic illegality. Instead, a challenger has to focus on a discrete (and final) agency action.[47]

Anderson also observes that academic work on capture has focused less on capture of courts and police as it is often assumed by scholars that ethical and judicial protections will prevent capture of these institutions; however, capture can still occur. [48]I will use the Uber Herzberg case study to argue that secondary capture is more likely to occur in law enforcement environments due to the structure of the agency and the tasks the law enforcement officers are required to carry out.

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[46] Michael J. Nelson & Taran Samarth, *Judging Prosecutors: Public Support for Prosecutorial Discretion*, 9 RSCH. & POL. 1 (2022); Peter Krug, *Prosecutorial Discretion and its Limits,* 50 AM. J. COMP. L. 643, 653 (2002); Rebecca Krauss, *The Theory of Prosecutorial Discretion in Federal Law: Origins and Developments,* 6 SETON HALL CIR. REV 1, 26–27 (2009).

[47] M. Elizabeth Magill, *Courts and Regulatory Capture* (2011), *reprinted in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 397, 411 (Daniel Carpenter & David A. Moss eds., 2014).

[48]Anderson, *supra* note 16; Steven Wood, "*Capture" and the South-African Judicial Inspectorate of Prisons: A Micro-Level Analysis*, 19 INT'L CRIM. JUST. REV. 46, 59 (2009); Stephen P. Savage, *Thinking Independence: Calling Police to Account Through the Independent Investigation of Police Complaints*, 53 BRIT. J. CRIMINOLOGY 94, 109 (2013).

IV. THE UBER HERZBERG CASE STUDY: APPROACH, MATERIALS AND REGULATORY CONTEXT

I will illustrate how secondary capture of an agency can occur through a documentary analysis of the Tempe Police Department's investigation of the Uber Herzberg incident. This includes analysing relevant media reports, Arizona legislative proceedings, Arizona Executive Orders, United States Federal legislation, NTSB documents, and *State of Arizona v. Vasquez* court documents.[49] In particular, I rely upon the following documents for this analysis: all available documents relating to the review by the Yavapai County Attorney's Office of the fatal collision investigated by Tempe Police between March to May 2018[50] and correspondence between Maricopa County Attorney Bill Montgomery, Yavapai County Attorney Sheila Polk, and Tempe Police Chief Sylvia Moir, in respect to the Tempe police investigation.[51]

There has been minimal scholarly examination to date of the Tempe Police investigation records, and this examination has not considered whether regulatory capture of this agency has occurred. The minimal literature on this investigation has focused instead on the police investigation in terms of police considering the actions of the vehicle operator, how these actions contributed to the collision, and how autonomous vehicle technology should be regulated generally.[52]

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[49] State of Arizona v. Vasquez, No. 785 GJ 251 (Aug. 27, 2020) (Case No. CR2020 - 001853 -001).

[50] These documents were obtained by the author through a Request for Access to Public Records made to the Yavapai County Attorney's Office on June 9, 2022 and are kept on file with the author. This request for records and the subsequent release of these to the author was made pursuant to ariz. rev. stat. § 39-121 and § 39-121.01. It should be noted that Yavapai County Attorney's Office advised the author of the following in relation to this request: "Please note that we may not have all of the documents that were reviewed by our office because as I understand it, many of the records were provided by the Tempe Police Department were provided with website links that have since expired." (Email from Penny Cramer, Admin. Assistant to Sheila Polk, Yavapai Cnty. Att'y to the author (Feb. 25, 2022) (on file with author).

[51] *Id.* Multiple media reports published copies of the correspondence from Yavapai County Attorney Sheila Polk to Maricopa County Attorney Bill Montgomery dated Mar. 4, 2019. *See* Shelby Brown, *Uber Won't Be Held Criminally Liable for Death in Autonomous Car Crash*, CNET (Mar. 6, 2019), https://www.cnet.com/tech/mobile/uber-wont-be-held-criminally-liable-for-death-in-autonomous-car-crash/; Aarian Marshall, *Why Wasn't Uber Charged in a Fatal Self-Driving Car Crash?*, WIRED (Sept. 17, 2020), https://www.wired.com/story/why-not-uber-charged-fatal-self-driving-car-crash/; Sean Hollister, *Uber Won't Be Charged with Fatal Self-Driving Crash, Says Prosecutor*, THE VERGE (Mar. 5, 2019), https://www.theverge.com/2019/3/5/18252423/uber-wont-be-charged-with-fatal-self-driving-crash-says-prosecutor.

[52] *See generally* Neville A. Stanton et al., *Models and Methods for Collision Analysis:*

A. The Regulatory Environment in Arizona for Autonomous Vehicle Testing

In 2018, the regulatory framework for the development and testing of autonomous vehicles across the United States was inherently weak. This was because the regulatory framework left many regulatory decisions for this innovative technology to individual States away from Federal oversight and technical expertise. The ability of Uber to position itself in Arizona and conduct testing of autonomous vehicles with minimal safety requirements was due to the weak regulatory frameworks which have been established at a federal level for autonomous vehicles in the United States.

B. The State/Federal Divide in Regulatory Responsibility

The regulatory frameworks overseeing transportation in the United States have only modestly adjusted to autonomous vehicles being developed and tested on public roads. These frameworks fail to adequately regulate the autonomous vehicle industry in two ways. First, instead of considering fundamental changes that need to be made to this framework due to emerging technologies, the required standards for *all* motor vehicles—whether conventional or autonomous—continue to be regulated federally by the National Highway Traffic Safety Administration (NHTSA).[53] This failure to incorporate features of autonomous vehicle technology into the NHTSA framework means that, until very recently, the only path for the approval of autonomous vehicles by the NHTSA was through a Federal Motor Vehicle Standards (FMVSS) exemption.[54]

A Comparison Study Based on the Uber Collision with a Pedestrian, 120 SAFETY SCI. 117 (2019); Shanshan He, *Who is Liable for the Uber Self-Driving Crash? Analysis of the Liability Allocation and the Regulatory Model for Autonomous Vehicles*, AUTONOMOUS VEHICLES: BUS. TECH. & L. 93 (S. Van Uytsel & D. Vasconcellos Vargas eds., 2021); Alexandra DeArman, *The Wild, Wild West: A Case Study of Self-driving Vehicle Testing in Arizona*, 61 ARIZ. L. REV. 983 (2019); Madeleine Clare Elish, *Moral Crumple Zones: Cautionary Tales in Human-Robot Interaction*, 5 ENGAGING SCI., TECH., & SOC'Y. 40 (2019).

[53] The National Highway Traffic Safety Administration is responsible for road safety in America and seeks to reduce deaths, injuries, and economic losses from motor vehicle crashes. *See* NAT'L HIGHWAY TRAFFIC SAFETY ADMIN, https://www.nhtsa.gov/.

[54] A FMVSS exemption allows manufacturers to sell up to 2,500 vehicles per year for two years while evaluating the safety of a new vehicle. The first FMVSS, specifically written for autonomous vehicles, is limited to mandating vehicle design requirements

Secondly, the NHTSA is limited in its scope to regulate autonomous vehicles. The delineated areas of responsibility should "remain largely unchanged for ADS's" with the NHTSA being "responsible for regulating motor vehicles and motor vehicle equipment, and States are responsible for regulating the human driver and most other aspects of motor vehicle operation."[55] The fundamental weakness of this system is that the NHTSA can only focus on vehicle safety while individual States regulate driver safety and behaviour through road safety laws, licensing and insurance.[56] The testing of autonomous vehicles on public roads falls under road safety laws which can be determined on a State level. [57]

Prior to March 2022, autonomous vehicle manufacturers were required to provide certain evidence to the NHTSA of the safety of the vehicle in development; this evidence came from data which was collected by driving test miles on State roads.[58] This created the irony of a weak federal system pushing manufacturers to test drive autonomous vehicles while not allowing federal control over how this testing was

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to optimise safety for vehicle occupants. The first FMVSS specifically for autonomous vehicles was implemented in March 2022 and is titled "Occupant Protection for Vehicles with Automated Driving Systems." 49 C.F.R. § 571 (Mar. 10, 2022), https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-03/Final-Rule-Occupant-Protection-Amendment-Automated-Vehicles.pdf.

[55] U.S. DEP'T TRANSP. & NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., AUTOMATED DRIVING SYSTEMS 2.0: A VISION FOR SAFETY, SECTION 2 TECHNICAL ASSISTANCE TO STATES, 20 (Sept., 2017), https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf.

[56] Laura Fraade-Blanar & Nidhi Kalra, *Autonomous Vehicles and Federal Safety Standards: An Exemption to the Rule?*, *R*AND CORP.: PERSP. (2017), https://www.rand.org/pubs/perspectives/PE258.html.

