

Public Risks:

INSURANCE AND THE ETHOS OF “MOVE FAST AND BREAK THINGS” – AUTOMOBILES AND ARTIFICIAL INTELLIGENCE

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Insurance is the unappreciated hero of innovation. Innovation is critical, but messy. Insurance protects individuals, families, communities, and businesses from the injury and damage that may result from the tech innovator’s philosophy of “move fast and break things.” Safety, security, and cost tradeoffs are the hallmark of “just good enough” products. Liability insurance often bridges the gap between “just good enough” products and the consumer. The insurance industry’s 20th century experience with the automotive industry and “just good enough” products holds lessons for the underwriting of artificial intelligence (AI).

In the mid-20th century, one of the major public risks was the automobile, which at that time, was a death trap. In the summer and fall of 1956, the 84th Congress and, more specifically, the Interstate and Foreign Commerce Committee, held 14 days of hearings on traffic safety.¹ The Committee produced over a thousand pages of testimony from engineers, medical associations, bar associations and other experts. The testimony documented decades of carnage and a seeming disregard for known better and safer design practices. It is worth noting that the Army Air Corps, to make World War II fighters more survivable, had already pioneered many of the safety features (e.g., seat belts and console design) that might have made the mid-20th century automobile safer.²

Dr. Hunter Shelden’s introductory article more or less opens the hearing: “The public is not aroused only because automobile fatalities are accepted as ‘accidental deaths.’ In reality, there is nothing accidental about them...the injury occurs primarily as the result of the faulty interior design of the automobile...as there is almost no feature of the interior design of a car that provides for safety.”

Some automobile manufacturers argued that the costs of including good door locks, collapsible steering wheels, well designed and anchored seat belts, better seats, air bags, and roll bars were simply too expensive. Despite the fact that 40,000 people died in auto accidents in 1956, only 2 percent of Ford buyers purchased the USD 27 seat belt option. It would take another decade, a muckraker, more injuries and deaths, and a surprising best seller to drive safety change in the automobile industry.

In 1965, Ralph Nader published “Unsafe at Any Speed: The Designed-In Dangers of the American Automobile,”³ in which the 1959 Corvair’s suspension issues, subsequent crashes, and over 100 lawsuits became emblematic of the automobile industry safety issues.⁴ *Unsafe at Any Speed* launched a mass consumer movement that demanded safer cars and resulted in the passage of the National Traffic and Motor Vehicle Safety Act (NTMVSA) in 1966 and enactment of seat belt laws in 49 states.

It is surprising that it took 70 years from design and sale of the first gasoline powered automobile in 1883 to the passage of NTMVSA.⁵ During those 70 years, the

automobile insurance industry underwrote both the economic and social costs of manufacturers' engineering, marketing, and financial decisions and legislators' and regulators' failure to mandate automotive safety requirements. History may be repeating itself as the insurance industry is underwriting the economic and social costs of AI and the necessary regulation and legislation to make AI "safe" is a long way off.

Ironically, the same year the 84th Congress held hearings on traffic safety, Dartmouth College hosted the first conference on AI...1956 was a very busy year. It is beyond the scope of this paper to outline the successes and failures of AI researchers and entrepreneurs over the past 60 years, but AI has developed into a strategic and commercial game changer. Like Ralph Nader's 1959 Chevy Corvair, however, AI is not as safe as it can be. Indeed, AI is the world's most important public risk and perhaps the insurance industry's greatest challenge.

As a public risk, the insurance of AI differs from insuring automobiles in significant ways. AI is not an emerging technology. It is everywhere: learning, increasingly autonomous and making decisions. AI fights wars, makes smart phones useful, provides directions, recognizes voices, protects homes, dispenses hot water, tracks activities, streams entertainment, drives cars, decides police patrol assignments, provides sentencing recommendations, translates documents, makes medical diagnoses, makes loan decisions, gets a job interview, and enables online vendors to make personal recommendations. In short, AI advances science, has numerous military applications, makes investments, and controls both transportation and power infrastructures. AI has countless consumer applications. With the exponential growth of the Internet of Things and networked platforms, AI ecosystems will carry significant aggregate exposures that will likely prove difficult to understand and underwrite.

The characteristics inherent in AI, especially continuously learning algorithms, present insurers with interconnected management, regulatory, corporate governance, risk management and underwriting challenges. Regulators will also struggle with continuous learning algorithms and the introduction of new data may not generate different answers for a given question.

AI, particularly decision-making autonomous algorithms, will revolutionize injury and contract law. Risk managers, underwriters, and product designers need to keep a close eye on legal scholars and policyholders' lawyers as

they perfect new "AI" torts. Complementing the coming revolution in injury and contract law will be equally transformative changes in regulation and legislation. Over the next 20 years, AI will change society more than the introduction of the automobile.

