Contention 1 is Innovation

COURT CLOGS. Lawsuits filed means courts will clog.

Thousands of Gen Ai patent families in education.

WIPO 24 [WIPO, 2024, no quals, "Patent Landscape Report - Generative Artificial Intelligence (GenAI)"https://www.wipo.int/web-publications/patent-landscape-report-generative-artificial-intelligence-genai/en/5-patent-trends-in-genai-applications.html **DOA 3/13/25**]//ejs squad

GenAI is expected to have a huge impact across many industries as it finds its way into products, services and processes, becoming a technological enabler for content creation and productivity improvement. For example, a recent study by McKinsey estimates that GenAI could add between US$2.6 trillion and US$4.4 trillion annually across a wide range of industry use cases (McKinsey 2023). The firm believes that banking, high tech and life sciences are among the industries that could see the greatest impact from GenAI.

Based on our analysis of **GenAI patents**, we have identified the **applications** where **research activities** are focused on. The following list shows the 21 application areas identified, ranked according to the number of published patent families within the last decade. A short description of current **GenAI trends within** these applications including patent examples is included in the Appendices.

Software and other applications Life sciences Document management and publishing Business solutions Industry and manufacturing Transportation Security Telecommunications Personal devices Banking and finance Physical sciences and engineering **Education** Entertainment Arts and humanities Computing in Government Networks and smart cities Industrial property, law, social and behavioral sciences Cartography Military Energy management Agriculture

The largest application domain is the software category. However, to note, a large number of patent families cannot be assigned to a specific application and are instead included in the category software/other applications.

Patent families in the other categories are smaller in number, with life sciences in second place (5,346 patent families between 2014 and 2023) and document management and publishing (4,976) in third place (Figure 26). Other notable **applications with GenAI patent families ranging from around 2,000 to around 5,000 over the same period are business solutions, industry and**

manufacturing, transportation, security and telecommunications.

AI creates millions of patent claims that clog courts.

IPO '20 [IPO is is the official government body responsible for intellectual property rights in the UK and is an executive agency of the Department for Science, Innovation and Technology.,11-x-2020; ""; THE IPO OF THE FUTURE THINK TANK; https://www.inta.org/wp-content/uploads/public-files/perspectives/industry-research/Think-Tank-Report-The-Intellectual-Property-Office_IPO_of_the_Future.pdf] // ejs squad

AI-based patent application drafting systems have also recently emerged, substituting the work of patent attorneys. These systems have challenges to overcome before they can generate complete and accurate patent specifications, but their current capabilities and the rapid advancement of the technology indicates that this potential is not so far away. **Millions** of machine-**generated patents** could **clog the system**, **impacting** genuine **innovations** as well as competitiveness. On one hand**, companies** can **use** computer-**g**enerated claims to saturate the **technical** space around their own **patents to prevent competitors** from obtaining improvement patents in the same area. On the other hand, companies can also saturate the technical space around their competitors' patents to prevent the competitors from subsequently patenting improvements on the

competitors' own inventions. The challenges discussed above surrounding patenting digital inventions, including AI, may result in digital innovators looking for other ways to protect their ideas and obtaining some monopoly. How will this affect further innovation and the spread of knowledge to public? Is it time to start considering a different type of IPR with different tests for such inventions? Is it time to codify how AI's role is to be viewed in instances of infringement?

Court clog collapses effective governance---trust, innovation, and frivolous litigation

Deloitte '19 [Lori Scialabba, Bruce Chew, China Widener, and Isaac Jenkins; May 6; specialist executive at Deloitte Consulting LLP who served 33 years in the US federal government, retiring as the acting director of USCIS; former Harvard Business School professor and has twice served on the advisory board panel for the President's Federal Customer Service Awards; "Government backlog

reduction," https://www2.deloitte.com/us/en/insights/industry/public-sector/government-backlog-reduction.html] recut DSL

The true costs of backlogs Agencies often struggle to get the funding needed to fix their backlogs. After all, a backlog is an annoyance, but is it really worth the effort to solve it? The problem with this thinking is it ignores the **opportunity costs** of a backlog, which can be significant for individuals, communities, and businesses. For example, the US security clearance backlog, which peaked at over 700,000 cases in 2018,9 is a backlog with high opportunity costs. Each clearance case represents an individual who needs access to classified information to do the job right—but instead is unable to do so, or worse, is simply waiting for clearance to be employed.

According to a 2018 survey of cleared personnel, jobs that required clearance had an average salary of about US$93,000.10 The downstream effects of the backlog—in employment terms alone—are felt in lost labor market efficiency, forgone income, and reduced tax revenues (not to mention the mission impact of a shortage of qualified and cleared personnel). Many states face backlogs in everything from human services to examining criminal evidence. With some states facing a serious epidemic of opioid and related drug abuse, a drug-evidence testing backlog can mean delayed justice, which means police could release known drug dealers while they wait on evidence. That means more dealers and traffickers on the street, and more damage to communities.11 The effects on communities can exacerbate backlogs in other state systems—from children in foster care to state and local court systems to elder care. And government backlogs can reduce the attractiveness of **investment and innovation** in **entire economies**. **Backlogs in court systems**, for example, can **deter** economic investment by **increasing risk**, especially for foreign investors, and by enabling **anti-competitive behavior**, such as bogging down competitors in endless lawsuits or **violating agreements with impunity**.

Backlogs in developing economies in Asia, for example, are soaring, with downstream effects for justice, growth, and long-term development.12 They can harm developed economies too: By one estimate, Italy's justice backlog reduces GDP growth by 1 percent annually.13 Backlogs can also hinder **innovation**. Studies by the Center for the Protection of Intellectual Property have found that each year of patent delay_can reduce a startup's employment by 21 percent and sales growth by 28 percent over the five years after approval.14 Patent backlogs can decrease the payoff for R&D, reducing technology progress:15 For example, backlogs in three top patent offices led to more than US$10 billion in reduced global growth each year.16 Backlogs can also **reduce** citizen **satisfaction**, and in turn, **confidence in government**. **Trust** in government today **is at historic lows**, with only 18 percent of Americans surveyed saying they trust_government to do the right thing all or most of the time.17 For many citizens, case-processing systems are **where they encounter government**, whether at the registry for motor vehicles, in applying for benefits, or getting permits for their homes or_businesses. Long wait times and poor customer experience can further **erode confidence** in government—no one's desired outcome.

In 2005, two years after the creation of the Department of Homeland Security, these questions were cast into starker relief, and inflected in new ways, by another domestic

Services, and other parts of the US government

control, and policing.

Administrative integrity is an impact filter – otherwise, extinction.

Collier 21 [Dr. Stephen J; November; Professor of City & Regional Planning at the University of California, Berkeley, PhD in Anthropology from the University of California, Berkeley; Princeton, "The Government of Emergency: Vital Systems, Expertise, and the Politics of Security," p. xi-19] ejs squad

The evidence is clear: we live in an **increasingly vulnerable** world. Maps with isometric lines indicating flood zones tell us about the ever-growing likelihood that the places we live will be inundated in future hurricanes, torrential rains, or even high tides. Emergency exercises reveal that governmental response systems are not prepared to deal with future **disease** outbreaks. Stress tests isolate weak links in national and global **financial systems** that would be exposed in the event of a panic or an economic downturn. Network analyses point to alarming vulnerabilities to **accidents** or **attacks** (whether cyber or physical) on critical nodes of **power systems**. Models of **climate** change demonstrate the vulnerability of cities and critical infrastructures to heat waves, drought, floods, and landslides. This mountain of evidence points to a troubling contemporary reality: the **vulnerability** of the **vital systems** on which modern **life depends** to a **startling range** of potentially **catastrophic events**.1 Discussions of vulnerability and preparedness are often, understandably, caught up in the urgency of recent disasters and future threats: a looming hurricane; a critical system that is prone to failure; a virus that is a **single mutation away** from causing a **deadly pandemic**. And experts, policymakers, and scholars often search out the sources of vulnerability in relatively recent changes in the structure of our collective existence. Intensifying global flows of people, goods, and capital, they argue, make our world **increasingly interdependent** and therefore subject to **sudden disruptions** that **spread** through financial systems, electricity grids, information networks, or human bodies in rapid circulation and close proximity.2 But there is another way to think about our vulnerable world. Rather than taking vulnerability for granted as a category of understanding—and investigating how our vulnerability became so acute and pervasive—we can ask how it became possible to think about our world in this way in the first place. More specifically, we can ask how we came to think of our world in terms of a particular kind of vulnerability. When did government first become concerned with the disruption or breakdown of **life-sustaining** vital systems? For what purposes were the techniques that, today, generate such an extraordinary profusion of evidence about our vulnerability originally invented? How did norms such as resilience and preparedness become political obligations, to which policymakers and officials are held accountable? The Government of Emergency addresses these questions by turning to a period of American history in which this distinctive and now mostly taken-for- granted way of thinking about vulnerability was just taking shape. In the middle decades of the twentieth century, amid the Great Depression, World War II, and the Cold War, an array of technical experts and government officials developed a new understanding of the United States as a complex of vulnerable, vital systems. They also invented technical and administrative devices to **mitigate** the nation's **vulnerability**, as well as organizing a distinctive form of emergency government designed to prepare for

uncertain future events that might **catastrophically disrupt** these systems. In doing so, these experts and officials did not, of course, solve the problem of vulnerability. Quite the contrary, they defined vulnerability as a particular kind of problem with which today's experts, officials, policymakers, and emergency managers are still grappling. —— Our interest in these topics was initially sparked by the aftermath—at once troubling and disorienting—of the terrorist attacks of September 11, 2001. The most visible and controversial response by the federal government to these attacks was a series of aggressive security policies identified with the "war on terror." External security measures taken in the wake of the September 11 attacks included preemptive wars in Afghanistan and Iraq, drone strikes on suspected terrorist cells, and extrajudicial detentions, most notoriously in the prison complex at Guantanamo Bay. Domestically, new security measures included heightened border controls, domestic surveillance, and steps to protect large cities and transportation networks against attack. Many of these domestic measures were associated with a new federal agency, established soon after the attacks of 9/11, with an unfamiliar and Orwellian name: the Department of Homeland Security. At one level, these new security measures challenged familiar conceptions of security. Externally, the focus of military and intelligence organizations on terrorist groups and other nonstate actors seemed distinct from the traditional framework of national security, related to struggles among sovereign states. Meanwhile, new domestic policies pointed to an ominous "securitization" of civilian life, with totalitarian overtones. In another sense, however, these widely discussed elements of the "war on terror" fit relatively comfortably with familiar understandings of security. These measures sought to identify and interdict enemies of the United States, employing traditional means of intelligence, surveillance, military force, border

But beneath the surface of these highly visible and contested measures, a different formation of contemporary security was consolidating. Its contours could be glimpsed by perusing the plans and strategic statements on problems such as "national preparedness" and "critical infrastructure protection" issued by the president, the Department of Homeland Security, the Department of Health and Human in the years after 2001. The key norm articulated in these statements was not the deterrence, interdiction, capture, or defeat of an enemy. Rather, these statements laid out a strategy of **preparedness** for a **range** of **uncertain future events**—from natural **disasters** to **disease** outbreaks, **blackouts**, and **terrorist attacks**—that threatened to **disrupt** the **vital systems** that **make contemporary life possible**. They drew on forms of **specialized knowledge** and **expert assessment** that were quite different from those of domestic surveillance, foreign intelligence, and other approaches to understanding the plans and motivations of enemies. The evidence these documents adduced to assess vulnerability was produced by tools such as simulations of catastrophic events; scenario-based exercises to pinpoint gaps in preparedness plans; and evaluations of the "criticality" of particular facilities, such as ports, power plants, communication nodes, and transportation hubs. Finally, these statements of strategy proposed a distinctive set of preparedness measures: **stockpiling** critical supplies; **securing** vital facilities or creating **redundant** facilities; improving **coordination** among different parts of the federal

government, and among federal, state, and local governments; and, perhaps above all, conducting more exercises to test readiness. The sudden consolidation of these norms, knowledge practices, and security measures was puzzling. Where had they developed and been cultivated before coming together so rapidly in new plans and practices?

By the late 1950s, emergency government, which had previously focused on alleviating economic depression and mobilizing for war, had mutated into emergency preparedness for a

depression and war, their objective now shifted to preparing for a future war. Emergency government was thus becoming a matter of ongoing peacetime preparedness.

When we set out to write this book, we imagined that it would begin in the 1950s and move into

catastrophe: Hurricane Katrina, which inundated the city of New Orleans. Like the attacks of September 11, Katrina was followed by rancorous debate and finger pointing. Much of the blame fell on the Federal Emergency Management Agency (FEMA). FEMA had borne responsibility for disaster preparedness and response in the federal government for almost thirty years. But by 2005, it was incorporated into the new Department of Homeland Security, whose emphasis on counterterrorism, some observers charged, had left the agency unprepared for a massive natural disaster.3 FEMA's failure to organize a competent response to Katrina raised doubts about the federal government's ability to prepare for a range of other disasters, such as the outbreak of a novel and dangerous infectious disease, a particularly acute concern for public health officials in 2005 given the reemergence of avian flu in Asia, one year earlier. 4 The failed response to Katrina also focused attention on the "distributed" structure of preparedness in the United States, which required complex coordination among local, state, and federal governments. This structure,

too, had failed in spectacular fashion. Local governments proved poorly organized and ill equipped. State governments were unable to provide timely assistance. But amid the arguments about where the failure lay, and who was to blame, a basic diagnosis was universally accepted: the

government had been unprepared to deal with an event like Katrina and was obliged, in the future, to bolster preparedness, not only for natural disasters but also for a range of other future catastrophes. Thus, more questions: Where did this peculiar American structure of distributed preparedness come from? Why would an agency charged with anticipating terrorism also be responsible for natural disaster preparedness? And how had this unquestioned political responsibility—to prepare for events like Katrina—initially been established and entrusted to such a peculiar

and apparently precarious governmental arrangement? In a first stage of our research, we sought to address these questions by looking back to civil defense planning of the early Cold War.5 Cold War civil defense was in one sense quite different from contemporary emergency management. Its primary concern was not preparedness for natural disasters, pandemic disease, or terrorist attacks. Rather, civil defense focused on strengthening the preparedness of local governments, communities, and households for a nuclear attack on the United States.6 In another sense, however, the way civil defense planners identified problems and sought to address them was familiar: preparing to respond in the wake of a catastrophic event. Moreover, Cold War civil defense, particularly the Federal Civil Defense Administration (1950-1958), was a recognized

part of the landscape of postwar history for scholars of American emergency management, who have identified it as the source of our current way of thinking about and organizing for emergencies.7 But as our research proceeded, our attention was increasingly drawn to another history—adjacent to but distinct from the history of civil defense—that turned out to be more germane to our concerns. Initially, we encountered a forgotten federal government office, the Office of Emergency Preparedness, that in the 1960s was charged with addressing many of the problems that have become so urgent and visible at the beginning of the twenty-first century. 8 The central concern of this office was the vulnerability of vital systems, such as oil pipeline networks, electricity and communication grids, and systems of economic circulation. And it sought to develop methods for anticipating the effects of various kinds of events—terrorist attacks, economic shocks, industrial strikes—that might disrupt these systems, as well as techniques for planning and testing a governmental structure capable of rapid, coordinated response. Digging into the history of this office and its predecessors, we found ourselves on a track that ran parallel to the story of civil defense (see figure 0.1). It led us to the National Security Resources Board and the Office of Defense Mobilization, which were established not to carry out the now-familiar functions of emergency management but to prepare for military–industrial mobilization. In contrast to the well-studied history of civil defense, the activities of these organizations have been largely neglected in the scholarship on the history of emergency management and, indeed, in the broader scholarship on American political development in the middle of the twentieth century. And yet, from 1947 (when the National Security Resources Board was created by the National Security Act) to 1958 (when the Office of Defense Mobilization was combined with the Federal Civil Defense Administration), these were the organizations working on the central problem of emergency government: preparedness for a nuclear attack on the United States. As we show in the chapters that follow, experts and officials working in these now obscure offices shaped current understandings and practices related to the vulnerability of vital systems, preparedness for future catastrophes, and the organization of emergency government. Our research into the work of these mobilization planning

offices opened up, in turn, a deeper history, which connected the history of emergency management in the United States to very different kinds of emergencies: the Great Depression and World War II. During these earlier episodes, we found, experts and officials working in domains such as mobilization planning, target selection for air war, and national economic planning developed new kinds of knowledge about flows of resources through the nation's vital systems and their vulnerability to catastrophic disruption. These were also the circumstances in which

government reformers assembled the distinctive administrative and political mechanisms of American

emergency government, with its small, centralized planning offices (the ancestors of FEMA), its complex arrangements for distributed preparedness across agencies and governmental units, and its often-fraught accommodations between democratic norms, expert control, and strong executive authority to address crisis situations. Thus, in the unexpected settings of depression and world war, we encountered the now-familiar norms and forms of US emergency government taking shape.