[57] The number of states passing legislation for autonomous vehicles has increased gradually each year with twenty-nine states having now enacted legislation addressing issues such as the operation of autonomous vehicles on public roads, required road infrastructure, operator requirements, and the privacy of collected vehicle data. Eleven other states have executive orders issued by their Governors establishing working groups and committees to advise on autonomous vehicles and, in Florida, Arizona, Illinois, and Ohio, these executive orders also approve autonomous vehicle testing programs.

[58] *For example*, NHTSA STANDING GENERAL ORDER ON CRASH REPORTING: FOR INCIDENTS INVOLVING ADS AND LEVEL 2 ADAS (June 2021), https://www.nhtsa.gov/laws-regulations/standing-general-order-crash-reporting, now superseded by STANDING GENERAL ORDER 2021-01 INCIDENT REPORTING FOR AUTOMATED DRIVING SYSTEMS AND LEVEL 2 ADVANCED DRIVER ASSISTANCE SYSTEMS, APRIL 5, 2023), https://www.nhtsa.gov/sites/nhtsa.gov/files/2023-04/Second-Amended-SGO-2021-01_2023-04-05_2.pdf. *See also* Kevin Fogarty, *How Many Test Miles Make a Vehicle Safe?*, SEMICONDUCTOR ENG'G (Aug. 6, 2019), https://semiengineering.com/how-many-test-miles-make-a-vehicle-safe/; Nidhi Kalra & Susan M. Paddock, *Driving to Safety: How Many Miles of Driving Would It Take to Demonstrate Autonomous Vehicle Reliability*?, RAND CORP. (2016), https://www.rand.org/content/dam/rand/pubs/research_reports/RR1400/RR1478/RAND_RR1478.pdf.

conducted.

C. Federal Legislation for Autonomous Vehicles

The Federal Legislature has reinforced the weak governance structure in place for autonomous vehicles in the United States. In 2017, the United States House of Representatives passed the SELF DRIVE Act.[59] The SELF DRIVE Act does not change the division of responsibility between federal and state authorities in respect to autonomous and traditional motor vehicles. State agencies continue to manage issues of registration, licensing, insurance, law enforcement, crash investigation, traffic laws, and regulations while the relevant federal agencies oversee the general safety of motor vehicle design, manufacture, and performance. [60]

The division in regulatory responsibilities at the federal and state level for the testing of autonomous vehicles has created a "patchwork"[61] of state autonomous vehicle laws regulating autonomous vehicles through exemptions in state traffic laws or through states insisting on regulating this technology over local governments.[62] Not only has a patchwork of laws emerged, this regulatory framework continues to allow individual states to experiment with autonomous vehicle testing on public roads, without federal intervention, due to the division of responsibilities set out in the SELF DRIVE Act.

D. The National Transportation Safety Board

The federal framework for regulating autonomous vehicles also includes the NTSB, which is mandated by Congress to investigate every civil aviation accident in the United States and significant accidents in other modes of transportation, including railway, highway, and marine transport. The purpose of the NTSB is to investigate and determine the

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[59] Safely Ensuring Lives Future Deployment and Research in Vehicle Evolution Act (SELF DRIVE Act), H.R. 3388, 115th Cong. (1st Sess. 2017).
[60] Mark A. Geistfeld, *The Regulatory Sweet Spot for Autonomous Vehicles*, 53 WAKE FOREST L. REV. 337, 339 (2018).
[61] Matthew L. Roth, *Regulating the Future: Autonomous Vehicles and the Role of Government*, 105 IOWA L. REV. 1411, 1426 (2020); *see also* Geistfeld, *supra* note 60, at 339.
[62] Roth, *supra* note 61, at 1429; *see also* Lindsey Brock & Lindsay Tropnas, *Survey on the Regulations of Autonomous Vehicles*, 10 J. MULTIDISCIPLINARY RSCH. 23, 29 (2018). Efforts are now being made to rectify the weakness of the U.S. regulatory framework for autonomous vehicles with a Bill introduced to Congress to amend the SELF DRIVE Act. *See* H.R. 3711, 117th Cong. (2021).

probable cause of an accident[63] and make safety recommendations when relevant.

The NTSB does not investigate criminal activity or initiate criminal proceedings. If a transport incident, which is being investigated by the NTSB, may have been caused by criminal activity, then local law enforcement or the Federal Bureau of Investigations will take the lead.[64] The regulatory environment for autonomous vehicle testing in Arizona was vulnerable to capture, even before Uber commenced its autonomous vehicle testing program, for two main reasons:

(i) the State of Arizona was strongly supportive of innovation and allowed permissive regulation of innovative technologies, such as autonomous vehicles; and
(ii) the federal regulatory framework for autonomous vehicles was inherently weak and deferred oversight of autonomous vehicle testing to the States.

The combination of permissive regulation and compromised state agencies allowed Uber to use Arizona as its very own "laboratory of democracy."[65] While the "laboratory of democracy" approach may be beneficial as it allows states to regulate to their respective conditions, there are more concerning features of this regulatory model.[66] Wansley notes that the danger of such situations is that the state's regulatory regime becomes a "front for the interests of the risk creating firms" rather than a genuine test of whether the regulatory framework is suitable for the new technology.[67]

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[63] The term "probable cause" relates to the general authority conferred on the NTSB to 'investigate or have investigated (in detail the Board prescribes) and establish the facts, circumstances, and cause or probable cause' of a particular accident; *see* The Independent Safety Board Act of 1974, 49 U.S.C. § 1131 (current through the National Transportation Safety Board Reauthorization Act of 2006, enacted Dec. 21, 2006).
[64] *See* NAT'L. TRANSP. SAFETY BD., FISCAL YEARS 2018–2022 STRATEGIC PLAN: OMB FINAL SUBMISSION (2017), https://www.ntsb.gov/about/reports/Documents/FY2018-2022strategicPlan.pdf; John D. Clemen et al., *Representing Potential Litigants as Parties to NTSB Public Hearings: Some Problems in Search of Solutions*, 56 J. AIR L. & COM. 969 (1991); Terry Baxter, NTSB, *Independent Investigation of Transportation Accidents,* 19 SAFETY SCI. 271 (1995).
[65]The "laboratory of democracy" concept was first described by Justice Brandeis in the following way: "[i]t is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country." *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting). *See also* Matthew T. Wansley, *Regulation of Emerging Risks*, 69 VAND. L. REV. 401 (2016).
[66] Wansley, *supra* note 65, at 428.
[67] *Id.* at 429–30.

V. THE UBER HERZBERG CASE STUDY: PRIMARY AGENCY CAPTURE

Between 2015 and 2017, a particular series of events led to the regulatory capture of the office of the Governor of Arizona, Doug Ducey and law enforcement agencies in Arizona by Uber.

A. Uber Begins to Develop Autonomous Vehicles

In February 2015, Uber commenced research into autonomous taxi fleet development in a partnership with Carnegie Mellon University's Robotics Institute in Pittsburgh, Pennsylvania.[68] Uber then entered into an agreement with Volvo Cars in Sweden to develop a fully autonomous vehicle by 2021.[69]

In December 2016, Uber announced the following, "San Francisco, your Self-Driving Uber is arriving now," and started offering this service to the public.[70] This operation was quickly shut down by the California Department of Motor Vehicles (DMV) as Uber had not applied for the required autonomous vehicle testing permits. This permit application process required manufacturers to provide detailed information to the DMV about the test drivers they were using, the training program which the test drivers had undergone, evidence of vehicle registration, and sufficient insurance held by the company applying. Permits were required in California for testing an autonomous vehicle with or without a driver.[71] Uber argued that it did not need to

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[68] John Biggs*, Uber Opening Robotics Research Facility in Pittsburgh to Build Self-Driving Cars*, TECHCRUNCH (Feb. 3, 2015, 4:23 PM), https://techcrunch.com/2015/02/02/uber-opening-robotics-research-facility-in-pittsburgh-to-build-self-driving-cars/?_ga=2.69904912.1445867652.1658622722-1072897523.1657004673.

[69] Rosamond Hutt, *Uber is Rolling out Its First Self-Driving Cars (with Humans Behind the Wheel)*, WORLD ECON. F. (Aug. 19, 2016), https://www.weforum.org/agenda/2016/08/uber-s-rolling-out-its-first-self-driving-cars-although-they-ll-still-have-humans-at-the-wheel/; *Volvo Cars and Uber Join Forces to Develop Autonomous Driving Cars* (Aug. 18, 2016), https://www.media.volvocars.com/us/en-us/media/pressreleases/194795/volvo-cars-and-uber-join-forces-to-develop-autonomous-driving-cars; Mike Isaac, *Uber Strikes Deal with Volvo to Bring Self-Driving Cars to Its Network*, N.Y. TIMES (Nov. 20, 2017), https://www.nytimes.com/2017/11/20/technology/uber-deal-volvo-self-driving-cars-.html.