However, AI, or more correctly, its algorithms, is as good as its training data. Just as the 1959 Corvair lacked seat belts and other safety features, the data used to train AI is potentially problematic. With biased training data, AI's output may be racist, sexist or otherwise biased. Unfortunately, AI learns these traits from our social media, tweets, pictures and commentary scraped from the internet. Recently, MIT pulled its popular training data set "80 million Tiny Images" built on WordNet® because it used racist, misogynistic, and other offensive terms to label photos. The database allegedly labeled thousands of images with offensive terms.⁵ ImageNet, another database built on WordNet, removed over 600,000 images.⁷

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In 2016, Microsoft® released "Tay," a teen talking AI chatbot.⁸ Tay, a machine-learning program, took its conversational cues from the World Wide Web to talk with users in real time. Within a very short time, Tay began using racist, sexist, anti-Semitic and xenophobic epithets. Microsoft took Tay offline within 24 hours. While excellent at technology, the Microsoft engineers did not have a sufficiently comprehensive grasp of Tay's operating environment and the full range of possible negative outcomes. Tay, Tiny Images, and ImageNet are cautionary risk management and corporate governance tales.

A single biased human will only affect a small number of people whereas a biased AI program (and its algorithms) can scale globally. There is a potential for truly historic class-action lawsuits. The scalability of AI, the increasing complexity of continuously learning algorithms, and the growth of commercial ecosystems may result in new classes of significant catastrophic aggregate losses. Algorithmic discrimination is just one example of AI's

5. History Channel Editors, *Automobile History*, 3, <[http](http://history.com)://history.com>.

6. 80 Million Tiny Images (mit.edu), <https://groups.csail.mit.edu/vision/TinyImages/#:~:text=80%20Million%20Tiny%20Images&text=It%20has%20been%20brought%20to,relie%20on%20nouns%20from%20WordNet.&text=We%20therefore%20have%20decided%20to%20formally%20withdraw%20the%20dataset>.

7. Trevor Paglen & Kate Crawford, *Leading online database to remove 600,000 images after art project reveals its racist bias*, THE ART NEWSPAPER, <https://www.theartnewspaper.com/2019/09/23/leading-online-database-to-remove-600000-images-after-art-project-reveals-its-racist-bias>.

8. Amy Kraft, *Microsoft shuts down AI chatbot after it turned into a Nazi*, CBS (Mar. 25, 2016), <https://www.cbsnews.com/news/microsoft-shuts-down-ai-chatbot-after-it-turned-into-racist-nazi>.



potential to be both a significant individual risk exposure as well as a significant catastrophic loss.

AI will affect every line of business. AI, however, will not magically emerge full-blown. Historically, the development and deployment of technology has always been idiosyncratic across countries, industries, products and time. Every country, industry, and product will explore, experiment, and deploy AI at different speeds. The US and China have the world's largest AI research and development budgets.⁹ Autonomous vehicles have proven to be more of a challenge than technologists anticipated but, on the other hand, AI models have now been trained that can identify with accuracy (better than humans can) who and what objects are in a video.

Companies looking to take advantage of AI's speed and efficiency may embed AI in many of their operations from recruitment and on-boarding to human services, operations, sales, marketing, customer service, language translation, logistics, satellite operations and fleet management. Companies like Amazon, Apple and Google will undoubtedly be more adept than most insurers at AI, which presents an underwriting challenge. Underwriters may also face another less obvious underwriting challenge. Companies might seek to maximize or exploit their AI investment by exploring ways to deploy AI in ways it was not intended to be used. What may have started as a challenging academic project at a university to create realistic, machine vision applications could fuel serious societal problems, such as misinformation campaigns.¹⁰

In addition to their customary underwriting and cyber security questions, underwriters will have to ask a number of specific AI questions, such as, is the output of the algorithm fair? Is it biased? Is it transparent? Is it explainable? Does the algorithm learn continuously? Is it autonomous? Does it make decisions? Does the potential insured have the resources to conduct system audits? What are documentation and data controls? How does the company monitor AI? What are the procedures to review third party vendors? Is the AI networked? If so, how? Does the company have diversity training?

Because insurers appreciate that AI is changing the world, they are also looking to transform their operations. They are contemplating or experimenting with use of AI for strategic planning, marketing, distribution, agent support, customer service, 30-second quoting, automated underwriting, knowledge management, policy issuance, real time claim adjustment and litigation management. With these goals in mind, insurers are exploring the use of telematics, sensors, drones, satellites, and public and private data sources to develop the data that makes this digital transformation possible.

Celebrating its centennial this year, Guy Carpenter works with insurers to help people, families, communities, and businesses enjoy the benefits of emerging technologies, such as the automobile and AI while also managing the growing pains associated with these technologies. We are grateful to our clients and partners for their support and look forward to the next 100 years. Guy Carpenter stands ready to help.

9. Statista, Leading countries by gross research and development (R&D) expenditure worldwide in 2021, <https://www.statista.com/statistics/732247/worldwide-research-and-development-gross-expenditure-top-countries/#:~:text=According%20to%20the%20forecast%20for,exceeding%20621%20billion%20U.S.%20dollars.>

10. BBC, Fake Obama created using AI tool to make phoney speeches, <https://www.bbc.com/news/av/technology-40598465>.

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