the present, tracing how Cold War civil defense evolved into contemporary emergency management in its various guises of homeland security, pandemic preparedness, and natural disaster policy. But as this parallel history unfolded, the scope of our book shifted. What we had previously imagined would be the beginning of the story—nuclear pathways of American emergency government. Many of the practices and institutions of contemporary American emergency government emerged from little-studied offices such as the National Security Resources Board and the Office of Defense Mobilization. The history of these organizations points to largely unexplored genealogical connections between emergency government as we know it today and major midcentury episodes in the development of American political institutions. Credit: Janice Yamanaka-Lew. preparedness in the 1950s—became its endpoint. Our question changed as well. The book's central concern was no longer the process through which nuclear preparedness expanded into preparedness for a range of other emergencies in the decades after the 1950s—a histor

that largely remains to be written. Instead, we traced how the knowledge practices, administrative devices, and governmental mechanisms originally invented to manage the emergencies of economic depression and world war were redirected to preparedness for uncertain future events that threaten vital systems. This shift in empirical focus went hand in hand with a shift in, and

significant expansion of, the conceptual and historical problems with which we were grappling. In the United States and elsewhere, the problem of the vulnerability of vital systems to catastrophic disruption is coeval with—and is indeed a crucial element in—the history of industrial and urban modernity itself. Thus, the process through which system vulnerability became such a prevalent governmental concern, and such a dominant feature of our politics, can only be described as one dimension of the broader emergence of a mass industrial and metropolitan society in the United States during the first half of the twentieth century. It is also linked to a significant mutation in political institutions. In contending with the "emergencies" of the Great Depression, World War II, and the early Cold War—all of which were understood as existential crises that demanded exceptional government measures—political reformers created new mechanisms of expert rule and expanded executive power. Thus, in investigating the genealogy of system vulnerability, we also address the process through which, as political scientist Clinton Rossiter put it in

1949, US government was "adjusted in all its ramifications to the mounting stresses of a protean, outward-looking, industrial society."9 — As we completed this book, governments around the world were struggling to respond to a global crisis. In early 2020, the coronavirus outbreak that began in China was spreading rapidly. As the first wave of the pandemic arrived in the

United States, officials faced a daunting prospect: the onset of a deadly disease with no effective biomedical countermeasures at hand, and an immunologically naive population. Experts rushed to identify bottlenecks in health systems, such as shortages of masks, testing reagents, and medical personnel, that would limit the number of patients that could be treated. Policymakers argued about how to procure scarce materials and establish priorities for the allocation of limited resources. Local officials sought to identify essential functions—medical services, critical infrastructure, and the production and distribution of food, for example—whose operation would need to be secured as stay-at- home orders were imposed across the country. Epidemiologists

updated pandemic models to anticipate surges in cases in particular areas and to estimate the demand that such surges would make on health resources. Debates flared up about the distribution of responsibility between federal agencies and the president, and between the federal government and the states. As authorities sought to address multiplying breakdowns and

bottlenecks in health systems, a distant episode of American history came to public attention. In spring 2020, Democratic lawmakers and a range of experts and interest groups urged then-president Donald Trump to draw on the emergency powers of the Defense Production Act to organize a forceful federal response to the pandemic. This Act, passed in 1950, gave the president authority to manage national economic resources in order to mobilize the industrial economy, initially for the Korean War.10 By the late 1950s, mobilization planners had laid plans to use Defense Production Act powers to manage an array of other problems— including massive nationwide medical response—that would arise in the aftermath of a large-scale nuclear attack on the United States. These plans addressed many of the issues that health officials and policymakers would face, over half a century later, in spring 2020: ensuring adequate production capacity of essential medical supplies through government loans and production agreements; securing vital inputs to such production through priorities ratings and allocation controls; and managing the

distribution of scarce medical resources, including personnel, to meet a medical emergency unfolding across the country. The Trump administration made limited use of the Defense Production Act to procure items such as test kits and protective gear but was widely criticized for its unwillingness to employ it more expansively. "We're at war," proclaimed the former director of the

Defense Production Act program division at the Federal Emergency Management Agency, "and the enemy is called Covid. The question is do we have the guts that our grandfathers had to mobilize the economy of the United States against the enemy." 11 Upon taking office in January 2021, President Joseph Biden issued an executive order that outlined a broad use of the Defense Production Act's emergency authorities. Priorities ratings would bolster vaccine manufacturers' access to equipment such as filling pumps and filtration units required to ramp up production. Loans and purchase agreements would spur investment in domestic plants to manufacture surgical gloves, whose production in other countries had been constrained by shortages of a vital input:

nitrile butadiene rubber. Officials contemplated similar actions, such as issuing loans and purchase agreements, to expand the production of at-home coronavirus tests, N95 masks, and other critical supplies.12 As we show in this book, the powers of priorities ratings, allocation control, emergency loans, and purchase agreements are not the only elements of the government response to the Covid-19 pandemic that have roots in the emergencies of the mid-twentieth century. Indeed, many dimensions of the response can be traced back to attempts to manage national resources and to ensure the operation of vital systems during these prior emergencies. Perhaps like no other event in the last seventy years, the Covid-19 pandemic has thrust these

problems to the center of attention. But a range of current issues—most notably the intensifying disasters that will result from climate change—ensure that this largely neglected dimension of emergency government will be increasingly central to contemporary politics. ACKNOWLEDGMENTS This book would not have been possible without the intellectual engagement and support of innumerable friends, colleagues, collaborators, and family members. We are particularly grateful to Ben Anderson, Carlo Caduff, Craig Calhoun, David Collier, Ruth Berins Collier, Deborah Cowen, Savannah Cox, Tyler Curley, Myriam Dunn, Lyle Fearnley, Andreas Folkers, Nils Gilman, Kevin Grove, Anke Gruendel, Frédéric Keck, Chris Kelty, Clay Kerchoff, Eric Klinenberg, George

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INTRODUCTION

The New Normalcy

During the past twenty years we have substituted for the normalcy of the halcyon 1920s an almost unbroken series of emergencies: depression, defense, war, inflation, cold war. Indeed, emergency appears to have become the new

kind of normalcy. National emergencies tend to favor improvisation by government. Yet with all our improvising, our "putting out of fires," our apparent activation by events instead of deliberate activation of events, we have emerged with a discernible pattern of domestic and foreign policy and, most important, with an acceptance of the idea that government should consciously plan

a strategy for anticipating and meeting domestic and foreign emergencies at the operational level. — JAMES FESLER, SPEECH TO THE INDUSTRIAL COLL EGE OF THE ARMED FORCES, SEPTEMBER 4, 1952 In 1954, the United States' Industrial College of the Armed Forces (ICAF) published a massive multivolume tome, Emergency Management of the National Economy.1 The ICAF

volumes collected a series of lectures that had been delivered to military officers at the college, as well as a range of government documents that addressed ICAF's main concern: managing industrial mobilization for war. The fourth volume, dedicated to Principles of Administration, reproduced a lecture by political scientist James Fesler, a veteran of government reform during the New

Deal and of mobilization planning during World War II.2 Looking back on the previous two tumultuous decades, Fesler observed that the United States had emerged from an "unbroken series of emergencies"—" depression, defense, war, inflation, cold war"—with a "discernible pattern" of emergency government. Its hallmark was a new norm: "government should consciously plan a

strategy for anticipating and meeting domestic and foreign emergencies at the operational level." In the "new kind of normalcy" Fesler described, emergency government was no longer confined to exceptional situations. Rather, ongoing emergency preparedness had become a part of governmental routine. More than six decades later, it is taken for granted that government bears responsibility for continuously anticipating and preparing for emergencies. This assumption has been evident in efforts to assign blame and bolster readiness following disasters such as the terrorist attacks of September 11, 2001; Hurricanes Katrina and Sandy, and, most recently, the Covid-19 pandemic. It is noteworthy, then, that in 1952, when Fesler gave his lecture, this

governmental norm was neither established nor taken for granted. Rather, it was new and required explicit statement and elaboration. It is also noteworthy that Fesler's discussion addressed a set of problems and institutional contexts that seem distant from our contemporary understandings of emergency management. Today, government offices tasked with managing

emergencies are concerned with preparedness for events such as natural disasters, disease outbreaks, and terrorist attacks, as well as with response and recovery in the aftermath of such events. But in 1952, the object of emergency management was the national economy, and its central aim was military-industrial mobilization—marshaling raw materials, industrial facilities, and manpower to build the tanks, planes, munitions, and other supplies necessary for total war. In this sense, Fesler's speech points us to the specificity of the historical conjuncture during which new norms for managing emergencies were first articulated in the United States and were connected to forms of expert knowledge, administrative practices, and legal mechanisms. The topics addressed in Emergency Management of the National Economy suggest some of the issues that, in this now unfamiliar landscape, were initially clustered around emergency government: resource planning, economic controls, internal security, economic intelligence, air targeting, government reorganization, domestic vulnerability, and nonmilitary defense. And the government offices, commissions, and agencies whose work was either collected or discussed in the ICAF volumes—most long-since dissolved, and many virtually forgotten—provide a map of the institutional settings in which emergency government was addressed at this time. Among these were committees working on government reform and resource management during the New Deal; wartime and

postwar mobilization planning offices; air-targeting and strategic intelligence units in the military; and offices of civil defense and domestic preparedness of the early Cold War.3 If Emergency Management of the National Economy situates the history of American emergency government in relation to economic management and military-industrial mobilization during the Great

Depression and World War II, it also marks a point of inflection. In the early 1950s, emergency government was already in the process of becoming something different and, from our contemporary perspective, more familiar. In the foreword to the ICAF tome, another veteran of wartime mobilization planning, Arthur Flemming, described this new horizon of emergency government. At the time, Flemming was serving as director of the Office of Defense Mobilization (ODM). Created in 1950 to lead civilian mobilization planning for the Korean War, ODM had by 1953 become the most important domestic preparedness agency in the federal government. Surveying the landscape of the early Cold War, Flemming offered a grim assessment of the current world situation. The United States, he wrote, was in an "age of peril." The advent of long-range bombers and atomic weapons confronted national security strategists with the specter of a sudden "devastating attack on the continental United States." In the event of such a sudden attack, the United States would not have time to mobilize its "material and human resources" over the course of months or years, as it had in the prior two world wars. Rather, Flemming argued, the country would have to shift immediately to war footing and would be faced with managing the consequences of a crippling initial blow. Adequately preparing the nation for this eventuality could "save an untold number of human lives" and ensure that the United States could "continue a substantial portion

of our war production and production essential for the holding together of our civilian economy." 4 In light of these concerns about a devastating enemy attack, during the 1950s the civilian mobilization planning agencies turned their attention to a novel task. If earlier these agencies were concerned primarily with military-industrial production during a long war fought overseas,

then increasingly their focus shifted to preparedness planning to ensure the survival of the national population and recovery of the economy in the aftermath of a domestic catastrophe. It is indicative of this shift that, by the early 1960s, the Office of Defense Mobilization had evolved into the Office of Emergency Planning, which was in turn renamed the Office of Emergency Preparedness. In 1962, the director of this office, Edward McDermott, outlined the aims and means of emergency government as they had come to be understood by this time. Citing a draft executive order issued by President John F. Kennedy, McDermott reported that he had been charged with coordinating the "national preparedness program," whose goal was to maintain a "state of readiness with respect to all conditions of national emergency." This meant, first and foremost, maintaining an "emergency management organization" that would be prepared to "handle the myriad of resource and economic problems necessary to save lives and sustain survival and expedite recovery." Reviewing these "resource and economic problems"—related to electric power, transportation, communications, food, and medical care—McDermott pointed to the vast scope of his office's concern. "We are really talking about the fundamentals of life on this earth," he intoned, "the elemental problems of safeguarding the food we eat, the fuel we consume, the transportation to maintain a steady flow of commerce, an intricate telecommunications system

which will continue to function under all conditions, and perhaps most important, the foundation of constitutional government which underpins our way of life."5 In sum, the Office of Emergency Planning was charged with sustaining the very biological and associational life of the American population during a future emergency. In the decades since McDermott's speech, practices

for anticipating and managing emergencies have continued to evolve, and the organization of emergency government has been frequently reshuffled. But McDermott's 1962 description of the task of governmental preparedness for emergency is strikingly similar to contemporary understandings. Emergency preparedness continues to focus on reducing the vulnerability of vital systems in anticipation of a range of potentially catastrophic future events, and on preparing for life-saving response and recovery in their aftermath. Thus, the Federal Emergency Management Agency's 2015 National Preparedness Goal—which currently guides governmental preparedness for events ranging from terrorist attacks to hurricanes and pandemics—refers to a "secure and resilient Nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk." 6 The emphasis now, as in 1962, is on what the Department of Homeland Security's 2017 guidance on critical infrastructure protection refers to as "the essential services that underpin American society and serve as the backbone of our nation's economy, security, and health": "the power we use in our homes, the water we drink, the transportation that moves us . . . , and the communication systems we rely on."7 Today, as in the early 1960s, emergency preparedness aims to ensure governmental functions relating to "health and safety," "infrastructure systems," "hydration, feeding, and sheltering," that, in the wake of a future disaster, will be essential to "rapidly meeting basic human needs," "restoring basic services," "establishing a safe and secure environment," and "supporting the transition to recovery."8 And as has been true since the beginning of the postwar period, emergency government today is not an exception to the normalcy of the state. Rather, it encompasses the management of unfolding emergencies and ongoing preparedness for future emergency situations as permanent functions of normal government. A Genealogy of Emergency Government This book examines the formation of American emergency government in the middle decades of the twentieth century. It follows the process through which a governmental apparatus initially assembled to manage economic depression and industrial mobilization for war mutated into an apparatus of emergency preparedness for domestic catastrophe. The account presented in this book is a genealogy of emergency government that traces how now-familiar forms of knowledge, practices, and norms first came into