[70] Anthony Levandowski, *San Francisco, Your Self-Driving Uber Is Arriving Now*, UBER BLOG (Dec. 14, 2016), https://www.uber.com/blog/san-francisco/san-francisco-your-self-driving-uber-is-arriving-now/.

[71] The Autonomous Vehicle Branch of the Department of Motor Vehicles (DMV)

apply for this permit as it still used vehicle operators, and that California's position was stifling innovation.[72]

When California insisted that Uber apply for the required permits, Uber turned its attention elsewhere. By the end of 2016, Uber's autonomous vehicles were being transported to Arizona. In 2017, the Uber Advanced Technologies Group operations centre opened in Arizona and the testing of autonomous vehicles began.

B. Arizona's Regulation of Autonomous Vehicle Testing

Doug Ducey was elected Governor of Arizona in 2015. As a strong supporter of business and innovation, Governor Ducey welcomed autonomous vehicles to Arizona and resisted enacting legislation for autonomous vehicles while other States did so.[73] Governor Ducey permitted autonomous vehicle testing on the roads of Arizona in late 2015 by stipulating, through an executive order, basic requirements which companies had to comply with to run testing programs.[74]

Given that States maintain responsibility for implementing road safety laws, it was Governor Ducey's responsibility to determine the rules that would be applicable to the testing of autonomous vehicles on public

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oversees and regulates autonomous vehicle testing and deployment on California roads. *See* DMV, *How to Apply for the Autonomous Vehicle Tester (AVT): Program for Manufacturer's Testing Permit* (2020), https://www.dmv.ca.gov/portal/file/autonomous-vehicle-tester-avt-program-for-manufacturers-testing-permit-pdf/.

[72] *See* Heather Somerville, *Uber Fires Back at California DMV in Self-Driving Car Spat*, REUTERS (Dec. 16, 2016, 7:53 PM), https://www.reuters.com/article/us-uber-selfdriving-regulations-idUSKBN14600Z; Tim Worstall, *Uber, Permits and Self-Driving Cars: There Must Be Space For Innovation To Occur In*, FORBES (Dec. 17, 2016, 10:23 PM), https://www.forbes.com/sites/timworstall/2016/12/17/uber-permits-and-sf-self-driving-cars-there-must-be-space-for-innovation-to-occur-in/?sh=452e26ba47e9; Mike Issac, *Uber Defies California Regulators with Self-Driving Car Service*, N.Y. TIMES (Dec. 16, 2016), https://www.nytimes.com/2016/12/16/technology/uber-defies-california-regulators-with-self-driving-car-service.html.

[73] The very different approaches taken by California and Arizona further demonstrates the 'patchwork' of laws that has developed to regulate autonomous vehicle testing, *supra* note 62. "Since 2012, at least 41 States and D.C. have considered legislation related to autonomous vehicles. Twenty-nine States—Alabama, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maine, Michigan, Mississippi, Nebraska, New York, Nevada, North Carolina, North Dakota, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Vermont, Washington, and Wisconsin—and Washington D.C. have enacted legislation related to autonomous vehicles." *See* NAT'L CONF. OF STATE LEGISLATURES (NCSL), AUTONOMOUS VEHICLES: SELF-DRIVING VEHICLES ENACTED LEGISLATION (Feb. 18, 2020), https://www.ncsl.org/transportation/autonomous-vehicles.

[74] Ariz. Exec. Order No. 2015-09 (Aug. 25, 2015).

roads in Arizona.

In August 2015, Governor Ducey issued Executive Order 2015-09 titled, 'Self Driving Vehicle Testing and Piloting in the State of Arizona; Self-Driving Vehicle Oversight Committee.'[75] This executive order stipulated the following very basic requirements on companies seeking to test autonomous vehicles on the public roads of Arizona:

(a) That the testing and piloting of self-driving vehicles must only be operated by a person authorised by the self-driving entity;[76]
(b) That the self-driving vehicle must be monitored and have an operator who can direct the vehicle's movement if required;
(c) That the operator of the vehicle must have a license to drive in the United States; and
(d) That the entity must submit proof of financial responsibility as required by the Arizona Department of Transportation.[77]

Executive Order 2015-09 also established the "Self Driving Oversight Committee" which was to be administered within the Office of the Governor.[78] This Committee was tasked with advising relevant agencies and selected universities on the best ways to advance the testing and operation of self-driving vehicles on public roads.[79] To date, the Oversight Committee has met only once.[80]

Governor Ducey's continuing enthusiasm for encouraging technological innovation and his policy to minimise regulation was clear in his 2017 "State of the State" address to the Arizona Senate."[81] The minimal requirements for autonomous vehicle testing in Arizona

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[75] *Id.*
[76] "Self-driving entity" is described in Ariz. Exec. Order No. 2015-09 (Aug. 25, 2015) as "the entity developing self-driving technology" and therefore included Uber's autonomous vehicle testing and development program in Arizona.
[77] Ariz. Exec. Order No. 2015-09 (Aug. 25, 2015).
[78] See details about the Self Driving Oversight Committee at ARIZ. DEP'T OF VEHICLE TRANSP., ARIZONA SELF-DRIVING VEHICLE OVERSIGHT COMMITTEE (2016), https://azdot.gov/about/boards-and-committees/arizona-self-driving-vehicle-oversight-committee.
[79] *Id.*
[80] *See, e.g.*, Self-Driving Vehicle Oversight Committee Meeting Minutes, Aug. 15, 2016, Ariz. Dep't of Vehicle Transp., https://azdot.gov/sites/default/files/2019/04/sdvc-minutes-081516.pdf.
[81] Excerpt from Governor Ducey's 'State of the State' address to the Arizona Senate on Jan. 9, 2017:
"We're set to manufacture electric cars, and we're the world's hub for the testing of autonomous vehicles…The word is out: Arizona is open for business…. We will move forward by rolling up our sleeves and rolling back more regulations that are standing in the way of job growth." Ariz. S. Journal, 53d Leg., 1st Reg. Sess., at 9–10 (Az. 2017).

resulted in a proliferation of companies seeking to use Arizona as a testing ground for autonomous vehicle technology between 2015 to 2018.[82] One such company was Uber.

C. Uber's Partnerships with State Agencies in Arizona

Uber's influence over Governor Ducey and State agencies in Arizona started even before its autonomous vehicles entered the State. The close relationship between Uber as a ride hailing provider and Governor Ducey, and his office, has been examined and criticised with media reports disclosing emails between Uber and Governor Ducey's office between 2015 to 2017 which:

> [r]eveal how Uber offered workspace for Ducey's staff in San Francisco, praised the governor lavishly, and promised to bring money and jobs to his state. Ducey, meanwhile, helped Uber deal with other officials in Arizona, issued decrees that were friendly to the company, tweeted out an advert at the company's request, and even seems to have been open to wearing an Uber T-shirt at an official event.[83]

The MCAO partnered with Uber in a campaign to encourage people to use Uber rather than drink and drive.[84] Uber also partnered with Governor Ducey's office and the Arizona Department of Corrections, to set up the 'Uber for Jobs' program in which Uber would provide transport for former prison inmates to travel to job interviews or to their

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[82] Cecilia Kang, *Where Self-Driving Cars Go to Learn*, N.Y. TIMES (Nov. 11, 2017), https://www.nytimes.com/2017/11/11/technology/arizona-tech-industry-favorite-self-driving-hub.html?action=click&contentCollection=Technology&module=RelatedCoverage&region=Marginalia&pgtype=article.

[83] Mark Harris, *Exclusive: Arizona governor and Uber kept self-driving program secret, emails reveal*, THE GUARDIAN (Mar. 29, 2018), https://www.theguardian.com/technology/2018/mar/28/uber-arizona-secret-self-driving-program-governor-doug-ducey. This lack of regulation is also detailed in Defendant's Motion to Remand for a New Determination of Probable Cause Pursuant to Rule 12.9 ARIZ. R. OF CRIM. PROCED. (Oral Argument Requested), State of Arizona v. Vasquez (filed on 5 July, 2021, Maricopa County Superior Court, at 4–5; *supra* note 8.