being.9 It is only relatively recently, we suggest, that we have come to understand and organize emergency government as a matter of reducing the vulnerability of vital systems, and it is only recently that preparedness for events that might disrupt these systems has become a basic obligation of government. This genealogical approach to the study of emergency government can

be usefully distinguished from histories of the field of disaster preparedness and emergency management, which follow the changing forms of knowledge and governance that have been applied to a certain class of phenomena—disasters. For example, in Acts of God, historian Ted Steinberg traces how the US government has understood and managed (or failed to manage) natural disasters such as floods, earthquakes, and storms, from the early days of the American republic to the present. 10 Scott Knowles, in The Disaster Experts, constructs what he calls a "disaster chronology" over roughly the same period, tracking how experts have made "the knowledge and control of disasters their special concern."11 In contrast to such historical studies of disaster and disaster management, a genealogical approach asks how a range of seemingly disparate phenomena, from nuclear attacks and economic shocks to hurricanes and disease outbreaks, have been constituted as common types of events that present similar kinds of problems. Thus, the title of this book—The Government of Emergency—does not refer to the way that a pregiven class of

events or situations has been governed. Rather, it refers to a form of political rationality, which we understand, following sociologist Nikolas Rose, as an "intellectual machinery or apparatus for rendering reality thinkable in such a way that it is amenable to political programming."12 As Rose suggests, political rationalities have both normative and epistemological dimensions. On

the one hand, a given political rationality entails specific assumptions about the "proper distribution of tasks between different authorities" and the "ideals or principles to which government should be addressed." Thus, it implies certain presumptions (however contested and unstable) about what government is, what it should do, and what its limits should be. On the other hand, a political rationality involves a distinct "style of reasoning," that is, a body of "intellectual techniques for rendering reality thinkable and practicable, and constituting domains that are amenable—or not amenable—to reformatory intervention." Importantly, a style of reasoning entails specific "conceptions of the objects to be governed," whether the national economy, the population,

or the vulnerable, vital systems on which the economy and the population depend.13 One strategy of genealogical research is to paint a "before and after" picture that aims, as Ian Hacking has put it, "to permanently fix in the mind of the reader the fact that some upheaval has occurred"—a momentous shift in ways of thinking and governing.14 Our account is framed by such a conceptual and political "upheaval," in which new objects, aims, and practices of government came into being over a relatively brief period. But we also present a detailed account of how this momentous shift unfolded. We focus on specific organizations and on historically situated actors as they took up existing ways of knowing and intervening, or invented new ones, to address

novel problems. 15 Through these often-mundane practices, a new political rationality—and indeed, we suggest, a new dimension of political modernity—took shape over the period spanning roughly from the Great Depression through the early Cold War. The first part of the book examines the period from the 1930s to the early 1940s, in which the federal government faced two

conditions of "national emergency": the Great Depression and World War II. During this period, emergency government largely involved economic interventions to ameliorate the Depression and to manage industrial production for total war. Chapter 1 follows the work of experts in a succession of domains—from city and regional planning to economic management, wartime mobilization, and air targeting—as they constituted vital systems as objects of systematic knowledge and as targets of intervention. Chapter 2 describes a parallel process through which government reformers invented administrative devices and organizational forms to address the economic emergencies of depression and war. It focuses in particular on how these reformers addressed

the tensions between liberal constitutionalism and crisis government by assembling what they called an "administrative machinery" to organize and prepare for emergency situations. The book's second part is situated in the years immediately after World War II, a period of heightening concern about the prospect of an enemy attack on the continental United States that would

cripple military-industrial production systems. Chapter 3 shows how civilian experts and military officers developed systematic knowledge about American economic and infrastructural vulnerability and devised practices and understandings that would constitute a new kind of expertise—and a new kind of expert, the "vulnerability specialist."16 Chapter 4 turns to the first efforts to develop techniques for reducing this vulnerability and preparing to manage the consequences of a massive attack. It examines postwar mobilization planning agencies, where experts and officials reoriented the existing institutions and practices of emergency government. If previously these institutions had focused on economic management of the unfolding emergencies of

Part III traces a further shift in American emergency government that took place

during the 1950s. As nuclear weapons and delivery systems grew increasingly powerful, mobilization planners deemphasized readiness to ramp up industrial production for a long war. Instead, they turned to the task of ensuring the continuous functioning of vital systems that would be required to **sustain human life**, economic activity, and governmental operations in the unprecedented conditions that would result from a thermo**nuclear attack**. Chapter 5 examines the practices of **"administrative readiness"** developed by mobilization planners to prepare for government operations in a future emergency, culminating with a description of Mobilization Plan D-Minus (1957)—the first plan for national emergency preparedness in the United States. Chapter 6 focuses on one dimension of such national preparedness planning: the management of resources such as food, medical supplies, and services that would be essential to the population's postattack survival. The chapter traces how mobilization planners used the new tool of computer simulation to envision and prepare for an unprecedented future event—a catastrophic nuclear attack

C2 Water Scarcity

The use of gen AI in education is high right now NEA ND[NEA, ND, "III. The Current State of Artificial Intelligence in Education", no author quals, https://www.nea.org/resource-library/artificial-intelligence-education/iii-current-state-artificial-intelligence-education]ejs squad

Nonetheless, **students and educators have started to embrace** artificial intelligence, particularly **generative AI**. A 2024 report by the Center for Democracy & Technology found that the percentage of K–12 teachers who reported using a generative AI tool for personal or school use jumped 32 percentage points, to 83 percent, between the 2022–2023 school year and 2023–2024. In the same study, **59 percent of teachers reported that they** are certain at least one of their students has **used generative AI for school** purposes. In higher education, **49 percent of students reported using generative AI** regularly as of September 2023, although only 22 percent of faculty reported this level of usage.

Gen AI only results in the use of more AI infrastructure

Voruganti 23[Kaladhar Voruganti, August 7, 2023, "What Generative AI Means for Data Centers", Senior Business Technologist, https://blog.equinix.com/blog/2023/08/07/what-generative-ai-means-for-data-centers/] ejs squad

he original prompt you put into the AI engine is highly important in delivering good results. Generative AI query response times can be slower (in the order of multiple seconds) compared to that of traditional AI queries (with sub-second response times) because of the extra processing and larger data sets. **Generative AI involves much larger AI training infrastructure and higher power consumption**, thus **requiring denser server racks and advanced cooling techniques.** In many use cases, subject matter experts can interact directly with generative AI systems instead of going through data scientists. Data scientists are still required for foundational model customization. Because of **the high computation and infrastructure requirements to create AI** models from scratch, companies are starting to share AI models through Model as a Service and open-source AI model marketplaces.

That's bad-they consume too much water University of Tulsa 24[The University of Tulsa, July 19, 2024, "Data centers draining resources in water-stressed communities", no author quals, https://utulsa.edu/news/data-centers-draining-resources-in-water-stressed-communities/#:~:text=Unfortunately%2C%20many%20data%20centers%20rely,thousands%20of%20households%20or%20farms.] ejs squad

The rapid growth of the technology industry and the increasing reliance on cloud computing and artificial intelligence have led to a boom in the construction of data centers across the United States. Electric vehicles, wind and solar energy, and the smart grid are particularly reliant on data centers to optimize energy utilization. These facilities house thousands of servers that require constant cooling to prevent overheating and ensure optimal performance. **Unfortunately**, many **data centers rely on water-intensive cooling systems that consume millions of gallons of** potable (**drinking**) **water annually**. **A single data center** can **consume[s] up to 5 million gallons of drinking water per day, enough to supply thousands of households** or farms. **The increasing use and training of AI models has further exacerbated the water consumption challenges faced by data centers.** Machine learning, particularly deep learning models, requires significant computational power, which generates a lot of heat. As a result, data centers housing these machine learning servers need even more cooling to maintain optimal performance and prevent overheating. Graphics processing units, which are commonly used to accelerate machine learning workloads, are known for their high energy consumption and heat generation.

Look to ChatGPT, a gen AI McNally 24[Paul McNally, April 3, 2024, "Critical

impact-ChatGPT consumes 500 ml of water for every 50 texts you send it", Paul McNally is the Founder of Develop Al, an innovative company that reports on AI, provides training and consulting services and builds AI tools. He is the Founder of podcasting company Develop Audio and the community radio non-profit Citizen Justice Network. He has received awards and recognition for his podcast Alibi and his influential book, The Street, that investigated corrupt cops and drug lords in Johannesburg. In 2016 he was a Visiting Nieman Fellow at Harvard.
https://www.dailymaverick.co.za/article/2024-04-03-critical-impact-chatgpt-consumes-500ml-of-water-for-every-50-texts-you-send-it/] ejs squad

Similarly, as we ramp up towards a world of constantly generating content with AI, we are being asked to consider the environmental cost of its production. According to a paper published late last year, it is estimated that **ChatGPT is thirsty for 500ml of fresh water to generate** between **[just] five** and 50 **prompts** or questions. The range varies depending on where its servers are located and the season. The estimate includes indirect water usage which is needed to cool power plants that supply the data centres with electricity. And, frankly, **this is only the beginning**… The big guys can't hide how much more water they now need. In this environmental report, Microsoft said that its **global water consumption spiked 34% from 2021 to 2022 (to over 6 billion litres)**. This is a sharp increase compared to previous years and researchers reckon this has to do with all its work with AI.

The situation only gets worse in the aff world as Sidoti and Park 25 explains[Pew Research Center, January 15, 2025, "About a quarter of U.S. teens have used ChatGPT for schoolwork – double the share in 2023",

https://www.pewresearch.org/short-reads/2025/01/15/about-a-quarter-of-us-teens-have-used-chatgpt-for-schoolwork-double-the-share-in-2023/#:~:text=The%20share%20of%20teens%20who,the%20chatbot%20in%20this%20way.] ejs squad '

The share of **teens** who say they **use[ing] ChatGPT for** their **school**work **has risen** to **26%**, **according to** a **Pew Research Center** survey of U.S. teens ages 13 to 17. That's up from 13% in 2023. Still, most teens (73%) have not used the chatbot in this way. **Teens' use of ChatGPT for schoolwork increased across demographic groups**. But certain groups stand out for using the chatbot in this way:

Firstly, genAI is only hurting wildfires, look at California, affirming will only make the situation worse. Tobin 25[Taylor Tobin, Jan 11, 2025, "ChatGPT Is Under Attack For Its Use Of Water — But How Does That Even Work?", Taylor Tobin is a Brooklyn-based food and lifestyle writer whose work can be seen in publications like Insider, Observer, Fairygodboss, and Apartment Therapy. She spends

most of her free time on some combination of bikes, books, and bourbon.https://www.huffpost.com/entry/how-does-chatgpt-use-water_l_6782a3d6e4b0788bdb62b2ba] ejs squad

AI platforms can't generate content without the help of massive data center servers. These centers "contain thousands of high-performance computer chips that process user queries," explained Daniel Kearney, the chief technology officer of Firmus Technologies, which focuses on creating sustainable operating solutions for AI companies. "Because the computers and chipsets that power servers are so densely packed, they generate an incredible amount of heat. Running complex AI applications like **ChatGPT requires immense amounts of computing power**, which generate lots of heat 24 hours a day," explained HP Newquist, an artificial intelligence historian and the author of "The Brain Makers: Genius, Ego, and Greed in the Quest for Machines That Think." To prevent servers from crashing, cooling systems are put in place to help regulate data center temperatures. And, in many cases, "water is used to physically cool AI servers," explained Mia Montoya Hammersley, an assistant professor specializing in environmental law and the director of the Environmental Justice Clinic at the Vermont Law and Graduate School. So how much water are we talking about here? "Many of these systems rely on water to absorb and dissipate the heat through cooling towers or evaporative cooling methods," Kearney told us. "For some large facilities, this can mean using millions of gallons of water per year."The current wildfires were caused in part by drought affecting much of Southern California. "**With California already experiencing an ongoing drought, the water necessary to fight these fires is further straining the state's water supply**," Montoya Hammersley said. **"Water is a finite resource, and cutting back on AI use will have direct impacts on the state's water availability and ability to respond to this climate disaster."**

Waddick 25 explains[Karissa Waddick, January 14, 2025, "How many homes have burned in the Los Angeles wildfires so far?", no author quals,

https://www.aol.com/many-homes-burned-los-angeles-175405693.html#:~:text=How%20many%20homes%20have%20burned%20in%20the%20Los%20Angeles%20wildfires%20so%20far%3F,-Karissa%20Waddick%2C%20USA&text=More%20than%2012%2C000%20homes%2C%20businesses,Los%20Angeles%20area%20last%20Tuesday.]ejs squad More than **12,000 homes**, businesses, schools and other structures **have been destroyed by** raging **wildfires** that began ripping **through** the Greater **L**os **A**ngeles area last Tuesday. Cal Fire said in an update Monday that a total of 40,300 acres have burned across multiple blazes including the Pacific Palisades fire west of Los Angeles, the Eaton Fire near Altadena and the Hurst fire near Sylmar. At least 24 people have died and more than **100,000 have been forced to flee their homes.**

Secondly, affirming is only going to make the scarcity situation worse

Gordon 24[Cindy Gordon, Feb 25, 2024, "AI Is Accelerating the Loss of Our Scarcest Natural Resource: Water",

Contributor. CEO, Innovation Leader Passionate about Modernizing via AI, https://www.forbes.com/sites/cindygordon/2024/02/25/ai-is-accelerating-the-loss-of-our-scarcest-natural-resource-water/] ejs squad

Water covers 70% of the Earth, and it is our most essential and important ingredient to survive—for all living things. However, freshwater—what we need to drink and irrigate our farms—is only 3% of the world's water, and over two-thirds of that is tucked away in frozen glaciers and unavailable for consumption. Up to 90% of some organisms' body weight comes from water. Did you know that 60% of an adult human body is water? It's nearly 80% of a baby's body. Each day, we must consume water to survive. An adult male needs about 3 liters (3.2 quarts) per day while an adult female needs about 2.2 liters (2.3 quarts) per day. As a result, some **1.1 billion people worldwide lack access to water**, and a total of **2.7 billion find water scarce for at least one month** of the year. Inadequate sanitation is also a problem for 2.4 billion people—they are exposed to diseases such as cholera and typhoid fever and other water-borne illnesses. Two million people, mostly children, die each year from diarrheal diseases alone. According to the United Nations Environmental Report, **nearly two-thirds of our world's population experiences severe water shortages** for at least one month a year, and by 2030, **this gap is predicted to become much worse,** with almost half of the world's population facing severe water stress. To avoid this fate, the report said, water use must be "'decoupled' from economic growth by developing policies and technologies to reduce or maintain consumption without compromising performance." The necessity for water is fundamental to our ability to live. However, we have a major problem, and it's accelerating. At the same time, our world is racing ahead to advance AI into every aspect of our world. With the rise of generative AI, companies have significantly raised their water usage, sparking concerns about the sustainability of such practices amid global freshwater scarcity and climate change challenges. Tech giants have significantly increased their water needs for cooling data centers **due to** the escalating demand for online services and **generative AI** products. AI server cooling consumes significant water, with data centers using cooling towers and air mechanisms to dissipate heat, causing up to 9 liters of water to evaporate per kWh of energy used.