[84] Audie, *#Save Lives Don't DUI*, UBER NEWSROOM (Dec. 7, 2016), https://www.uber.com/newsroom/savelivesdontdui; *see also* Maricopa County Attorney's Office, *MCAO and Uber Extend Campaign to Combat DUI*, MCAO LATEST NEWS, (Jan. 8, 2016), https://www.maricopacountyattorney.org/CivicAlerts.aspx?AID=352.

places of employment for their first day of work.[85]

In partnering with these State law enforcement agencies, Uber immediately raised its profile in Arizona and became well known to these agencies. In terms of Carpenter's model, Uber was gaining influence over the Governor's Office and MCAO to support the industry interests of Uber. These partnerships with Uber would later lead the MCAO *itself* to request that the YCAO review Uber's culpability for the Uber Herzberg collision to avoid potential criticisms of a conflict of interest. Uber was therefore able to gain influence over both the regulator who was setting the required public safety standards for the testing of autonomous vehicles (The Governor's Office) and the agencies which would potentially enforce any breaches of these standards or of any other laws (MCAO/YCAO). The influence gained by Uber through these partnerships demonstrates not only agency capture, but also a degree of cultural capture with these State agencies developing relationships with, and aligning their ideas with Uber.[86]

This was the regulatory environment in which Tempe Police would conduct their investigation into the Uber Herzberg collision in 2018.

D. Application to Carpenter's Model of Agency Capture

Uber's capture of the Governor's Office and MCAO can be viewed through Carpenter's model of regulatory capture, introduced in section 2 above, in this way:

1. The identifiable 'general interest' or 'public interest' for which a regulation was created is to ensure public safety when autonomous vehicles are tested on public roads in Arizona by companies such as Uber. This public interest is embodied to a limited degree in Governor Ducey's Executive Order 2015-09 that delegates authority and resources to a several State agencies charged with administering the regulation;[87]

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[85] Office of Governor Ducey, *Arizona Partners with Uber on Second Chance Rides Program*, NEWS RELEASE (Nov.7, 2017), https://azgovernor.gov/governor/news/2017/11/arizona-partners-uber-second-chance-rides-program [https://web.archive.org/web/20180925040927/https://azgovernor.gov/governor/news/2017/11/arizona-partners-uber-second-chance-rides-program].

[86] Audie, *supra* note 84; Maricopa County Attorney's Office, *supra* note 84; Office of Governor Ducey, *supra* note 85.

[87] Ariz. Exec. Order No. 2015-09 (Aug. 25, 2015).

2. The identifiable interest or goal of Uber is to ensure that regulation of the testing of autonomous vehicles is not onerous and that regulation does not delay Uber's timeline for having autonomous vehicles tested, certified and ready to sell to consumers;
3. In applications of regulation or enforcement, the public interest of maintaining safety on roads, does not coincide with Uber's commercial interests of clocking up test miles of its autonomous vehicles, as quickly as possible, in order to achieve approval to sell these cars to the public (despite the narrative run by Uber and other corporations that safety is their top priority);[88] and
4. Uber's partnerships with State agencies in Arizona, and its support of Governor Ducey's pro innovation stance, are used to induce the relevant State agencies to choose industry interests over the public interest.[89]

VI. THE UBER HERZBERG CASE STUDY: SECONDARY AGENCY CAPTURE

The following section explores how Uber influenced the Tempe Police criminal investigation of Elaine Herzberg's death by inserting itself into this investigation and then shaping the direction of the investigation. These actions by Uber changed the course of the police investigation and resulted in Uber escaping criminal responsibility for its contribution to the collision occurring.

This section begins with consideration of the agency structure inherent to most law enforcement operations in the United States[90] and

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[88] *See generally* JOEL BAKAN, THE CORPORATION: THE PATHOLOGICAL PURSUIT OF PROFIT AND POWER (2012); Beatriz Fernández-Muñiz et al., *Relation Between Occupational Safety Management and Firm Performance*, 47 SAFETY SCI. 980 (2009); James Dempsey, *Moral Responsibility, Shared Values, and Corporate Culture*, 25 BUS. ETHICS Q. 319 (2015); Noemi. Sinkovics et al., *Rana Plaza Collapse Aftermath: Are CSR Compliance and Auditing Pressures Effective*, 29 ACCT. AUDITING & ACCOUNTABILITY J. 617 (2016); Caroline D. Ditlev-Simonsen & Atle Midttun, *What Motivates Managers to Pursue Corporate Responsibility? A Survey Among Key Stakeholders*,18 CORP. SOC. RESP. & ENV'T MGMT. 25 (2011); Matt. Egan et al., *Profits Before People"? A Systematic Review of the Health and Safety Impacts of Privatising Public Utilities and Industries in Developed Countries*, 61 J. EPIDEMIOL CMTY. HEALTH 862 (2007).

[89] *See supra* note 82 and notes 85–87.

[90] *See generally* John P. Crank & Robert Langworthy, *Institutional Perspective of Policing*, 83 J. CRIM. L. & CRIMINOLOGY 338 (1992); Jon M. Shane, *Organizational Stressors and Police Performance*, 38 J. CRIM. JUST. 807 (2010); JOHN P. CRANK, UNDERSTANDING POLICE CULTURE (Anderson Pub., 2004) ; EDWARD R. MAGUIRE,

then explores specific examples of Uber's influence over the Tempe Police investigation. These interactions between Uber and the Tempe Police demonstrate that Uber was influencing the investigation material considered by police with the net effect of shifting police attention away from Uber and towards the responsibility of the vehicle operator.

The hierarchical structure of law enforcement agencies in the United States, and elsewhere, where agency officers work under a formal chain of command and the flow of information is tightly controlled within the agency, should usually result in an independent and closed process which provides a degree of resistance to regulatory capture. However, if an industry can integrate its influence into a police investigation, then the hierarchical agency structure will amplify this influence and distort normal checks and balances on the subsequent investigation and decision making by police.

This structure exists in the Tempe Police Department which is under the command of the Tempe Police Chief who reports to the Tempe City Manager. Tempe Police has the overall goal of "reducing harm in Tempe" and is responsible for the enforcement of state and local laws, conduct of criminal investigations, running the communications and dispatch service and working with the community to solve public safety issues.[91] Tempe Police officers serve in a chain of command structure with directions and supervision moving downwards from the Chief of Police through Assistant Chiefs, Commanders, Lieutenants, Sergeants and Officers in the respective divisions.[92] The Tempe Police Chief is appointed by the City of Tempe Manager.[93] The City Manager is appointed by the Tempe City Council.[94] Tempe City Councilors are elected by the people of Tempe and serve a term of four years. Councilors have joint meetings with Arizona legislators and are responsible for

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ORGANIZATIONAL STRUCTURE IN AMERICAN POLICE AGENCIES: CONTEXT, COMPLEXITY, AND CONTROL (Albany: State University of New York Press, 2003); Rachel E. Barkow, *Insulating Agencies: Avoiding Capture Through Institutional Design*, 89 TEX. L. REV. 15 (2010); ALEXANDER COOLEY, LOGICS OF HIERARCHY: THE ORGANIZATION OF EMPIRES, STATES, AND MILITARY OCCUPATION (Cornell University Press, 2012).

[91] *See generally*, KENNETH MCCOY, TEMPE POLICE DEP'T, OFFICE OF THE CHIEF, https://www.tempe.gov/government/police/office-of-the-chief; DIVISIONS & ORGANIZATION OVERVIEW, TEMPE POLICE DEP'T, https://www.tempe.gov/government/police/divisions-organization-overview.

[92] DEPARTMENT ORDERS, TEMPE POLICE DEP'T, *Order 0.2.101 Roles & Responsibilities*, https://public.powerdms.com/TempePD/tree/documents/1269086.

[93] *See* CITY DEPARTMENT NEWS, COMMC'N & MKTG., *Tempe's Interim Police Chief Selected to Fill Permanent Role* (Oct. 20, 2021), https://www.tempe.gov/Home/Components/News/News/16102/.

[94] Wrangler News Staff, *Inchausti Approved as New Tempe City Manager*, WRANGLER NEWS (Jul. 3, 2023), https://www.wranglernews.com/2023/07/03/inchausti-approved-as-new-tempe-city-manager/.

approving significant contracts of work and other applications throughout Tempe.

A related State agency is the Department of Public Safety. The close connections between State and Municipal law enforcement departments, and the Governor's office, was demonstrated in January 2023 by Governor Hobbs selecting Tempe Police Chief Glover to be the new Director of the Department of Public Safety.[95]

After the Tempe Police have investigated a matter and compiled a brief of evidence, the final decision on whether to prefer criminal charges rests with the MCAO. The Maricopa County Attorney is the public prosecutor of Maricopa County and is an elected official. The MCAO is responsible, inter alia, for conducting all prosecutions for public offences on behalf of the State of Arizona.[96] The MCAO is also responsible for drawing up and filing indictments following the investigation and recommendation of charges by police.[97]

The criminal investigation into the death of Elaine Herzberg was therefore vulnerable to regulatory capture on two fronts: the integration by Uber into the Tempe Police investigation which influenced the information sent through to MCAO (and subsequently the YCAO) together with Uber's ongoing influence and partnerships which existed with the MCAO.