Water scarcity only results in deaths United Nations ND finds that[United

Nations, No Date, "World Water Day Reminds Us of the Value of a Precious Resource", no author quals, https://www.un.org/en/academic-impact/world-water-day-reminds-us-value-precious-resource] ejs squad

3.5 million people die each year due to inadequate water supply, sanitation and hygiene.

C3: LAWs

Universities uniquely using AI for research now: Deloitte24

(Deloitte Insights, Tamara Askew, distinguished thought leader in the domain of Artificial Intelligence (AI) application within Higher Education. Roy Mathew principal with Deloitte Consulting LLP and leads the Higher Education Consulting practice, Tiffany Fishman a senior manager with the Deloitte Center for Government Insights. Danylle Kunkel Danylle Kunkel is a manager in Deloitte's Higher Education practice with over 20 years of experience, Bob Caron Bob Caron is a specialist leader in Deloitte's Higher Education practice and is a leader in Deloitte's AI for Higher Education team,, Sc.D.

United States10-25-24, "How higher education can realize the potential of Generative AI", https://www2.deloitte.com/us/en/insights/industry/public-sector/generative-ai-higher-education.html)//Beta Squad

" Automating individual tasks can help improve overall efficiency. **Leading research universities are increasingly looking to** automation tools to help with grant applications and administration, beginning with AI tools locating and sifting through available grant and funding opportunities to identify appropriate and likely prospects. Robotic process automation coupled with **generative AI** can complete the first draft of data entry on application forms, while intelligent optical character recognition can quickly decipher dense sections of award notices. This approach reduces the time and effort required for data entry, allowing principal investigators to focus on more strategic tasks. Adapting workflows to incorporate a suite of automation tools, each taking on the tasks to which they are best suited, can boost institutions' ability to accomplish their mission. Take accessibility, for example: Advancements in educational technology, particularly by incorporating gen AI applications, have the potential to improve accessibility for 20% of undergraduates and 11% of graduate students with a disability, while traditional modifications—tweaking systems not designed to accommodate exceptions—may not fully eliminate either existing barriers or those that become visible later.7 The transformative impact of generative AI on higher education, particularly through AI-based tutoring systems, is garnering recognition from significant educational bodies, including the US Department of Education.8 These advanced systems offer personalized, step-by-step guidance and feedback, enabling a tailored learning experience that adjusts to the unique needs of each student. Historically, educational models required students to conform to a standard method of instruction, which was not always effective for every individual. However, the advent of generative AI tools in education allows for a more inclusive approach where students can engage with material in a way that best suits their learning styles, significantly broadening the likelihood of academic success. Beyond individualized instruction, AI applications can enhance collaborative learning and empower educators to integrate teaching strategies informed by cognitive science. For many instructors, this will require a transition, a transition many are already making, shifting from the traditional lecture-and-listen model toward a more dynamic, interactive approach.9 Making education more accessible for diverse learning styles Supporting instructional excellence. Integrating advanced language models into learning systems can considerably facilitate the incorporation of Universal Design for Learning principles.10 These models help educators adapt course materials, assessments, and learning tasks to accommodate diverse student needs, thereby promoting a more inclusive learning environment. AI applications can assist in formulating course policies that offer students flexibility in demonstrating their learning, fostering intrinsic motivation, and developing self-assessment skills in various ways. Notwithstanding the potential benefits of AI implementation, apprehension is widespread among administrators, staff, and faculty.15 Concerns thus far have centered around job displacement, ethical challenges, and the breakneck pace of technological evolution. Staff fear job displacement, fueled by studies predicting substantial risks of automation in roles such as data management, student advising, and grading.16 This anxiety is compounded by media narratives and academic discourse that speculate on leaders turning to AI-based technologies to make staff positions redundant.17 Beyond the fear of job loss, AI use carries profound ethical and privacy implications. Integrating the technology involves handling vast amounts of data, including sensitive student information, which raises questions about data security and the risk of privacy breaches. The potential for inherent biases in AI algorithms could lead to discriminatory practices, underscoring the need for stringent ethical standards in AI deployments. Concurrently, the rapid pace of AI development highlights a troubling skills gap, with many staff members feeling ill-equipped to adapt to new technologies. This scenario exacerbates fears of obsolescence and underscores the challenges in maintaining ethical governance over AI, as it outstrips existing policies and guidelines (see "A framework for trustworthy AI"). Organizational transformations of this magnitude necessitate equally significant changes in habits and behaviors among faculty, staff, and students. This transition is not always straightforward, as seen in various initiatives aimed at digitizing operations, which often struggle with adoption due to a lack of consideration for user needs throughout the development process. Specifically, these projects frequently overlook users' real-world cognitive and behavioral patterns, leading to resistance and cognitive overload. The academic environment is dynamic and demanding, and introducing AI technologies into it can lead to cognitive overload, where too many new requirements cause users—whether faculty, staff, or students—to inadvertently skip essential steps or tasks. Leaders can also unwittingly foster resistance to change by not clearly communicating the rationale and benefits behind the adoption of new technologies. In higher education, with faculty and staff deeply entrenched in methods that have historically been successful for them, unclear communication about AI tools' benefits and workings may hinder their acceptance. Open and transparent communication that explains the transformative power of AI can help mitigate these concerns. This includes clearly articulating the goals and expected outcomes, and making these goals relevant and tangible for stakeholders. Leaders should not underestimate the power of inertia. Behavioral science suggests that individuals generally prefer the path of least resistance, adhering to familiar habits and practices. In the context of higher education, shifting from traditional methods to AI-driven approaches can seem daunting. As behavioral economist Richard Thaler suggests, making the transition as effortless as possible can significantly enhance adoption rates.18 Given the disruptions caused by AI integration in higher education, effective change management is crucial to navigate the transition smoothly and ethically. As AI reshapes job roles and operational paradigms, educational institutions must consider how to proactively manage these changes to mitigate employee fears and resistance. This entails not only keeping staff and faculty informed and involved in the transformation process but also providing necessary training and support to bridge the skills gap. A strategic change management approach should also focus on fostering a culture that views gen AI as an augmentative tool rather than a replacement. By prioritizing transparency and maintaining open lines of communication, leaders can cultivate a more resilient and adaptable educational environment (figure 4). Incorporating a "behavior-first change" strategy—integrating insights from anthropology, behavioral economics, neuroscience, and psychology—can significantly enhance an institution's change management approach.19 This understanding helps leaders navigate the complexities of human behavior, ensuring that strategies are not only theoretically sound but also practically effective in encouraging the adoption of new AI tools. By focusing on intrinsic motivators such as a sense of purpose, autonomy, and mastery, leaders can drive deeper engagement and acceptance of AI tools. These motivators encourage staff to embrace AI to enhance their capabilities and achieve greater professional fulfillment, rather than viewing the technology as a threat to their livelihoods. Prioritizing transparency and maintaining open lines of communication are essential in cultivating a more resilient and adaptable educational environment. By keeping all stakeholders, including faculty and students, informed and actively involved in the AI integration process, leaders can manage expectations and build trust—both critical to the successful adoption of new technologies. As AI redefines job roles and rewrites the rulebook on operational efficiency, colleges and universities may find themselves at a crossroads. To fully make traditional AI and gen AI work across all parts of the institution, leaders must not only navigate these turbulent changes but also champion them. This calls for a strategic, inclusive approach to change management that prepares the entire workforce for a new era of digitization and actively involves them in the journey. By understanding and addressing these behavioral and cognitive challenges, higher education institutions can enhance the successful adoption of AI technologies. This approach not only facilitates smoother transitions but also maximizes AI's potential benefits, creating more innovative and efficient educational environments. Create a narrative that resonates Leaders should aim to clearly articulate the expected outcomes of AI implementations and illustrate how these align with the institution's educational and research missions. This level of transparency is fundamental to mitigating concerns related to gen AI adoption. Leaders should explain how these technologies function, their implementation plans, and their potential practical impacts on various academic and administrative roles. Citing previous successful technological integrations can build confidence in the institution's ability to manage technological change and set realistic expectations for what new AI tools might achieve. Indeed, transparency is critical: Leaders should have open discussions about the strengths and weaknesses of specific tools being considered. This includes addressing the tools' technical capabilities, integration challenges, and potential risks, and how they compare **to** traditional methods. Stakeholders need a clear vision of how gen AI tools might specifically benefit academic work or administrative tasks. For instance, leaders can explain how adopting an **AI tool can automate routine data collection and analysis, enabling researchers to focus on complex analysis and interpretation.** Promote a culture of innovation. **Fostering a culture of innovation** is essential in enhancing stakeholder readiness. This involves promoting an open environment in which stakeholders are encouraged **to experiment with AI tools** and voice their ideas along with their concerns about particular applications. To cultivate this culture, leaders should visibly support AI initiatives, celebrate AI-driven achievements, and facilitate cross-departmental collaborations on AI projects. For example, empower faculty who are eager to adopt and integrate gen AI into their classrooms to pilot, test, and scale tools and approaches to the broader academic community.

Research Universities especially McDonald23

_(I Nora McDonald investigates the strategies people use to safeguard their privacy and design of ethical, secure technologies. Her research explores how people adapt their privacy practices and "threat models" in response to emergent vulnerabilities within dynamic surveillance and legal landscapes. She also examines how evolving data relations, such as those shaped by social media algorithms, influence self-perception, worldviews, and societal norms around surveillance and privacy. McDonald has authored over 40 peer-reviewed articles in leading HCI and social computing venues. Her work has received multiple Best Paper awards at prestigious conferences, including ACM CHI and CSCW "Generative artificial intelligence in higher education: Evidence from an analysis of institutional policies and guidelines - ScienceDirect," 2023, https://www.sciencedirect.com/science/article/pii/S2949882125000052#cebib0010]//Beta Squad

" The release of ChatGPT in November 2022 prompted a massive uptake of generative artificial intelligence (GenAI) across higher education institutions (HEIs). In response, HEIs focused on regulating its use, particularly among students, before shifting towards advocating for its productive integration within teaching and learning. Since then, many HEIs have increasingly provided policies and guidelines to direct GenAI. This paper presents an analysis of documents produced by **116 US universities classified as as high research activity** or R1 institutions providing a comprehensive examination of the advice and guidance offered by institutional stakeholders about GenAI. Through an extensive analysis, we found a majority of universities (N = 73, **63%) encourage the use of GenAI** with many offering detailed guidance for its use in the classroom (N = 48, 41%). Over half the institutions provided sample syllabi (N = 65, 56%) and half (N = 58, 50%) provided sample GenAI curriculum and activities that would help instructors integrate and leverage GenAI in their teaching. Notably, the majority of guidance focused on writing activities focused on writing, whereas references to code and STEM-related activities were infrequent, and often vague, even when mentioned (N = 58, 50%). Finally, more than half of institutions talked about the ethics of GenAI on a broad range of topics, including Diversity, Equity and Inclusion (DEI) (N = 60, 52%).

Based on our findings we caution that guidance for faculty can become burdensome as policies suggest or imply substantial revisions to existing pedagogical practices."

The expansion of university AI research has led to the development of LAWS.

D'Agostino, Susan [Writer for Inside Higher Ed]---. "Does Military AI Research at Universities Benefit Humanity?" *Inside Higher Ed | Higher Education News, Events and Jobs*, 2024, www.insidehigheredcom/news/tech-innovation/artificial-intelligence/2024/01/31/does-military-ai-research-universities?. Accessed 6 Mar. 2025. //ejs squad

The United States Army Futures Command is at work modernizing weapons and equipment and identifying, acquiring and developing next-generation military technologies. It is "the best example of our commitment to the future lethality of the force" and "probably one of the boldest reforms" the Army has pursued. Secretary of the Army (later Secretary of Defense) Mark Esper told Congress in 2018. The command makes its home not on an Army base but on the campus of the University of Texas at Austin. That choice was by design. "It's critical that we have access to talent," Esper said at the time. "Talent that can help us think about the future strategic environment, thinking in the 2030s, 2040s, because that will inform, in many ways, the steps we take with regard to material ... It's proximity to innovation. It's proximity to academia." UT Austin has a mission, too. It seeks to "transform lives for the benefit of society" and "to serve as a catalyst for positive change in Texas and beyond." These human-centered ideals echo mission statements crafted by universities around the country that also lend expertise to the Pentagon. To counter China's massive, asymmetric military advantage, **the United States plans to field** with**in** the next **two years**, **the Replicator Initiative—thousands of autonomous systems across land, air, sea, space and cyberspace.** Far from science fiction, Replicator's real-world autonomous weapons systems will deliver capabilities at "volume and velocity." "We are not taking our foot off the gas, and in fact we're accelerating," Deputy Defense Secretary Kathleen Hicks said in a speech last year. The Pentagon relies on contracts with private companies such as Lockheed Martin, Raytheon, General Dynamics, Boeing and Northrop Grumman to help develop, manufacture and supply advanced military technology such as fighter aircraft and missiles. But **universities outshine defense contractors in at least two areas—expertise and research capacity, according to Margaret O'Mara, the Scott and Dorothy Bullitt Chair of American History at the University of Washington. O'Mara's research connects the growth of America's high-tech sector with its political history. The U.S. government's "mighty" higher education investment "essentially makes universities agents of the state, where they help achieve what the government wants to see happen in science but particularly in new military and space technology," O'Mara said. "Some might call it a devil's bargain."** Nearly 50 universities help the United States government build nuclear weapons, according to the International Campaign to Abolish Nuclear Weapons (ICAN), winner of the 2017 Nobel Peace Prize. **Lucrative contracts** may **offer an incentive for overlooking moral quandaries** concerning weapons design and development, according to Alicia Sanders-Zakre, ICAN policy and research coordinator. Now, ICAN is concerned that the Defense Department may substitute artificial intelligence **for** human judgment in nuclear weapons use. Governments that offer significant funding to **universities** or academic researchers **who help develop weapons** "threaten the remit of independent and curiosity-driven research," a *Nature* editorial argued in 2018. "It breaks down the bonds of trust that connect scientists around the world and undermines the spirit of academic research." Not everyone sees the status quo in such stark terms. Faculty and students in Case Western Reserve University's military ethics program, for example, devote time and expertise to understanding the ethical use of emerging military technologies, among other objectives. In doing so, they seek to support "long-term humanitarian goals, such as preventing unjust wars, decreasing incidents of war crimes, genocide, human rights abuses, and other atrocities produced by the dehumanizing effects of armed conflict." Either way, much of the Defense Department's work—from managing weapons labs and training the next generation of weapons scientists—is classified for national security reasons. That makes gleaning information about university-military collaborations challenging, though not impossible. "Look at the budget and follow the money," Sanders-Zakre said. The 2024 Defense Department budget offers rationales for its spending, including for funding streams to universities. The department seeks to "keep our nation safe while delivering a combat credible Joint Force that is ***the most lethal*** [emphasis added], resilient, agile, **and responsive** in the world," according to Secretary of Defense Lloyd J. Austin III. **The U.S. Defense Department expects to spend $842 billion in 2024. (In contrast, the Education Department got $79.2 billion in the fiscal 2023 budget.) Defense funding is divided into three broad categories: operations and support (which accounts for nearly two-thirds of the budget); acquisition (which includes procurement, research, development, testing and evaluation and accounts for 37 percent of the budget); and infrastructure (which includes military construction and family housing and accounts for 2 percent of the budget). Higher education receives only a fraction of the defense budget, much from the acquisition category. But a fraction of hundreds of billions can be significant for individual universities or academic researchers.** UT Austin, for example, received a five-year, $65 million contract for serving as the Army Futures Command headquarters. In support of its "most lethal, resilient, agile, and responsive" goals, the Defense Department funds the highly competitive Multidisciplinary University Research Initiative (MURI) program. In this program, teams of university researchers "focus on [Defense Department]-specific hard science problems." For this and other university research initiatives, **the 2024 DOD** budget allocates $347.3 million. The institutional recipients of the 2024 MURI program have not yet been named. But in 2023, this initiative **awarded $220 million to** 31 teams at 61 U.S. academic institutions, or an average of $7.1 million per team. Also in 2023, the Defense Department, through its Defense University Research Instrumentation Program, awarded $161 million to 281 universities to purchase equipment supporting defense-relevant research. This program seeks **to foster** innovation leading to "unprecedented **military capabilities**" in next-generation wars, according to Bindu Nair, director of basic research in the Office of the Under Secretary of Defense for Research and Engineering. The University of South Florida College of Engineering, in announcing its (relatively modest) $5 million Defense Department grant to study AI models for the U.S. military, highlighted that the work would "benefit society at large." The work involves conducting research "related to AI and associated technology," including "recognizing legitimate targets." With this word choice, the work is cast as an academic exercise, not one with a potential human toll. (The computer science professor