The following examples from the case study demonstrate how Uber integrated itself into the police investigation and influenced the direction of the investigation. These examples also demonstrate the information advantage which Uber held over the Tempe Police in respect to the vehicle's autonomous technology and how Uber's actions engaged the public and the media to unwittingly support Uber's position that it was only the vehicle operator who was at fault.

A. Uber's First Insertion into the Police Investigation

While the Uber Herzberg collision initially grabbed headlines due to the autonomous features of the vehicle involved, media and police attention rapidly shifted to the actions of the vehicle operator. This

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[95] Miguel Torres, *Tempe Police Chief to Lead Arizona DPS Starting in February*, AZCENTRAL (Jan. 17, 2023), https://www.azcentral.com/story/news/local/arizona/2023/01/18/gov-hobbs-hires-tempe-police-chief-as-head-of-arizona-dps/69816602007/.

[96] ARIZ. REV. STAT. §11-532 (2022) defines the powers and duties of a county attorney, https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/11/00532.htm.

[97] *Id.*

change in focus was assisted by Uber drawing the attention of police to relevant camera footage in the direct aftermath of the collision.

At 10:46 PM on March 18, 2018, Detective Thomas Haubold, Lead Investigator for the Tempe Police Vehicular Crimes Unit, was asked to assist at a fatal collision on Mill Avenue in Tempe between an Uber vehicle and a pedestrian. Haubold spoke with officers at the scene who advised him that the vehicle involved belonged to Uber and was operating in autonomous mode when the crash occurred. A supervisor from Uber, who was also at the collision scene, advised Haubold that the vehicle was equipped with a dash camera which worked independently from the onboard computer systems.[98]

This conversation between Haubold and the Uber representative is the first time that Tempe Police officers were alerted to the vehicle camera footage which becomes central to the investigation. This footage showed the exterior view of the vehicle, including the moment of impact with Herzberg, and the interior view of the vehicle showing Vasquez looking down shortly before the collision.[99]

Detective Barutha from Tempe Police also responded to assist the investigation in the early hours of March 19, 2018, and obtained a search warrant to secure the digital memory card containing the camera footage from the Uber vehicle. Records confirm that Barutha was able to download and save copies of this footage. Two representatives from Uber were present when the camera footage was downloaded and were also provided with a copy of this.[100]

Less than a week after the collision, this video footage was released by Tempe Police. This was an unauthorised release of this footage which was strongly condemned by Maricopa County Attorney, Bill Montgomery.[101] This footage was then used extensively by media

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[98] TEMPE POLICE DEPARTMENT GENERAL OFFENSE REPORT, Assigned to Lead Investigator Detective Thomas Haubold, (Apr. 3, 2018) (GO# TE 2018-32694, Follow Up Report #8), p.2 (on file with author).

[99] There has been an ongoing factual dispute regarding what Vasquez was doing immediately before the collision. This dispute related to whether Vasquez was using a personal phone at the time or completing a task required by Uber using a work phone. This was investigated by Tempe Police and argued during the pre-trial court proceedings. This dispute was not formally resolved as the court proceedings were settled.

[100] Tempe Police Department General Offense Report, Assigned to Detective Barutha, (Mar. 20, 2018) (GO TE# 2018-32694, Follow Up Report #2), at 2 (on file with author).

[101] This was an unauthorised release of the video footage by the Tempe Police Department which was strongly condemned by Mr. Bill Montgomery, Maricopa County Attorney, in correspondence to the Tempe Chief of Police. Correspondence from Mr. Bill Montgomery, Maricopa County Attorney to Ms. Sylvia Moir, Chief of Police, Tempe Police Department (Mar. 26, 2018) (on file with author).

organisations and generated significant public discussion regarding the actions of the vehicle operator and her responsibility for what happened.[102] This engagement by the media and the general public acted to reinforce the position that the vehicle operator had been distracted and was at fault for what happened. It also worked to dilute media scrutiny and public discussion regarding any failings of the vehicle's technology and of Uber itself.

The police interactions with Uber regarding the camera footage are significant as they demonstrate police acceptance of Uber into their investigation within hours of the collision occurring. There is no questioning by Tempe Police as to why Uber representatives needed to attend the downloading of the video evidence and were then immediately provided with a copy of this. There is no instruction by Tempe Police to Uber asking Uber to make a formal request for a copy of this evidence, specifying why it was required, which could then be considered by senior officers. Uber was therefore in possession of critical evidence for this investigation, less than twelve hours after the collision occurred, despite Uber's culpability for what happened remaining undetermined at that time.

The vehicle camera footage is especially significant as it pivots the Tempe Police investigation towards the behaviour of the vehicle operator and the vehicle operator's responsibility for what happened. This has the effect of moving the attention of Tempe Police away from the design of the vehicle and how the vehicle's systems responded to the pedestrian walking on the road – both factors that, as set out below in section 7 on the NTSB investigation, put Uber's culpability squarely in question.[103]

B. Uber's Second Insertion into the Police Investigation

Uber worked quickly to formalise its integration into the police

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[102] *See also* Sam Levin, *Video Released of Uber Self-Driving Crash that Killed Woman in Arizona*, THE GUARDIAN (Mar. 22, 2018), https://www.theguardian.com/technology/2018/mar/22/video-released-of-uber-self-driving-crash-that-killed-woman-in-arizona; Timothy Lee, *Video: Uber Driver Looks Down for Seconds Before Fatal Crash,* ARS TECHNICA, (Mar. 22, 2018), https://arstechnica.com/tech-policy/2018/03/video-uber-driver-looks-down-for-seconds-before-fatal-crash/; Matt Burns, *Video: The Driver of the Autonomous Uber Was Distracted Before Fatal Crash,* TECHCRUNCH (Mar. 22, 2018), https://techcrunch.com/2018/03/21/video-the-driver-of-the-autonomous-uber-was-distracted-before-fatal-crash/.

[103] *See* Helen Stamp, *The Reckless Tolerance of Unsafe Autonomous Vehicle Testing: Uber's Culpability for the Criminal Offense of Negligent Homicide*, 15 CASE W. RES. J.L. TECH. & INTERNET (forthcoming).

investigation of the collision and to retain control of the information which Tempe Police were considering.

Detective Haubold was contacted by Mark Jones, Law Enforcement Liaison for Uber, at 1:18 am on March 19, 2018, less than three hours after Elaine Herzberg died in the hospital. Jones informed Haubold that he had spoken to Uber Supervisor, Matt Gore, and that authorisation had been given for police to view and make a recording of the dashcam footage.[104] Police did not query this involvement of Uber in the investigation. This was despite Tempe Police not requiring permission from Uber to view and record this footage given that this was a critical piece of evidence in the investigation of a serious criminal offence.

Police records also show that Jones provided Haubold with a website address where Haubold could communicate directly with Uber to obtain information for the investigation. This website could also be used by police to upload search warrants and subpoenas. Haubold noted that Jones advised him that Jones would "work directly with me and assist in obtaining information from Uber."[105] By doing this, Uber effectively implemented a system through which Uber could monitor the requests made by police and control the information Uber provided to police.

Tempe Police officers were also contacted by the NHTSA and the NTSB on March 19, 2018, and advised that both federal agencies would be conducting independent investigations of the collision.

C. Uber's Third Insertion into The Police Investigation

Uber representatives were permitted access to the Uber vehicle on multiple occasions while the vehicle was in police custody. Uber also provided information to police and federal agencies about the vehicle's autonomous capabilities and limitations. On March 19, 2018, an information briefing was provided to Tempe Police Command staff with multiple representatives from the NHTSA, NTSB, and Uber attending. This briefing provided parties with a timeline of events since the collision and made arrangements for the parties to have access to the Uber vehicle.[106]

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[104] Tempe Police Department General Offense Report, Assigned to Lead Investigator Detective Thomas Haubold, (Apr. 3, 2018) (GO# TE2018 -32964, Follow Up Report #8), at 2 (on file with author).
[105] *Id.* at 7.
[106] *Id.* at 8.

Detective Haubold provided access to the Uber vehicle for all representatives who attended the information briefing. Uber representatives were permitted access so that they could complete a data offload from the vehicle.[107] The information obtained by Uber from the vehicle was later used in a briefing on March 21, 2018, with a presentation given by Uber titled "K145 Tempe Incident - Preliminary Uber Data Review."[108]

On March 20, 2018, a meeting was held with Tempe Police Command staff[109], NHTSA, and NTSB representatives. Detective Guzman then facilitated access to the Uber vehicle for the NHTSA and NTSB representatives, and later that day, Uber representatives were given further access to the vehicle.[110] Detective Guzman also assisted with facilitating access to the Uber vehicle for representatives of Uber and Volvo on March 23, 2018.[111]

The presentation by Uber to police on March 21, 2018 was held at the Uber facility with NTSB and NHTSA representatives also present. Detective Haubold summarised the main points of this presentation which again focused attention on Vasquez's driving, in his subsequent report:

> The information in the presentation showed that the Uber computer system did recognize Herzberg prior to impact. The computer system also determined an avoidance plan prior to impact. The avoidance plan was not implemented by the computer system, because this is the vehicle operator's responsibility. The data registered that Vasquez took the vehicle out of autonomous driving mode at about

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[107] *Id.* at 9.
[108] *Id.*
[109] Detective Guzman noted in his report that the following senior members of the Tempe Police Department attended this meeting: Chief Moir, Assistant Chief Carbajal, Assistant Chief Humble, Assistant Chief Buren, Commander Glover, Commander Pooley, and Attorney Bill Amato. *See* Tempe Police Department General Offense Report assigned to Detective Jaime Guzman, (Apr. 3, 2018) (GO#TE2018 -32694), at 1 (on file with author).
[110] Detective Guzman noted in his report that the following representatives from Uber as attending this vehicle inspection: Matthew Gore, Jacob Driggs, Daniel Tascione, Noah Zych, and Brandon Basso; *see id.* at 2.
[111] Detective Guzman noted in his report that the following representatives of Uber and Volvo inspected the vehicle Kate Wolf (Uber), Mark Nadeau (DLA Piper Law Firm), Vincent D'Auria (Volvo Cars USA), Jason Guidi (Volvo Cars USA), Steve Fenton (Kineticorp), Peter Andreasson (Volvo Cars Sweden), Jan Ivarsson (Volvo Cars Sweden), John-Fredrik Grönvall (Volvo Cars Sweden) and Henrik Wallin, (Volvo Cars Sweden). *See* Tempe Police Department General Offense Report assigned to Detective Jaime Guzman. *Id.* at 4.

> the same time the collision occurred. Video from the camera system located on top of the vehicle captured moments prior to the collision, the collision, and the time period after the collision.[112]

These notes indicate that police were advised at that time that the Uber vehicle was able to detect the pedestrian and could determine a pathway to avoid the pedestrian. Uber also advised that avoidance actions were the responsibility of the vehicle operator. While Detective Haubold also noted a seemingly critical point that Uber had overridden the Volvo technology, which would have normally allowed the vehicle to initiate an avoidance response, this issue was not followed up by police.

D. Uber's Shaping of the Tempe Police Investigation Gains Traction

1. The Confusion of 'Hovering Hands'

The Tempe Police officers investigating the collision were not experts in autonomous driving technologies nor were these officers aware of how Uber was running its autonomous vehicle testing program. Tempe Police documents record how officers became aware of the unusual way Vasquez was driving at the time of the collision. Officers Scharrer, Guajardo, and Loehr all spoke with Vasquez immediately after the collision.[113] Haubold wrote in his report that Vasquez advised officers that the vehicle had been operating in 'self-driving mode,' that she had not been touching the pedals and that her hands had been 'hovering' over the steering wheel.[114] Vasquez also advised Officer Guajardo that the 'Volvo was self-driving and that [she] was not in control at the time of the collision.'[115] Officer Loehr asked Vasquez what she meant by this when he spoke with her at the scene

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[112] Tempe Police Department General Offense Report, Assigned to Lead Investigator Detective Thomas Haubold, (Apr. 3, 2018) (GO# TE2018 -32964, Follow Up Report #8), at 11 (on file with author).

[113] Tempe Police assessed Vasquez as not exhibiting any signs of impairment on the night of the collision. *See* Tempe Police Department General Offense Report Original Officer Narrative Kyle Loehr, (GO#TE 2018 -3269) (Mar. 21, 2018), at 2 (on file with author).

[114] Tempe Police Department General Offense Report, Assigned to Lead Investigator Detective Thomas Haubold, (Apr. 3, 2018) (GO# TE2018 -32964, Follow Up Report #8), at 6 (on file with author).

[115] Tempe Police Department General Offense Report, Supplemental Officer Narrative Joe Guajardo, (GO#TE 2018 -32694) (Mar. 19, 2018) (on file with author).

and recorded the following:

> She stated that she was not touching the steering wheel, gas pedal, or the brake pedal in any way leading up to the collision. When asked where her hands were, VASQUEZ stated that her hands were "hovering" over the steering wheel. When asked what she meant by that, VASQUEZ held her hands in front of her and said to imagine a steering wheel directly in front of her. VASQUEZ's hands were at the imaginary steering wheel's 5-o'clock and 7-O'clock positions with her palms facing up and her hands in a 'C' shape, as if she was prepared to grab a steering wheel at a moment's notice.[116]

As with the camera footage, the way Vasquez was driving became a focus of the police investigation. The description of Vasquez operating the vehicle with her hands 'hovering' at the time of the collision caused significant confusion for the police who remained unaware throughout most of their investigation that this driving position was a requirement set by Uber for all its vehicle operators.[117]

There is no indication in the police records that Uber directly advised police that this was a requirement set by Uber itself. The confusion also demonstrates a gap in the knowledge police had of how the autonomous vehicles were being tested on Arizona roads. It also reinforced the focus of police attention on how Vasquez had been driving when the collision occurred and away from the vehicle's technology and from Uber Corporation.

2. Uber Delays Provision of Documents to Police

Uber's involvement in the police investigation also impacted the normal investigatory processes of Tempe Police. The collision which killed Elaine Herzberg triggered a flurry of investigative activity by the Tempe Police Department. Multiple search warrants were issued as

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[116] Tempe Police assessed Vasquez as not exhibiting any signs of impairment on the night of the collision. See Tempe Police Department General Offense Report Original Officer Narrative Kyle Loehr, (GO#TE 2018 -3269) (Mar. 21, 2018) (on file with author).

[117] NAT'L. TRANSP. SAFETY BD., HUMAN PERFORMANCE FACTORS GROUP CHAIRMAN'S FACTUAL REPORT: HUMAN PERFORMANCE ATTACHMENT – VEHICLE OPERATOR HAND AND FOOT HOVERING PROCEDURES TEMPE, ARIZONA HWY18MH010 (Nov. 5, 2019), https://data.ntsb.gov/Docket/?NTSBNumber=HWY18MH010.

police tried to ascertain what had caused the collision and obtain relevant evidence.

One application stands out in the Tempe Police investigation file. On March 21, 2018, Detective Seal sought an order for the disclosure of records which was duly issued by the Tempe Municipal Court.[118] This order required Uber to provide "Any and all employer personnel and training files pertaining to the employment of Rafael Vasquez, and any and all documents related to company policies, procedures, and training requirements pertaining to drivers of autonomous vehicles."[119]

Detective Seal wrote, in his petition seeking this order, that he believed that the requested information would be relevant to the investigation because Vasquez was driving an autonomous vehicle and was employed by and working for Uber at the time of the collision.[120] Detective Seal had previously logged a request for these records through the Uber Law Enforcement Response Team (LERT) portal and had been advised by Uber that he would need to obtain a subpoena for these records.

Following the issuing of this disclosure order by the Tempe Municipal Court, Detective Seal spoke again with the Uber LERT about service of the order. Detective Seal was asked to upload a copy to the Uber portal and to mail the original copy to Uber Technologies' Custodian of Records in San Francisco.[121]

On March 21, 2018, Detective Marsland obtained a search warrant to seize "Rafael Vasquez's testing and qualification records, records regarding the performance specifications of the Volvo XC90 as outfitted by Uber, [and] the digital video files captured by the on-board self-driving system."[122] The affidavit in support of this warrant indicates that Detective Marsland was attempting to obtain a copy of the "Uber K145 Preliminary Data Analysis" which had been prepared by Uber and viewed by Detective Marsland at the briefing on March 21, 2018. Detective Marsland explained the importance of this document in his affidavit:

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[118] Tempe Municipal Court, County of Maricopa, State of Arizona, Order to Disclose a Record or Other Information, (CR 18-0004) (Mar. 21, 2018) (on file with author).
[119] *Id.*
[120] Tempe Municipal Court, County of Maricopa, State of Arizona, Petition for Order for Disclosure of Records sworn and deposed by Detective Seal (CR 18-0004) (Mar. 21, 2018), p.1 (on file with author).
[121] Tempe Police Department General Offense Report, Detective Jonathan Seal, (GO TE# 2018-32694 Follow Up Report #10) (Apr. 3, 2018), at 1 (on file with author).
[122] Tempe Police Department, City of Tempe Search Warrant, (County of Maricopa, State of Arizona) (Warrant No. 2018 003045) (issued on Mar. 21, 2018), at 6 (on file with author).