referenced in the news release did not respond to a request for comment.) **The University of Dayton**'s poetically named Soaring Otter—**an $88 million Air Force award—provides research** and development "**to advance**, evaluate and mature **Air Force autonomous capabilities**," according to the university. In the military, "autonomous capabilities" could have applications in **l**ethal **a**utonomous **w**eapon**s**. But the institution's press statement is vague about whether the work would advance AI agents that are capable of making decisions to kill without human input. (The principal investigator at the university referenced in the press release did not respond to a request for comment.) "The [Defense Department] does not rule out any system ever," said Probasco, who is not involved with Soaring Otter. "But in considering any future autonomous or AI-enabled weapon … they put in place what, in the technical world, we call a risk-management process." When Texas A&M University's Engineering Experiment Station announced its lead on a five-year Defense Department applied hypersonics project valued at $100 million, it spoke of "advancing innovation" and "nurturing the next generation of researchers." The news release was opaque about whether the work would contribute to hypersonic weapons research. Hypersonic missiles, which fly faster than Mach 5, offer militaries a distinct advantage, as they can evade nearly all defense systems. "It doesn't matter what the threat is," General John Hyten, the former vice chairman of the U.S. Joint Chiefs of Staff, said of hypersonic missiles' significance, as reported in *Voice of America*. "If you can't see it, you can't defend against it." (The engineering professor referenced in the university press release did not respond to a request for comment.) Universities are not wrong when they suggest that DOD funding supports innovation, especially when the influx of cash amounts to billions. The modern internet, for example, was born from a project at the precursor to the Defense Advanced Research Projects Agency, or DARPA. Concerning the development of artificial intelligence, machine learning and autonomous systems, the U.S. government acknowledges its interest in defense applications. But it also observes that the research has applications in "fields as diverse as manufacturing, entertainment and education." Complex software systems underpin Defense Department operations, according to a Carnegie Mellon University press release announcing a renewed defense contract. The award, which was valued at $2.7 billionover five years, provides funds to operate the Software Engineering Institute. In the statement, J. Michael McQuade, **Carnegie Mellon**'s vice president for research, championed the institution as "a high-tech anchor" and the contract for "supporting jobs." Whether that **software could be applied to l**ethal **a**utonomous **w**eapons **s**ystems was unclear. Software can be susceptible to algorithmic bias based on race, disability and gender, which would be especially problematic if **targeting humans**. In 2019, Carnegie Mellon University president Farnam Jahanian, a computer scientist and entrepreneur, was asked whether he would endorse an autonomous weapon ban. The question was posed during a press conference with local media upon the expansion of Carnegie Mellon's collaboration with the Army's Artificial Intelligence Task Force. At that time, he declined to endorse a ban, which aligns with the position of the U.S. government. The Defense Department has dedicated time, attention and resources to support its understanding of responsible AI. The 47-page policy directive, "U.S. Department of Defense Responsible Artificial Intelligence Strategy and Implementation Pathway," for example, offers evidence of that. The department's 2012 autonomous weapons policy directive also "assigns responsibilities for developing and using autonomous and semi-autonomous functions in weapon systems" and "establishes guidelines designed to minimize the probability and consequences of failure" in those systems. Said differently, **the Pentagon can imagine circumstances under which l**ethal **a**utonomous **w**eapon**s** may be used. Some, including Probasco, agree. She, for example, "would much rather have a missile that's better at hitting its intended target than just hoping … 'we threw them as best we could.'" The Defense Department "has terrible, terrible incidents in our history where people made decisions that honestly break my heart," Probasco said. "But every time we get up, we try to get better, and we try to put in place rules and operating procedures and training and technologies that will prevent the harm but achieve the mission." But many universities that have accepted military funding appear to avoid conversations—nuanced or not—concerning whether campus research could contribute to destruction or death. UT Austin, for example, did not respond to a request for comment about its mission statement. Also, the Massachusetts Institute of Technology's AI Accelerator—funded with $15 million from the Air Force—does not post an email address for its director on its webpage. A staff member in the MIT media relations office said that the director was "traveling with a packed schedule" and needed to decline to speak. The university also did not respond to a subsequent request to be put in touch with any one of the other 25 team members at the AI Accelerator. "The vagueness works in the military's favor," Sanders-Zakre said. "Maybe university researchers believe—and maybe rightly so—that their research can have multiple applications and will not just be used for weapons. But that's why the Defense Department funds the work."

Academia is crucial.

Klare 23 [Michael T. Klare, Professor emeritus of peace and world-security studies @ Hampshire College1-30-2023, The Pentagon's Quest for Academic Intelligence: (AI), Nation, https://www.thenation.com/article/world/the-pentagons-quest-for-academic-intelligence-ai/, Willie T.]//ejs squad

Largely propelling this drive for **direct academic access** is the Pentagon's belief that superior command of AI will prove essential for success in **future conflicts**. "AI will transform all aspects of military affairs," the National Security Commission on Artificial Intelligence declared in its Final Report of February 2021. "In the future, warfare will pit algorithm against algorithm."

Algorithms—the computer programs that govern an **ever-expanding range** of civilian and military devices—do not roll off **industrial assembly lines** as do tanks, planes, and missiles. Rather, they are fashioned by computer **scientists at universities** and the innovative start-ups they have installed on **academia's periphery**. To gain access to these innovators and the **fruits of their labor**, the Army and Air Force have established operating units at several universities, including **MIT**, **Carnegie Mellon**, **Texas A&M**, and the **University of Texas at Austin**.

Prominent among these centers is the Air Force–MIT AI Accelerator, established in 2019 with $15 million in Air Force funding. The US military has, of course, long subsidized advanced weapons research at MIT's Lincoln Laboratory, an FFRDC located in Lexington, Mass. But the AI Accelerator is very different: It's located on MIT's main campus in Cambridge and involves active participation by Air Force personnel in joint projects with faculty and students. In this manner, the university states, "a multidisciplinary team of embedded officers and enlisted Airmen join MIT faculty, researchers, and students to tackle some of the most difficult challenges facing our nation and the Department of the Air Force" (emphasis added). Since when has it been necessary to "embed" serving military personnel on American university campuses?

LAW development alters state incentives, encouraging misunderstandings.

Maas '19 [Matthijs; August; PhD Fellow, Centre for International Law, Conflict and Crisis, University of Copenhagen; Melbourne Journal of International Law, "International Law Does Not Compute: Artificial Intelligence and the Development, Displacement or Destruction of the Global Legal Order," vol. 20] //ejs squad

Finally, there is a 'hard' version of the argument that AI will drive legal **destruction**. This is grounded in the idea that, especially at the international level, technological change can alter **core conditions** or operational assumptions, not just of specific international laws or provisions, but in the scaffolding of entire legal frameworks. This relates to a more general point: as Remco Zwetsloot and Allan Dafoe have pointed out, when we examine risks from AI, we implicitly or explicitly bucket problems as coming from either 'accident' or 'misuse'.153 However, they argue that this dichotomy should be expanded to also take stock of a 'structural perspective'.154 Rather than j ust examining how new technology can afford agents with new capabilities — that is, new opportunities for (mis)use — this perspective asks us to consider how the introduction of AI systems may **unwittingly** shape the environment and **incentives** (the '**structure**') in which **decision-makers** operate.155 As an example, they refer to the prominent historical interpretation of the origin of the First World War as at least partly deriving from the specific operational or logistical features of the contemporary European railroad system — features such as tight mobilisation schedules, which promoted or required rapid, all-or-nothing mass mobilisation decisions over more muted moves and which, therefore, paradoxically, reduced states' manoeuvre room and pitched the dominos of general war.156 In a like manner, certain use of AI could 'unintentionally' and **structurally shift** states' incentives — possibly creating **overlap between** offensive and defensive actions, thus driving **security dilemmas**; creating greater **uncertainty** or space for misunderstanding; or generally making the inter-state dynamic appear more like a **winner-take-all** dynamic — in ways that create opportunity for **conflict**, **escalation** and **crisis**.157

As such, the 'hard' argument for legal destruction holds that the deployment of AI capabilities may lead to a relative decline of the global legal system, as the capabilities afforded by these AI systems gradually shift the environment, **incentives**, or even values of key states. For instance, AI systems might strengthen the efficacy of more authoritarian states vis-a-vis more liberal ones.158 **accelerate** the current trend towards **state unilateralism**, or feed into the perceived 'backlash' against international law and **multilat**eralism. One rationale here is that **whatever benefits a state believed it previously secured through engagement in, or compliance with, international law (eg, security, domestic legitimacy, soft power or cooperation), if it now perceives (whether or not correctly) that it mi ght secure these goals unilaterally through application of AI, this may erode the broader legitimacy and regulatory capacity of international law. F or instance, governments might be tempted (and, perhaps, warranted) to believe that, in the near-term future, they might be able to achieve internal security through AI surveillance capabilities, domestic legitimacy through computational propaganda (rather than through publ ic adherence to human rights norms) or global soft power through predictive modelling of other states' negotiation strategies (rather than reciprocal engagement and compromise). Such prospects are particularly frightening** given that the **powerful states** — on whose (at times fickle) acquiescence much of the operation of, for instance, UN bodies, might currently depend — are also **leaders in** developing such AI capabilities.

All this is not to say that the prospect of unilateral AI power is the only force eroding international law's multilateralist 'hardware' (institutions) or 'software' (norms), nor that it is a decisive force or even that its effects might be irresistible or irreversible. Howeve r, in so far as we are seeing an erosion of the foundations of international law, AI may speed up that decline — with all that this entails.

IV CONCLUSION

Does international law compute? How could 'globally disruptive' AI affect the institutions, instruments and concepts of the global legal order? I have discussed ways in which applications of AI may drive legal development, disruption or displacement within the system of international law. Specifically, I have argued that while many of the **challenges** raised by AI could, in principle, be **accommodated** in the international law system through **legal development** features of the technology suggest that it will, in practice, be destructive to certain areas or instruments of international law. This ensures that there appears to be a large risk of practical erosion of certain international law structures as a result of practical and political difficulties introduced by AI systems.

Independently, autonomous systems make mediation impossible.

Leys '20 [Nathan; 2020; JD, Yale Law School; Yale Journal of International Law, "Autonomous Weapon Systems, International Crises, and Anticipatory Self-Defense," vol. 45 no. 21] //ejs squad

D. The "Battle of New Orleans" Problem: AWS and Disaggregated Command-and-Control 66

AWS' ability to fight when **disconnected** from their handlers is both a feature and a bug, at least when hostilities were once ongoing but have since ceased. Conceptually, this problem is not new. On January 8, 1815, British forces attacked American troops under the command of Andrew Jackson during the Battle of New Orleans.67 The clash occurred during peacetime; unbeknownst to the combatants, the United States and the United Kingdom had already signed the Treaty of Ghent, ending the War of 1812.68 Of course, Andrew Jackson did not have access to a satellite phone.69 The last two centuries have seen dramatic improvements in the "command-and-control" (**C2**) structures on which modern military commanders rely to collect information from, and relay orders to, troops in the field. But the modern c ommunications networks on which the **U**nited **S**tates, its allies, and its peer/near-peer competitors rely may well be targeted **early on** in a conflict.70 AWS will be especially **valuable** in **degraded** C2 environments; unlike Predator drones, for example, their ability to fight does not depend on the quality or even **existence** of a **satellite** uplink to an Air Force base in Nevada.71 In addition, **autonomy** may reduce the risk of **hacking**72 and the strain on C2 networks even in the best of times.73

DARPA's Collaborative Operations in Denied Environments (CODE) program illustrates concretely how AWS might function when the y cannot contact their human operators.74 CODE's purpose is "to design sophisticated software that will allow groups of drones to w ork in closely coordinated teams, even in places where the enemy has been able to deny American forces access to GPS and other satellite -based communications."75 Although CODE's purpose is not explicitly to develop fully

autonomous weapons, it does seek to leverage autonomy to **reduce** the need for direct **human control** of unmanned systems.76 The strategic and technical goals of CODE are a short step from realizing AWS that can function in denied environments.77

Now imagine if an AWS, severed from its C2 network by accident, attack, or design,78 were forced to decide whether to engage a nearby target.79 For example, MK 60 CAPTOR (encapsulated torpedo) mines "detect and classify submarines and release a modified torpedo" to attack enemy targets.80 If such an **autonomous** torpedo launcher, stationed in a crucial shipping lane during a **conflict** and cut off from **C2** before the declaration of a **ceasefire**, picked up an adversary's **warship** bearing down on it, such a weapon might—like Andrew Jackson's forces at New Orleans—decide to **attack** under the mistaken **assumption** that hostilities were **ongoing**. Such an attack might well **scuttle peace talks** and erase the **credibility** of one party's promise to **hold its fire**.

Automation escalates conflict.