> Most notably, this document outlines the limitations of the Self-Driving-System (SDS) in its current state of deployment in its research and development process, as well as the duties that the Uber company places on the driver in relation to those limitations when an emergency situation becomes apparent.[123]

When officers attempted to execute this search warrant, Uber representatives requested additional time to put the files together as there were ongoing discussions about confidentiality of the requested documents. Detective Marsland recorded the following response from Uber:

> On 03-27-18 I learned that the Uber company requested more time to put the files together and was also in legal discussions with my superiors and legal advisor about confidentiality regarding the documents. As such, the decision was made to return the search warrant without seizing any items, and to abtain [sic] a new search warrant for the same documents to allow Uber more time to come to a legal agreement.[124]

The decision was then made by police to return the search warrant without seizing any items 'due to ongoing legal discussions with Uber'[125] and to obtain a new search warrant for the same documents to allow Uber "more time to come to a legal agreement."[126] This decision making by police is remarkable; search warrants are usually used to seize and preserve evidence with any legal arguments regarding confidentiality or relevance of the evidence made after this has occurred.

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[123] Tempe Police Department, City of Tempe, Affidavit for City of Tempe Search Warrant (County of Maricopa, State of Arizona), (Warrant No. 2018 003045) (Mar. 21, 2018), at 3 (on file with author).
[124] Detective Kasey Marsland, Tempe Police Department, GO#TE 2018-32694, Follow Up Report #7 (2018).
[125] Tempe Police Department General Offense Report, Detective Jonathan Seal, (GO TE# 2018-32694 Follow Up Report #10) (Apr. 3, 2018), at 1 (on file with author).
[126] Tempe Police Department, Warrant No. 2018 003228, Search Warrant, (2018). The service document for this warrant notes that Tempe Police are still in the process of obtaining the requested documents from Uber. The warrant was subsequently executed by the Tempe Police Department Legal Advisor with the service documents noting that Police are still in the process of obtaining digital video files documenting the incident and perception/reaction testing data from Vasquez.

3. Revision of Information by Lead Investigator

The impact of Uber's involvement in the police investigation can be seen in the final review of the case by lead Detective Haubold before the police brief was provided to the MCAO. Haubold reviewed the documents provided later by Uber following the delayed search warrant. Haubold's notes recorded the following after his review:

> There is also an emphasis placed on safety throughout the training and certification process. The literature specifically mentions paying attention to surroundings, scanning ahead for potential interactions, the prohibited use of cell phones while piloting, and not taking your eyes off the road. . . . Safety is dependent on the vehicle operator's capability to manually control the vehicle to mitigate hazards while the vehicle is in self-driving mode.[127]

Haubold also recorded that "I was not able to find anywhere in the literature that the self-driving systems alerts the vehicle operator to potential hazards or when they should take manual control of the vehicle to perform an evasive maneuver."[128] This lack of a warning alert for the vehicle operator was not followed up by police.

Detective Haubold concluded, in his report dated Apr. 3, 2018, that the unlawful crossing of the road by Elaine Herzberg, the distracted driving of Vasquez, and Vasquez's failure to intervene and avoid the crash were the main causes of the collision. Haubold then referred the matter to the MCAO for a review of charges against Vasquez.[129]

4. Review of Uber's Culpability by the Yavapai County Attorney's Office

Uber's influence on the Tempe Police investigation had a flow on effect to the agencies responsible for determining whether a criminal prosecution should proceed. In May 2018, the Tempe Police brief of evidence for the Uber Herzberg collision was sent by Maricopa County

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[127] Tempe Police Department General Offense Report, Assigned to Lead Investigator Detective Thomas Haubold, (Apr. 3, 2018) (GO# TE2018-32694, Follow Up Report #8), at 11 (on file with author).
[128] *Id.* at 12.
[129] *Id.* at 17.

Attorney, Bill Montgomery to Yavapai County Attorney, and Sheila Polk for a review as to whether Uber should face criminal charges. Maricopa County would normally have jurisdiction to conduct this review due to the location of the collision, but concerns were raised by Montgomery that a perception of a conflict of interest could occur given the previous partnerships between the MCAO and Uber.[130]

On March 4, 2019, Polk wrote to Montgomery to advise that her office had determined that no action should be taken against Uber for the fatal collision in March 2018. Polk explained in her correspondence that:

> After a very thorough review of all the evidence presented, this office has determined that there is no basis for criminal liability for the Uber Corporation arising from this matter. Because this determination eliminates the basis for the MCAO conflict, we are returning the matter to MCAO for further review of criminal charges.
>
> Based on the entire investigation, this office has concluded that the collision video, as it displays, likely does not accurately depict the events that occurred. We therefore recommend that the matter be furthered to the Tempe Police Department to obtain additional evidence. Specifically, we believe that an expert analysis of the video is needed.[131]

This decision was made by the YCAO six months before the NTSB investigation report was published on March 18, 2018.[132] The NTSB commenced their investigation the day after the collision occurred and were present at meetings and inspections of the Uber vehicle as the Tempe Police investigation progressed. The Tempe Police, MCAO, and YCAO were aware of the close NTSB involvement in the investigation and the organization's expertise. These State agencies chose not to be informed by the NTSB report and chose to make a determination

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[130] Correspondence from Keith Manning (May 25, 2018), in Maricopa County Attorney's Office to Sheila Polk (2018); Correspondence from Keith Manning (May 25, 2018), in Maricopa County Attorney's Office to Sylvia Moir (2018).

[131] Polk, *supra* note 9.

[132] NAT'L TRANSP. SAFETY BD., *Highway Accident Report: Collision Between Vehicle Controlled by Developmental Automated Driving System and Pedestrian* (2019), https://data.ntsb.gov/Docket/Document/docBLOB?ID=40479021&FileExtension=.PDF&FileName=NTSB%20-%20Adopted%20Board%20Report%20HAR-19%2F03-Master.PDF.

regarding Uber's culpability before the NTSB published their comprehensive, technical findings.

E. Application to the Secondary Capture Model

Uber's secondary capture of the Tempe Police Department investigation can be viewed through the modified version of Carpenter's model as proposed above in section 2:

1. The public interest of holding those who do not drive safely to account under criminal law is embodied in a statute that delegates authority and resources to the relevant County Attorney (primary regulator) to consider evidence and determine when criminal charges should be preferred;
2. The relevant County Attorney directs or requires the assistance of the relevant police department (subagency) to administer or enforce the regulation;
3. Uber was already in the process of inducing primary regulators to choose industry interests over the public interest for its vehicle testing program; and
4. Secondary capture occurred when Tempe Police were induced to choose Uber's interests over the public interest by focusing only on the vehicle operator's culpability for the collision and not Uber's contribution to what happened. This occurred through direct industry influence by Uber which inserted itself into the investigation (which also involved senior Tempe Police and MCAO representatives) and because of directions given by MCAO/YCAO to Tempe Police.

This secondary capture produced a feedback loop of evidence: the evidence obtained by the Tempe Police investigation, which had been influenced by Uber, was provided to the MCAO to consider what charges should be laid for the fatal collision. This brief of evidence was then sent by MCAO to the YCAO to review as a result of MCAO's partnerships with Uber. The YCAO cleared Uber of any culpability and referred the matter back to MCAO and Tempe Police to consider charges against Vasquez. The evidence from the Tempe Police investigation which had been influenced by Uber was then used by MCAO to indict Vasquez.

Uber was cleared of any corporate criminal culpability for the death of Elaine Herzberg and with the reputation of its autonomous technology remaining intact. All blame for the collision was laid squarely

on human error by both Vasquez and Herzberg.

VII. THE PARALLEL INVESTIGATION BY THE NTSB

To clearly appreciate the extent of Uber's influence over State agencies in Arizona, and the decision not to hold Uber criminally responsible for its contribution to the collision, an independent assessment of Uber's culpability needs to be considered. This is provided by the NTSB investigation into the collision.

The aim of an NTSB investigation, in accordance with its mandate to improve the safety of transportation, is to determine the "cause or probable cause"[133] of an accident and make recommendations to address this. It is generally accepted that NTSB investigation reports cannot be used by the government in criminal proceedings, however, a defendant in such proceedings can choose to use NTSB reports if they wish to. [134]

The NTSB commenced their investigation into the Uber Herzberg incident after they were notified about this on March 19, 2018. The NTSB conducted a detailed investigation of the collision with input from relevant experts, including an analysis of the vehicle's autonomous technology functions, the conduct of Uber, how Uber managed the testing program of their autonomous vehicles, the highway conditions, and the actions of the pedestrian.[135]

The NTSB found that, although the distraction of the vehicle operator was the primary cause of the collision, the way in which Uber developed and operated its autonomous vehicle testing program with an inadequate safety culture, ineffective oversight of vehicle operators, and its failure to manage the safety risks of its automated driving system's limitations, contributed to what happened.[136]

A. Uber's Inadequate Safety Culture

The NTSB found that Uber had an inadequate safety culture which was demonstrated by a lack of risk assessment mechanisms, a lack of oversight of vehicle operators, and a lack of personnel with backgrounds in safety management.[137] The final NTSB investigation report noted that, at the time of the crash, Uber had no corporate safety division or

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[133] 49 U.S.C. § 1131 (1975).
[134] 180 A.L.R Fed. 61.
[135] NAT'L TRANSP. SAFETY BD., *supra* note 132, at 1–2.
[136] *See supra* text accompanying note 132, at 5–6.
[137] *See Id.* at 6.

dedicated safety manager responsible for managing the risk of automated driving system testing on public roads. Uber did not have a formal safety plan or dedicated fatigue management policy.[138]

B. Uber's Failure to Recognise the Limitations of the Automated Driving System

The NTSB investigation included a comprehensive review of the vehicle involved in the collision, including a review of its autonomous technology and the performance of the vehicle before and after the crash.[139] This was information and expertise missing from the Tempe Police investigation, where the analysis centred on the actions of the vehicle operator and the pedestrian.[140]

The NTSB investigation noted that, because the automated driving system was in the process of being developed, there would be limitations and expectations of failure while the system was being tested. The risk to public safety would therefore depend on the safety redundancies and mitigation strategies incorporated into the automated driving system design to reduce this risk. It was this information which the Tempe Police had been seeking in the search warrant which was delayed by Uber for confidentiality reasons.

The NTSB found that Uber did not manage the anticipated risk of the limitations of their autonomous vehicles. A fundamental limitation of the vehicle involved in the collision was an inability of the system to correctly classify and predict the path of Herzberg where she crossed the road.[141] At the time of the crash, the Uber automated driving system was unable to anticipate and properly identify pedestrians who were not walking on marked crosswalks and therefore the system could not

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[138] *See Id.* at 27.

[139] NAT'L TRANSP. SAFETY BD., *OFFICE OF HIGHWAY SAFETY VEHICLE AUTOMATION REPORT* (2019), https://data.ntsb.gov/Docket/Document/docBLOB?ID=40477717&FileExtension=.PDF&FileName=Vehicle%20Automation%20Report-Master.PDF; NAT'L TRANSP. SAFETY BD., *OFFICE OF HIGHWAY SAFETY VEHICLE FACTOR'S GROUP CHAIRMAN'S FACTUAL REPORT* (2019), https://data.ntsb.gov/Docket/Document/docBLOB?ID=40477724&FileExtension=.PDF&FileName=Vehicle%20Factors%20Group%20Chariman%27s%20Factual%20Report-Master.PDF.

[140] Tempe Police Department, Final Frame Camera Triangulation/ped position at 13 frames apart report (undated); Tempe Police Department, Visibility Testing/Skid Testing (Mar. 22, 2018); and Tempe Police Department, Breakdown of Driver's Eye Movement/Avoidability of Crash Calculations (undated report) (on file with author).

[141] *See supra* text accompanying note 132, at 6.

calculate the predicted path of Herzberg.[142]

The NTSB found that Uber's "action suppression" system, which precluded braking in an emergency if a collision was unavoidable, increased the safety risks when testing an automated driving system on public roads.[143] The system was also designed to not allow *any* emergency braking if a collision was unavoidable. In such a situation, no braking would occur which could mitigate the impact of a collision or even avoid it.[144]

The inability of the vehicle to alert the operator to a hazard and to the need to take evasive action was noted by the Tempe Police but not explored further.[145]

While the Uber automated driving system could not accurately identify Herzberg as a pedestrian, it could detect her as an object in front of the vehicle, however, the suppressed braking design meant that there was no ability to mitigate the speed of the vehicle before impact.

C. Uber's Failure to Recognise the Risks of Automation Complacency

The NTSB found that Uber did not adequately recognise and manage the risk of the effects of automation complacency on their vehicle operators and that this contributed to the crash occurring. Automation complacency refers to a person's overreliance on an automated or autonomous system which they are monitoring, and the resulting disengagement and loss of human attention occurs.[146]

The NTSB found that Uber's decision in late 2017 to remove the second vehicle operator from the test vehicles increased the demands on the sole operator and increased the risks of the vehicle being driven by a distracted or disengaged operator.

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[142] *See id*. at 16.
[143] *See id*. at 40.
[144] *See id*.
[145] Tempe Police Department General Offense Report, Assigned to Lead Investigator Detective Thomas Haubold, (Apr. 3, 2018) (GO# TE2018 -32964, Follow Up Report #8), at 16–17 (on file with author).
[146] Schneider v. Cessna Aircraft Co., 722 P.2d 321, 327 (Ariz. Ct. App. 1986); Raja Parasuraman & Dietrich H. Manzey, *Complacency and Bias in Human Use of Automation: An Attentional Integration* 380, 381–82 (2010); Raja Parasuraman et al., *Performance Consequences of Automation-Induced 'Complacency'* 3 INT'L J. AVIATION PSYCH. 1, 2 (1993); D.R. DAVIES & RAJA PARASURAMAN, THE PSYCHOLOGY OF VIGILANCE (1982); Ken Funk et al., *Flight Deck Automation Issues*, 9 INT'L J. AVIATION PSYCH. 109, 109–10 (1999).

D. The State of Arizona's Contribution

The NTSB was also critical of the role that the State of Arizona had played in creating conditions which contributed to the crash, including the State's lack of a safety-focused application approval process for automated driving system testing at the time of the crash, and the State's inaction in developing this process after the crash occurred.[147]

DISCUSSION AND CONCLUSION

The growth of Big Tech, and the development of innovative technologies occurring at a scale and pace not previously seen, creates an increased risk that agency capture will occur. The significant information advantage held by Big Tech over regulators, and the cultural capture of State agencies, means that agency capture is deepening to encompass not only primary regulatory agencies, but also secondary agencies who assist with regulatory processes and enforcement.

The Uber Herzberg incident allows for the exploration of an extended model of agency capture involving primary and secondary levels of capture. Given that detecting cases of regulatory capture is difficult in general, the observation of secondary capture of an agency is even more challenging. This is because secondary capture of a subagency is more likely to be overlooked or considered to be part of the decision-making process of the relevant primary agency.

The Uber Herzberg case study demonstrates the significant impact which secondary capture of an agency can have. It also demonstrates that secondary capture of a sub agency takes place in two ways with cumulative effects: (i) through direct influence from the industry in interactions with the sub-agency and (ii) through interactions between the sub-agency and the primary agency. Secondary capture is pervasive as the sub agency is usually mandated to follow the instructions of the primary agency in carrying out specific regulatory functions. This often occurs while the primary agency is also being influenced by industry interests.

Law enforcement agencies are more susceptible to secondary capture due to their structure and mode of operating. Secondary capture of law enforcement agencies can have profound consequences for the fair determination of criminal culpability; both for individuals, corporations, and society generally. This is shown in the case study with the decisions made and evidence considered during the Tempe Police investigation

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[147] *See supra* text accompanying note 132, at 54–55.

feeding into the brief of evidence which was then reviewed by the YCAO. The decision was then made that there was no basis on which to hold Uber criminally responsible for its contribution to the fatal collision, despite the availability of the NTSB investigation reports and findings. This meant that Uber avoided criminal proceedings, that important safety issues regarding the operation of Uber's autonomous vehicle testing program were not fully addressed and that all criminal responsibility lay with Vasquez.

While this paper has identified and explored one case study of secondary capture, further research needs to be done. Detecting the presence of agency capture and whether this has led to a negative outcome will remain a difficult but essential task in addressing this issue. Zingales observes "[a]wareness of the risk of capture is the first line of defense. It might not be sufficient protection, but it is certainly a necessary one. Without this awareness, any other initiative is hopeless."[148]

This analysis is not intended to be a critique of the Tempe Police officers who conducted this investigation; instead, it is a cautionary example of the subtle influence which can be exerted over State agencies by private corporations developing innovative technologies. It demonstrates the need for awareness of this form of influence and how this can occur in permissive regulatory environments. It also indicates the need for processes to be implemented to allow independent expertise on innovative technologies to be effectively shared with, and used by, State agencies so criminal investigations of real-world harm caused by these technologies can achieve true accountability.

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[148] Luigi Zingales, *Preventing Economists' Capture*, *in* PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 1, 29 (Daniel Carpenter & David Moss eds., 2013).