Yu 24 [Jihoon Yu, MA in National Security Affairs from the US Naval Postgraduate School & PhD in Political Science from Syracuse University, 12-20-2024, The Strategic Implications of AI on Maritime Security, Real Clear Defense, https://www.realcleardefense.com/articles/2024/12/20/the_strategic_implications_of_ai_on_maritime_security_1079942.html, Willie T.] //ejs squad

Artificial Intelligence (AI) is **transforming the global security landscape**, and its impact on the maritime domain is **profound**. From enhancing surveillance to introducing new vulnerabilities, AI's role in maritime security offers significant opportunities and challenges. One of AI's most transformative contributions lies in improving situational awareness and surveillance. Traditional methods of monitoring vast oceanic spaces are labor-intensive and limited in scope, but AI-powered systems can analyze data from satellites, drones, and automatic identification systems (AIS) to detect patterns and anomalies. This capability enables the identification of "dark ships" involved in illicit activities such as smuggling or illegal fishing, allowing authorities to act proactively and efficiently.¶ In naval operations, AI is revolutionizing capabilities through the deployment of autonomous systems. Unmanned surface vessels and underwater drones can perform high-risk tasks like reconnaissance, mine detection, and surveillance, reducing risks to human crews. However, the use of AI in naval warfare raises strategic concerns. Autonomous systems could escalate conflicts if they **act unpredictably** or **misinterpret data**. The lack of international regulations governing AI-driven weapons further complicates the potential for conflict resolution and risk management in contested regions. If rival states deploy AI-enabled naval systems without coordination or transparency, the risk of **accidental confrontations** or **rapid escalations** in regions such as the **S**outh **C**hina **S**ea or the **Arctic** grows significantly. These strategic flashpoints, where **competing claims** and **heightened tensions** already exist, could see AI **amplifying instability** rather than mitigating it. Ports, as critical hubs of global trade, also stand to benefit from AI integration. Automated systems powered by AI can enhance cargo inspections, detect anomalies, and improve access control, bolstering security and reducing vulnerabilities to criminal or terrorist activities. Predictive analytics can identify patterns that signal threats, ensuring timely interventions. However, the increased reliance on digital systems introduces cybersecurity risks, a double-edged sword in the maritime domain. AI-driven cybersecurity tools can help detect and neutralize threats, but adversaries can also use AI to launch sophisticated attacks. Cyberattacks on ports or shipping systems could disrupt global trade, creating cascading economic and geopolitical effects.¶ AI's role in maritime warfare brings additional **strategic risks**. Autonomous systems and decision-making platforms could alter the nature of naval conflicts, making engagements **faster and less predictable**. This heightens the risk of escalation in **already tense regions**, such as the South China Sea. Misidentifications or unintended actions by AI systems could spark conflicts, and the absence of international agreements on the use of AI in military applications increases the potential for miscalculations. For example, an AI-powered naval drone could perceive a civilian or non-threatening vessel as hostile, prompting unnecessary or disproportionate responses. Such incidents could trigger a chain reaction in high-tension regions, potentially drawing major powers into conflict.¶ On a broader strategic level, AI is altering the balance of power in maritime security. Nations with advanced AI capabilities have a **distinct advantage**, as they can integrate sophisticated technologies into their maritime operations, creating a **technological gap** between themselves and less-developed states. This **disparity** could lead to a **concentration of power** among a few dominant nations, undermining collective maritime security efforts. Additionally, adversaries with access to AI capabilities, such as autonomous naval vessels or intelligent cyberattack platforms, could challenge the dominance of traditionally superior navies, leveling the playing field in asymmetric conflicts

Humans won't detect failures.

Klare 20 [Michael Klare, secretary for the Arms Control Association board of directors and a senior visiting fellow working on emerging technologies, April 2020, 'Skynet' Revisited: The Dangerous Allure of Nuclear Command Automation, Arms Control, https://www.armscontrol.org/act/2020-04/features/skynet-revisited-dangerous-allure-nuclear-command-automation, Willie T.] //ejs squad

An equal danger is what analysts call "**automation bias**," or the tendency for stressed-out decision-makers to trust the information and advice supplied by advanced computers rather than their own considered judgment. For example, a U.S. president, when informed of sensor data indicating an enemy nuclear attack and under pressure to make an immediate decision, might choose to accept the computer's advice to initiate a retaliatory strike rather than consider possible alternatives, such as with Petrov's courageous Cold War action. Given that AI data systems can be expected to gain ever more analytical capacity over the coming decades, "it is likely that humans making command

decisions will treat the AI system's suggestions as on a par with or **better** than those of human advisers," a 2018 RAND study noted. "This potentially unjustified trust presents new risks that must be considered."19 Compounding all these risks is the likelihood that China, Russia, and the United States will all install automated NC3 systems but without informing each other of the nature and status of these systems. Under these circumstances, it is possible to imagine a "flash war," roughly akin to a "flash crash" on Wall Street, that is triggered by the interaction of competing corporate investment algorithms. In such a scenario, the data assessment systems of each country could **misinterpret** signs of adversary moves and conclude an attack is imminent, leading other computers to order preparatory moves for a retaliatory strike, in turn prompting the similar moves on the other side, until both commence a rapid **escalatory cycle ending in nuclear catastrophe**.20

Extinction:

Grady **Means 21**, Former Policy Assistant to Vice President Nelson Rockefeller, Retired American Business Executive, MA in Economics and Engineering from Stanford University, 8/30/2021, "Biden Brings The World Closer To Nuclear War," https://thehill.com/opinion/white-house/569732-biden-brings-the-world-closer-to-nuclear-war //ejs squad

China has changed strategic direction and has been building its nuclear stockpile and delivery systems. China also has continued to develop **hypersonic weapons**, including stand-off "carrier killers," space weapons and cyber capabilities to blind opponents' strategic and conventional systems. **Russia** has been advertising (mostly for domestic consumption, but nonetheless worrying) its "unstoppable" delivery systems, and has a very capable nuclear stockpile and military. **Iran** will continue to move forward with building nuclear weapons. Pakistan and India both have significant nuclear capability in an increasingly unstable part of the world. Nuclear-armed North Korea is again assuming a more belligerent posture. Israel has a full nuclear triad (land, air, subs) to respond to existential aggression. The U.K. and France have significant nuclear deterrents. The world is a powder keg.

In Hollywood terms, today's capacity for nuclear holocaust is thousands of times greater than the era portrayed in the **Armageddon films** "On the Beach," "Fail Safe," or "Dr. Strangelove." There would not be anything left for "Mad Max." Climate disasters may be unfolding over the next hundred years. Nuclear disaster is unfolding now. COVID-19 has killed more Americans than the flu typically does. **Nuclear war could kill us all**. Our leaders must get their priorities straight.

Rebuttal:

A2 Innovation

Chatbots aren't the same as gen AI

Sharma 24 [Niketan Sharma (Niketan Sharma is the CTO of Nimble AppGenie, a prominent website and mobile app development company in the USA that is delivering excellence with a commitment to boosting business growth & maximizing customer satisfaction. He is a highly motivated individual who helps SMEs and startups grow in this dynamic market with the latest technology and innovation.), "Generative AI vs Conversational AI vs Chatbot", April 24, 2024, Nimble App Genie, https://www.nimbleappgenie.com/blogs/generative-ai-vs-conversational-ai-vs-chatbot/, Accessed 03/17/2025] //ejs squad

The difference between generative AI vs chatbot revolves around their core **functionalities and the sophistication of their tasks. Chatbots are primarily designed for interaction,** often **relying**

on simpler AI or scripted responses to conduct conversations with users. They are commonly employed in customer service roles to provide quick and efficient responses to common queries. Generative AI, in contrast, involves creating new and original content or data that did not previously exist, using advanced algorithms such as deep learning networks and GANs. This type of AI is not limited to textual interactions and is used across various fields for tasks such as **composing music, generating realistic images, writing stories, or even coding. While a chatbot might help in automating responses and managing customer interactions, generative AI has a broader scope**, focusing on creativity and the generation of new ideas and products, making it a powerful tool in fields requiring innovation and creative output.

It's worse for research.

Jennifer **Ouellette 24**, 3/06/2024, Senior reporter at Ars Technica and the founding director of the National Academy of Sciences' Science and Entertainment Exchange, Producing more but understanding less: The risks of AI for scientific research, DOA: 2/26/2025, https://arstechnica.com/science/2024/03/producing-more-but-understanding-less-the-risks-of-ai-for-scientific-research/)//ejs squad

Last month, **we witnessed the viral sensation of several egregiously bad AI-generated figures published in a peer-reviewed article in Frontiers**, a reputable scientific journal. Scientists on social media expressed equal parts shock and ridicule at the images, **one of which featured a rat with grotesquely large and bizarre genitals.**

As Ars Senior Health Reporter Beth Mole reported, looking closer only revealed more flaws, including the labels "dissilced," "Stemm cells," "iollotte sserotgomar," and "dck." Figure 2 was less graphic but equally mangled, rife with nonsense text and baffling images. Ditto for Figure 3, a collage of small circular images densely annotated with gibberish.

The paper has since been retracted, but that eye-popping **rat penis**image will remain indelibly imprinted on our collective consciousness. The incident reinforces a growing concern that**the increasing use of AI will make published scientific research less trustworthy, even as it increases productivity.** While the proliferation of errors is a valid concern, especially in the early days of AI tools like ChatGPT, two researchers argue in a new perspective published in the journal Nature that **AI** also **poses potential long-term epistemic risks to the practice of science.**

Molly Crockett is a psychologist at Princeton University who routinely collaborates with researchers from other disciplines in her research into how people learn and make decisions in social situations. Her co-author, Lisa Messeri, is an anthropologist at Yale University whose research focuses on science and technology studies (STS), analyzing the norms and consequences of scientific and technological communities as they forge new fields of knowledge and invention—like AI.
The original impetus for their new paper was a 2019 study published in the Proceedings of the National Academy of Sciences claiming that researchers could use machine learning to predict the replicability of studies based only on an analysis of their texts. Crockett and Messeri co-wrote a letter to the editor disputing that claim, but shortly thereafter, several more studies appeared, claiming that large language models could replace humans in psychological research. The pair realized this was a much bigger issue and decided to work together on an in-depth analysis of how scientists propose to use AI tools throughout the academic pipeline.

They came up with **four categories of visions for AI in science.** The first is AI as **Oracle, in which such tools can help researchers search, evaluate, and summarize** the vast**scientific literature, as well as generate novel hypotheses. The second is AI as Surrogate**, in which **AI tools generate surrogate data points**, perhaps even replacing human subjects. **The third is AI as Quant.** In the age of big data, AI tools can overcome the limits of human intellect by **analyzing vast and complex datasets.** Finally, there is **AI as Arbiter, relying on such tools to more efficiently evaluate the scientific merit and replicability of submitted papers, as well as assess**funding **proposals.**

Each category brings undeniable benefits in the form of increased productivity—but also certain risks. Crockett and Messeri particularly caution against three distinct **"illusions of understanding"** that may **arise from over-reliance on AI tools, which can exploit**

our cognitive limitations. For instance, **a scientist may use an AI tool to model a given phenomenon and believe they**, therefore, **understand that phenomenon more than they actually do** (an illusion of explanatory depth). **Or a team might think they are exploring all testable hypotheses when they are only really exploring those hypotheses that are testable using AI** (an illusion of exploratory breadth). Finally,**there is the illusion of objectivity: the belief that AI tools are truly objective and do not have biases or a point of view, unlike humans.**

The paper's tagline is "producing more while understanding less," and that is the central message the pair hopes to convey. "The goal of scientific knowledge is to understand the world and all of its complexity, diversity, and expansiveness," Messeri told Ars. "Our concern is that **even though we might be writing more and more papers, because they are constrained by what AI can and can't do**, in the end, **we're** really **only asking questions and producing a lot of papers that are within AI's capabilities."**

Neither Crockett nor Messeri are opposed to any use of AI tools by scientists. "It's genuinely useful in my research, and I expect to continue using it in my research," Crockett told Ars. Rather, they take a more agnostic approach. "It's not for me and Molly to say, 'This is what AI ought or ought not to be,'" Messeri said. "Instead, we're making observations of how AI is currently being positioned and then considering the realm of conversation we ought to have about the associated risks."

Ars spoke at length with Crockett and Messeri to learn more.

Ars Technica: You're taking more of an epistemological approach to AI tools, particularly with regard to how scientists envision using them. Why?

Molly Crockett: **There's quite a lot of discussion right now about errors that AI makes and how those kinds of errors and inaccuracies are bad for science.** We agree that they're very dangerous. Our paper is actually more concerned with the future of science, **when all of those errors have been engineered away and the AI tools work exactly as their creators intend them to. Do we still get ourselves into trouble?** Lisa and I think that **we do.** Usually, there's hype that AI can do a particular thing, and the critique is, no, it can't do that thing. Ours is a different argument. People say, "Look at all these things that AI could do." We respond with, "Great, let's imagine they can do those things. Is that still the world we want?"

I'm a scientist, and I have used AI in my work, and I'm really excited about its potential. At the same time, over the last several years, these tools have become more sophisticated and, in many cases, less interpretable to human users. So, I've been growing more and more uneasy about what the widespread adoption of these tools bodes for the future of science. Lisa's scholarship and the broader world of Science and Technology Studies (STS) offers helpful frameworks for scientists to talk about what makes us nervous about this moment that we're in. Neither of our respective fields alone can really offer the insight that I think we need in this moment.

Lisa Messeri: STS is a vibrant, small field that began in the 1960s and 1970s out of concern for the future of science. Some of the earliest work was in the shadow of World War II and nuclear deterrence. It was this moment when scientists recognized that they had social roles in the world, that they weren't just sitting in an ivory tower but that the scientific knowledge they had created—in this case, a nuclear bomb—actually affected millions of people's lives. So a group of interdisciplinary scholars coming from the sciences, engineering, anthropology, sociology, philosophy, and history decided that in order to aid in this project of understanding science's impact on the world, we needed a set of tools and methods that can answer these questions.

In order to do so, we need to make a stunning claim: **Science is a human process and a human practice.** This has historically been misinterpreted. The discipline of STS has always walked a very tricky line because its goal is not to discredit science. As soon as you say that science is human, some people think it's a claim that science therefore isn't authoritative. That's not at all what STS is trying to do. It's saying instead that accepting the reality of the fact that **humans create science in social and cultural institutions might be the path toward a better, more robust, more authoritative, and more trustworthy science.** What robust science do we get if we take that radically different way of thinking about science in hand?

Ars Technica: I'd like to walk through each category in your taxonomy of how AI might be used by scientists. What are the good things that could come from each one, and what are the associated risks? Let's start with AI as Oracle.

Lisa Messeri: **AI as Oracle** is any application in which you **take a huge corpus of knowledge and from it get a set of discrete concrete answers or proposals.** It's a response to the overwhelming production of scientific knowledge: tools that can objectively and efficiently search, evaluate, and summarize scientific literature and also generate new hypotheses. There's an infinite amount of knowledge to be absorbed, and it only grows every day. Wouldn't it be nice if you could take an AI tool, train it on the existing corpus of published scientific literature, and then ask it to summarize everything, produce your literature review, identify what questions remain to be asked, or take all of the known findings in one subfield and extrapolate where these lead to?

The vision is seductive. It saves time, it's efficient, it will make us more productive. The main risk is that **it filters all these diverse questions through one narrow passage point, which is the AI tool.** There are studies where **teams were given**

diverse datasets or given a diverse set of literature and asked to determine what is significant about this literature. **Depending on who you are, what questions you're asking, and what research questions you're interested in, you'll have a different answer.** That, in turn,**raises different questions you might ask of the literature.** If you don't have a single passage point through which you're filtering existing literature, you have a much wider base that you're building in terms of potential future projects. **If everything starts going through the same oracle to say what is or isn't in the literature, you automatically have a narrowing at the bottom.**

Many **AI tools reawaken the myth that there can be an objective standpoint-free science in the form of the "objective" AI.** But these AI tools don't come from nowhere. They're not a view from nowhere. They're a view from a very particular somewhere. And that**somewhere embeds the standpoint of those who create these AI tools: a very narrow set of disciplinary expertise**—computer scientists, machine learning experts. **Any knowledge we ask from these tools is reinforcing that single standpoint**, but it's pretending as if that standpoint doesn't exist.

Molly Crockett: I think every scientist has had the experience of being in a journal club where everyone has read the same paper and somebody else says something that you hadn't thought of. "Oh yeah, I totally missed that. Oh, that's a cool idea; that didn't occur to me." That's **the power of doing science in a community with diverse ways of thinking about the world.** My worry about **AI as Oracle** is that **we lose that diversity that makes science stronger. There are now studies showing** that on many different definitions of diversity, **more diverse teams produce science that is more robust**, that is **more impactful**, that is **more innovative.** This makes the retreat back to the myth of the singular objective knower all the more troubling.

That said, I have occasionally used AI-assisted literature search tools that turned up papers relevant to my project that I hadn't found. That was genuinely useful. AI as Oracle is problematic when it's used to narrow or reduce, but we hope people will think about use cases that might go in the opposite direction. The vision is more, not less—broader, not narrower.

GAI causes fake and misinformed research---they erode trust, cause investor pullout, and misguide policies. Prefer, their evidence is about checking cognitive bias, not misinformation.

PYMNTS 24 . PYMNTS is a recognized global leader for data, news and insights on innovation in payments and the platforms powering the connected economy, “AI-Generated Junk Science Research a Growing Problem, Experts Say | PYMNTS.com.” PYMNTS.com, 10 Sept. 2024, www.pymnts.com/news/artificial-intelligence/2024/ai-generated-junk-science-research-growing-problem-experts-say/. Accessed 17 Feb. 2025. AP //ejs squad

A surge of artificial intelligence-**generated fake research papers is permeating academic search engines**like Google Scholar, potentially **eroding public trust in scientific findings and derailing product development** across industries that rely on cutting-edge research. A study from Harvard Kennedy School Misinformation Review uncovered an academic research trend, first reported by Newsweek. The researchers identified 139 papers suspected of being generated by AI tools, with more than half focused on topics including health, environmental issues and computing technology. “**Large language models** (LLMs) **generate results based on** a probability **skewed** to the **data** on which the foundation model has been trained,” Sid Rao, CEO and co-founder of AI company Positron Networks, told PYMNTS. “This can result in biases in the text that have no relation to the scientific method used to conceive the paper, as **the** foundation **model is not required to follow a rigorous, fact-based process**.” “[T]he public release of ChatGPT in 2022, together with the way Google Scholar works, has increased the likelihood of lay people (e.g., media, politicians, patients, students) coming across questionable (or even entirely GPT-fabricated) papers and other problematic research findings,” wrote the paper’s authors**. This** flood of fabricated studies **poses risks to companies investing in research and development**. It could **lead to misguided product launches and wasted resources. It** also **threatens to undermine public trust in science** and the reliability of evidence-based decision-making. Eroding Trust and R&D Risks The consequences of this trend could be far-reaching, affecting not just academic circles but also consumer trust in scientific claims. “Fake research is a cancer to consumer trust,” Andy Stapleton, an AI education YouTuber with over 250,000 subscribers, told PYMNTS. “Once people realize that the ‘science-backed’ label can be bought or fabricated, they’ll start treating real research like snake oil. It’s a one-way ticket to a world where facts are optional and trust in

legitimate innovation takes a nosedive. Consumers will stop believing any company that claims to have science on their side." Rao said AI hallucinations produce inaccurate results and subtly generate erroneous content. For example, a paper could present the correct conclusion but still have unreferenced or subjective supporting statements. "Even at **a 1%** error or **hallucination rate**, these two problems would fundamentally **erode trust in scientific research"** Rao said. "We have already seen this behavior in psychiatric telemedicine chatbots that have accidentally told patients to harm themselves." The implications for research and development investments are significant. "AI-generated papers are a huge liability," Stapleton explained. "**If investors can't tell what's real and what's algorithmic fluff, they'll start pulling back. R&D** is already risky enough — adding a layer of uncertainty from questionable AI-driven publications makes it even worse. You're not just losing credibility; you're bleeding money because bad data leads to bad decisions." Real-World Consequences The impact of fake papers on business regulations could also be severe. "Unreliable studies muddy the waters for regulators," Stapleton said. "If the science behind a product is shaky, **lawmakers will** either **clamp down with over-regulat**ion to protect consumers **or** worse, they'll **make bad policies based on false data**. Either way, businesses get stuck in a mess of red tape and uncertainty. The bottom line? Bad studies lead to bad laws, which is **a death sentence for innovation**." Rao warned that **regulators might** respond with overly broad restrictions, potentially **ban**ning **AI use in** medical **research altogether**, despite the technology's applications in areas like forecasting and data analysis. "Worse yet, in critical environments such as medicine, healthcare, civil engineering or material sciences, faulty papers' negative real-world and material consequences will potentially **shut[ing] down** legitimate avenues of **scientific research**," he added.

GAI steals copyrighted data, causing litigation.

Dzuong et al 24 Jocelyn Dzuong, a master's student in the Knight Foundation School of Computing and Information Sciences at Florida International University, Zichong Wang, a third-year Ph.D. candidate in the Department of Computer Science at Florida International University, Wenbin Zhang, an Assistant Professor in the Knight Foundation School of Computing & Information Sciences at Florida International University, 3-31-2024, "Uncertain Boundaries: Multidisciplinary Approaches to Copyright Issues in Generative AI", arXiv.org, https://arxiv.org/abs/2404.08221 //ejs squad

In the rapidly evolving landscape of generative artificial intelligence (AI), the in**creasingly pertinent issue of copyright infringement arises as AI advances to generate content from scraped copyrighted data,** prompting questions about ownership and protection that impact professionals across various careers. With this in mind, this survey provides an extensive examination of copyright infringement as it pertains to generative AI, aiming to stay abreast of the latest developments and open problems. Specifically, it will first outline methods of detecting copyright infringement in mediums such as text, image, and video. Next, it will delve an exploration of existing techniques aimed at safeguarding copyrighted works from generative models. Furthermore, this survey will discuss resources and tools for users to evaluate copyright violations. Finally, insights into ongoing regulations and proposals for AI will be explored and compared. Through combining these disciplines, the implications of AI-driven content and copyright are thoroughly illustrated and brought into question. In the swiftly progressing realm of generative artificial intelligence (AI), the pressing concern of copyright infringement emerges prominently. As AI technologies continue to autonomously generate content from copyrighted data, inquiries about ownership and safeguarding rights surface, reverberating across diverse professional domains. This escalating trend raises critical discussions surrounding ethical, legal, and socio-economic implications, necessitating nuanced exploration and strategic interventions to navigate this Figure 1: Actual screenshot from Dune (2021) versus its Midjourney-generated counterpart evolving landscape effectively. For instance, in July 2023 a group of novelists collectively sued OpenAI for alleged usage of their books to train their models and output similar content to the novelists' prose [117]. Moreover, in December 2023 **The New York Times filed a lawsuit against OpenAI and Microsoft, alleging copyright infringement by having** its articles scraped without permission to train their generative models[118]. More recently, Marcus and Southen revealed how generative models such as Midjourney and OpenAI's Chat GPT-4 produced outputs strongly reminiscent of scenes from copyrighted films and shows[82, 124]. As a concrete example, Figure 1 illustrates how a prompt from Southen resulted in an output resembling a shot from the trailer of Dune (2021). Notably, Midjourney's terms of service [87] highlight that users assume liability when requesting the

model to generate content featuring copyrighted trademarks. This delegation of responsibility not only places the burden of infringement on users, but also diverts accountability from Midjourney's developers, who have openly admitted to using copyrighted trademarks without authorization [103]. In light of these developments, this survey aims to delve into the complex interplay between generative AI and protecting intellectual property (IP). Through synthesizing existing methods and legal analyses, we provide a comprehensive overview of the current landscape surrounding copyright in generative AI. To the best of our knowledge, this work presents the first thorough study on robust and applicable solutions to copyright issues in generative AI, which also combines contextual legal analysis for future consideration. The challenges and opportunities inherent in this burgeoning field offer insights that can inform policymakers, practitioners, and researchers alike when developing generative AI. Our main contributions are: i) A detailed examination of the most advanced methods for detecting AI-generated copyright violations across various mediums such as text, image, and video, establishing itself as an invaluable resource for both researchers and practitioners in the field. ii) Innovative strategies designed to safeguard copyrights within the AI sphere, highlighting cutting-edge techniques like watermarking, fingerprinting, and machine unlearning, contributing to the protection of IP. iii) A comprehensive array of tools and resources for assessing copyright violations, including extensive datasets, search engine capabilities, and metrics quantifying infringement. iv) An in-depth analysis of the regulatory framework surrounding generative AI, navigating through current international copyright laws and proposing solutions to tackle the emerging challenges in generative AI.

Even a perceived risk of litigation kills innovation.

Abby **Rives 22**. IP counsel at Engine, a D.C.-based policy, advocacy and research organization supporting startups. "Copyright Law & Startup Innovation: Policies That Matter and Where They May be Headed". Medium.https://engineadvocacyfoundation.medium.com/copyright-law-startup-innovation-policies-that-matter-and-where-they-may-be-headed-dea034904e25. accessed 7-4-2024 //ejs squad

Startups need **balanced, certain copyright**frameworks. Well-tailored laws that focus on enforcement of legitimate rights can support innovation. But it is too easy for those frameworks to get **out of whack** and **become imbalanced**, which we've seen time and again. For example, right now the law allows bogus infringement allegations to dictate that non-infringing content is (routinely) removed from the Internet. **Uncertainty** over what copyright law permits, coupled with **high litigation costs**,**slows startups** down and has even forced some out of business. **And the risk of a startup being sued for something a user does — and something the startup knows nothing about — alone can scare away investors.**

But what does balanced, **innovation-friendly** copyright policy look like? And how does this play out in today's policy debates? Here are just a few examples:

Fair use and interoperability: Some big companies would like to **expand the universe** of what software is protected by copyright and which development activities constitute infringement. If that happened, it would prevent startups from using **fundamental software developmenttools**, expose them to new **litigation risks**, and make it harder to launch and compete. But after a decade of litigation, the Supreme Court recently confirmed that developers can use software interfaces — known as application programming interfaces (APIs) — without infringing copyright. The Court held that **reimplementing APIs**, which creates**interoperability and compatibility** between computer programs, is a **fair use** under copyright law.

Intermediary liability and the ability to host user-generated content: Scores of startups engage with user content — helping artists connect with fans, providing e-commerce platforms, hosting podcasts, or offering **basic Internet infrastructure**. These companies, and the creators and small businesses that depend on the Internet, interact with the copyright system every day. And they **rely on balanced laws**that allow the startups to **resolve allegations of infringement** without scrutinizing every post, upload, and comment for **potential copyright violations**. Some countries have started to

replace those laws, instead moving to complex and expensive regimes that would force Internet companies to purchase **expensive** and imperfect upload filters,**remove more non-infringing content**, and **negotiate licenses** with big organizations that own a lot of copyrights. That is all do-able for big Internet platforms, but it will put startups at a substantial disadvantage. Yet similar ideas are being floated in the U.S. — where policymakers have proposed **changes to copyright law** (and trademark law).

Ancillary copyright and link taxes: Countries around the world have adopted or considered new copyright-like laws that would require websites to pay **licensing fees** or**face lawsuits** whenever they — or their users — link to a news article or quote the headline. These proposals, positioned as a solution to problems facing local media, have so far failed to deliver those benefits, but they carry substantial **unintended consequences.** Linking to news articles is something many startups and innovators — from media to edtech — rely on. But engaging with information and current events, **which** is central to public discourse and free speech, requires being able to link to and quote the news. Using copyright-like law to **restrict** that engagement would **hinder innovation** and the creation and **exchange of ideas online.**

Intersection of copyright and artificial intelligence: Startups and other companies developing AI technology have to input a lot of data into their systems, **ingesting content to train**, tune, and test new AI. As countries around the world review how intellectual property law applies to emerging AI, some are asking how copyright law should account for this ingesting of information, data, and content. But redefining copyright infringement to coverthese uses of content to train AI could substantially **hamper innovation.**

Researchers don't want AI in studies -- prefer -- most recent and cites actual researchers

Wiggers 3/5 [Kyle Wiggers is a senior reporter at TechCrunch with a special interest in artificial intelligence. His writing has appeared in VentureBeat and Digital Trends, as well as a range of gadget blogs including Android Police, Android Authority, Droid-Life, and XDA-Developers. Experts don't think AI is ready to be a 'co-scientist', TechCrunch, https://techcrunch.com/2025/03/05/experts-dont-think-ai-is-ready-to-be-a-co-scientist/, 3.5.25] doa: 3.7.25 //ejs squad

Last month, Google announced the "AI co-scientist," an AI the company said was designed to aid scientists in creating hypotheses and research plans. **Google pitched it as a way to uncover new knowledge, but experts think it — and tools like it — fall well short of PR promises.** "This preliminary tool, while interesting, doesn't seem likely to be seriously used**," Sara Beery, a computer vision researcher at MIT, told TechCrunch. "I'm not sure that there is demand for this type of hypothesis-generation system from the scientific community."** Google is the latest tech giant to advance the notion that AI will dramatically speed up scientific research someday, particularly in literature-dense areas such as biomedicine. In an essay earlier this year, **OpenAI CEO Sam Altman said that "superintelligent" AI tools could "massively accelerate scientific discovery and innovation." Similarly, Anthropic CEO Dario Amodei has boldly predicted that AI could help formulate cures for most cancers. But many researchers don't consider AI today to be especially useful in guiding the scientific process.** Applications like Google's **AI co-scientist**

appear to be more hype than anything, they say, unsupported by empirical data. For example, in its blog post describing the AI co-scientist, Google said the tool had already demonstrated potential in areas such as drug repurposing for acute myeloid leukemia, a type of blood cancer that affects bone marrow. **Yet the results are so vague that "no legitimate scientist would take [them] seriously,"** said Favia Dubyk, a pathologist affiliated with Northwest Medical Center-Tucson in Arizona. **"This could be used as a good starting point for researchers, but […] the lack of detail is worrisome and doesn't lend me to trust it,"** Dubyk told TechCrunch. "The lack of information provided makes it really hard to understand if this can truly be helpful." It's not the first time Google has been criticized by the scientific community for trumpeting a supposed AI breakthrough without providing a means to reproduce the results. TechCrunch Disrupt 2025 From AI and startups to space, fintech, and IPOs—experience game-changing insights across five main stages, breakouts, roundtables, unparalleled networking, and so much more. San Francisco, CA | October 27-29 REGISTER NOW In 2020, Google claimed one of its AI systems trained to detect breast tumors achieved better results than human radiologists. **Researchers from Harvard and Stanford published a rebuttal in the journal Nature, saying the lack of detailed methods and code in Google's research "undermine[d] its scientific value." Scientists have also chided Google for glossing over the limitations of its AI tools aimed at scientific disciplines such as materials engineering.** In 2023, the company said around 40 "new materials" had been synthesized with the help of one of its AI systems, called GNoME. **Yet, an outside analysis found not a single one of the materials was, in fact, net new. "We won't truly understand the strengths and limitations of tools like Google's 'co-scientist' until they undergo rigorous, independent evaluation across diverse scientific disciplines," Ashique KhudaBukhsh, an assistant professor of software engineering at Rochester Institute of Technology, told** TechCrunch. "AI often performs well in controlled environments but may fail when applied at scale." Complex processes Part of the challenge in developing AI tools to aid in scientific discovery is anticipating the untold number of confounding factors. AI might come in handy in areas where broad exploration is needed, like narrowing down a vast list of possibilities. But it's less clear whether AI is capable of the kind of out-of-the-box problem-solving that leads to scientific breakthroughs. "We've seen throughout history that some of the most important scientific advancements, like the development of mRNA vaccines, were driven by human intuition and perseverance in the face of skepticism," KhudaBukhsh said. "AI, as it stands today, may not be well-suited to replicate that." Lana Sinapayen, an AI researcher at Sony Computer Science Laboratories in Japan, believes that tools such as Google's AI co-scientist focus on the wrong kind of scientific legwork. Sinapayen sees a genuine value in AI that could automate technically difficult or tedious tasks, like summarizing new academic literature or formatting work to fit a grant application's requirements. But there isn't much demand within the scientific community for an AI co-scientist that generates hypotheses, she says — a task from which many researchers derive intellectual fulfillment. "For many scientists, myself included, generating hypotheses is the most fun part of the job," Sinapayen told TechCrunch. "Why would I want to outsource my fun to a computer, and then be left with only the hard work to do myself? In general, many generative AI researchers seem to misunderstand why humans do what they do, and we end up with proposals for products that automate the very part that we get joy from." Beery noted that often the hardest step in the scientific process is designing and implementing the studies and analyses to verify or disprove a hypothesis — which isn't necessarily within reach of current AI systems. AI can't use physical tools to carry out experiments, of course, and it often performs worse on problems for which extremely limited data exists. "Most science isn't possible to do entirely virtually — there is frequently a significant component of the scientific process that is physical, like collecting new data and conducting experiments in the lab," Beery said. "One big limitation of systems [like Google's AI co-scientist] relative to the actual scientific process, which definitely limits its usability, is context about the lab and researcher using the system and their specific research goals, their past work, their skillset, and the resources they have access to." **AI risks AI's technical shortcomings and risks — such as its tendency to hallucinate — also make scientists wary of endorsing it for serious work. KhudaBukhsh fears AI tools could simply end up generating noise in the scientific literature, not elevating progress. It's already a problem. A recent study found that AI-fabricated "junk science" is flooding**

Google Scholar, Google's free search engine for scholarly literature. "AI-generated research, if not carefully monitored, could flood the scientific field with lower-quality or even misleading studies, overwhelming the peer-review process," KhudaBukhsh said. "An overwhelmed peer-review process is already a challenge in fields like computer science, where top conferences have seen an exponential rise in submissions." Even well-designed studies could end up being tainted by misbehaving AI, Sinapayen said. While she likes the idea of a tool that could assist with literature review and synthesis, Sinapayen said she wouldn't trust AI today to execute that work reliably. "Those are things that various existing tools are claiming to do, but those are not jobs that I would personally leave up to current AI," Sinapayen said, adding that she takes issue with the way many AI systems are trained and the amount of energy they consume, as well. "Even if all the ethical issues […] were solved, current AI is just not reliable enough for me to base my work on their output one way or another."

A2 Accesibility

AI is discriminatory and inherently can't incorporate outlier data

Eileen O'**Grady**, 4-3-20**24**, [Eileen O'Grady is the education reporter at the Concord Monitor in Concord, New Hampshire, via Report for America. In her work she strives to connect communities, inform civic life and amplify voices that are often overlooked or mischaracterized by traditional media. Eileen is the former managing editor of the The Scope at Northeastern University, an experimental digital magazine focused on telling stories of justice, hope and resilience in Greater Boston. She is also a former staff writer for The Shelburne News and The Citizen, with bylines in The Boston Globe, U.S. News & World Report, The Bay State Banner and VTDigger. She holds a BA in politics and French from Mount Holyoke College and a MA in journalism from Northeastern University.] "Why AI fairness conversations must include disabled people — Harvard Gazette", Harvard Gazette, https://news.harvard.edu/gazette/story/2024/04/why-ai-fairness-conversations-must-include-disabled-people/ //ejs squad

A lot of research so far has focused on how AI technologies discriminate against people with disabilities, how algorithms harm people with disabilities," Shah said. "My aim for this project is to talk about how even the conversation on AI fairness, which was purportedly commenced to fix AI systems and to mitigate harms, also does not adequately account for the rights, challenges, and lived experiences of people with disabilities." For his research, he's interviewing scholars who have studied the issue and evaluating frameworks designed to maintain AI fairness proposed by governments and the AI industry. Shah said developers often consider disability data to be "outlier data," or data that differs greatly from the overall pattern and is sometimes excluded. But even when it's included, there are some disabilities — like non-apparent disabilities — that are overlooked more than others. If an AI is trained on a narrow "definition" of disability (like if data from people who stutter is not used to train a voice-activated AI tool) the outcome will be that the tool is not accessible. "There is a paradox," Shah said. "If you don't incorporate disability data, your algorithms would be open to discriminating against people with disabilities because they don't fit the normative ideas of your algorithms. If you incorporate the data, a lot of people with disabilities would still be missed out because inherently, the way you incorporate datasets, you divide data on the axes of identity." In his own life, Shah uses some AI technologies as assistive tools including "Be My AI," which describes images, and "Seeing AI," which provides users with visual information such as text, color, light, and scenery. Blind people were very involved in the development and testing process for both those tools. But Shah said too often people with disabilities are not included in the high-level decision-making and development processes for AI that is purported to benefit them. He cited, as an example, technology designed to diagnose autism or address learning disabilities. "The question is: Do people with autism or other disabilities even want these technologies? No one asks them," Shah said.

There is a huge shortage of teacher education on AI – and lack of district policy and time guarantee poor usage

Langreo 24 [Lauraine Langreo (Education Week staff writer, covering education technology and learning environments.), Most Teachers Are Not Using AI. Here's Why, 1-8-2024, Education

Week, https://archive.vn/bQIWx] accessed 2-20-2025 //ejs squad

While the hype around ChatGPT and other artificial intelligence tools in K-12 has made it seem like most educators have tried them, new survey results from the EdWeek Research Center suggest that's not the case. Two of every three educators said they haven't used AI-driven tools in their classrooms, according to the survey, which included 498 teachers and was conducted between Nov. 30 and Dec. 6. When broken down, 37 percent said they've never used them and don't plan to start, 29 percent say they haven't used them but plan to start this school year or in the near future, according to the survey results. ChatGPT and other generative AI tools entered the K-12 scene last year, and AI experts believe the technology has the potential to transform education and how people do their jobs. Still, many teachers are unfamiliar and uncomfortable with the technology. The survey asked teachers why they're not currently using AI tools in the classroom. Here's what they said: 1. Teachers have other, more pressing priorities Teachers have many responsibilities on their plates and do not have the time to learn more about and experiment with AI, which experts say is crucial to getting teachers comfortable with the technology. Nearly half of teachers (46 percent) haven't explored these tools because they have other priorities that are more important, according to the survey results. "I would like to learn more about AI in the classroom, but with four preps and a new curriculum, I have a hard time finding more time to do so," a high school foreign language teacher in South Dakota said in an open-ended response to the survey. A middle school health teacher in Nevada wrote, "We are just trying to keep the kids from fighting all day. No time for teaching." 2. They lack the knowledge and support The next most popular reason is that teachers don't know how to use AI tools, and the other reasons that round out the top five are also related to teachers' lack of knowledge and support for how to use AI tools effectively and appropriately, the survey found. In open-ended responses, many educators noted that they haven't been trained on the technology, they don't know if using or teaching about AI is compatible with state standards, and they haven't received guidance from district or school leaders. "I was asking for a district policy for student use of AI last spring and was brushed off," a high school social studies teacher in Minnesota wrote in an open-ended response. "I am on the digital learning community for my building and they won't take a firm stand either. Teachers shouldn't be left out in the wind on this issue."

AI regulation impossible - Black Boxes

Williamson continues (Ben Williamson is a Chancellor's Fellow at the Centre for Research in Digital Education and the Edinburgh Futures Institute at the University of Edinburgh. Alex Molnar is a Research Professor at the University of Colorado Boulder. Faith Boninger is NEPC's Publications Manager and Co-Director of NEPC's Commercialism in Education Research Unit and holds a PhD from Ohio State University. Williamson, B. Molnar, A., & Boninger, F. (2024). "Time for a pause: Without effective public oversight, AI in schools will do more harm than good." Boulder, CO: National Education Policy Center. http://nepc.colorado.edu/publication/ai) //ejs squad

Concerns have also emerged about AI development processes. For technical and commercial reasons, **AI models are** not transparent—they are **not publicly explained in any detail.**48 For example, an analysis of 10 leading foundation models found **limited information** about where data for analysis came from, how much computing was necessary to create the models, and what specifics were embedded in analytical algorithms.49 Many machine learning models are **black box models**, meaning that their mechanisms are said to be too complicated to explain or **not explainable at all.**50 Others are hidden from public view by proprietary rights accorded to corporations.51 Black box foundational AI models are key to large technology corporations' plans to expand their proprietorial models into all sectors, to grow global market share, and to generate maximum profit.52 In the absence of effective public oversight and regulation, running generative AI programs is currently only possible by using "Big Tech" companies' databases, high-powered computing capabilities, and financial resources. This makes it likely that the proprietary AI models of a few corporations will become the foundation for the vast majority of AI applications developed.53 Meanwhile, regulators and lawmakers will be left struggling to respond by creating a patchwork of after-the-fact regulatory protections.54

GAI decreases productivity

Hailey **Mensik,** Hailey Mensik write for WorkLife news, a Digiday publication covering the future of work, including topics like tech, spaces, culture, diversity, equity and inclusion., 7-24-20**24**, "AI is actually making workers less productive", WorkLife, https://www.worklife.news/technology/ai-is-actually-making-workers-less-productive/ //ejs squad

Generative AI tools that are poised to eliminate time-consuming tasks leading to major boosts in workplace productivity have yet to make good on that promise. In fact, right now they are doing the opposite — giving employees more work to do and contributing to burnout. Almost 80% of workers who use generative AI in their jobs said it has added to their workload and is hampering their productivity, an Upwork survey among over 2,500 full-time workers, freelancers and executives found. Workers say they're spending more time reviewing or moderating AI-generated content and investing more of their time in learning how to use the tools, and their experiences are far apart from the perceptions of their employers. Some 96% of executives expect AI to boost productivity, while about 40% of employees say they don't know how that will ever happen, the Upwork survey found. Accordingly, employers will need to adjust their expectations and approach to effectively integrate new tech and see some ROI — though it'll likely be less than they're hoping for. "What's happening is that this hype bubble is just huge, and it's disproportionate to the actual impact the technology can have right now, especially the way it's being deployed," said Emily Rose McRae, senior director analyst at Gartner. "What's happening is that this hype bubble is just huge, and it's disproportionate to the actual impact the technology can have right now, especially the way it's being deployed." "I talked with one client who said their board declared they should cut headcount by 20% due to generative AI. I'm going to be frank that I'm not actually sure any company has come anywhere near that level of headcount cutting, and I don't know that they will, because that's just not how the tool works," McRae said. A key problem is that the tools themselves remain imperfect. Generative AI is still prone to hallucinate or fabricate an answer that sounds reasonable, meaning a human's input is needed to double-check the material. "What it does is it saves you the time of putting it all together in the first place," McRae said. Naturally, there are examples of companies that have found generative AI is genuinely saving time for workers. There are also some extremely specific use cases where generative AI really has had a massive impact, like the legal field, where during discovery AI tools can help lawyers research and analyze existing case law and summarize huge amounts of information, she said. In other cases, gen AI-powered chatbots can significantly speed up the time it takes staff to learn how to operate a new software or complete new tasks, or save HR leaders time by answering employee questions and virtually directing them to resources. But in all cases, a human is still needed to review the validity of the output. The review process can be time-consuming itself, and neglecting to do so carries varying levels of risk. "A lot of your large language models only operate at best when a human's in the loop and when there is human judgment and oversight, and that's just the reality of where we are with this technology," said Kelly Monahan, managing director and head of the Upwork Research Institute. "A lot of your large language models only operate at best when a human's in the loop and when there is human judgment and oversight, and that's just the reality of where we are with this technology." "In order to really capture the productivity gains, we actually have to take a big step back and say what is the business problem we're solving for? How do I rethink the way that I'm doing my job in order to achieve that? And how does this tool help? And I'm not sure that a broader AI strategy in workforce development has taken place yet in many organizations," Monahan said. Instead workers are feeling left on their own when it comes to making the tools really work for them. The Upwork survey found that 40% of workers feel their company is asking too much of them when it comes to AI, and they are investing far more of their time teaching themselves how to use the tools. Employers can better support staff by holding focus groups to determine exactly what barriers they're facing and what kind of targeted training is needed, Mcrae said. "If it's a priority that your workforce experiment with and learn how to use generative AI, make sure you have real cases for what you want them to be doing with it and give them the tools and space to learn how to do that. But also ideally be very open to the feedback, that this doesn't do what we need it to do, and it's actually not helpful," she said. In the near future, Mcrae believes employers will soon start teaching staff to spot AI hallucinations the same way they do with phishing, or through "information skepticism" training. There they will learn how to spot cues to be more skeptical of an output, or any AI-generated content — whether it's labeled as such or not — and when they can accept one more confidently. Just like phishing they'll also be able to report such instances and use that data to better inform the language models they are working with.

AI causes job loss Zilber 24

[Ariel Zilber, August 12, 2024, "Top Wall Street exec predicts 'social unrest' due to AI: 'Millions of people could be out of jobs", Ariel got his start as a journalist in Israel, where he worked for Ha'aretz and The Jerusalem Post. He returned in 2016 to the US, where before joining The Post he did a five-year stint as an online news reporter for the Daily Mail. He is currently a resident of Brooklyn who enjoys walking his dog while wondering how to overcome his Twitter addiction, New

York Post ,https://nypost.com/2024/08/12/business/top-wall-street-exec-predicts-social-unrest-due-to-ai/DOA: 3/10/2025] //ejs squad

Artificial intelligence could render many jobs such as cashiers and drivers **obsolete** — **leading to widespread social unrest**, according to a senior Wall Street finance executive. Armen Panossian, a co-CEO of the Los Angeles-based investment firm Oaktree Capital Management, told Bloomberg News that **AI poses "the biggest risk"** because while it "clearly has the potential for very large economic gains," it will also have "societal impacts." **"Millions of people could be out of jobs. So who's going to retrain those people?**" Panossian told Bloomberg News. "If we don't figure that out, **there could be social unrest."**