From Protection to Oppression: The Human Rights Cost of U.S. Border Enforcement Post-9/11

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Abstract
This research investigates evolution of U.S. border control, how security-driven policies and technologies have become central in US immigration governance after 9/11. Applying theory of realism, the study explores how post-9/11 threats reshaped US national priorities, opting for aggressive border securitization and militarization. Through analyzing policies and technologies, the research analyzes their impact on human rights. The findings suggest that while these technologies advanced, they also intensified violations such as the racial profiling, data breaches, and the erosion of liberties. And allows understanding how border enforcement transforms migrants into threats under the guise of sovereignty. This study contributes to limited literature connecting national security and human rights.
Keywords: Protection, Oppression, Human Rights Cost, U.S. Border Enforcement, Post-9/11.

Introduction

US immigration enforcements are carried by the Department of homeland security (DHS) which has been increasing its budgetary system, spending $409 Billion since its inception in 2003. There are two main sub-agencies which are concerned with the immigration tasks. One of them is US Customs and Border Protection (CBP), which is concerned with the security of entry ports including the air, sea ports and land crossings. The other one is the interior enforcement, which includes the administration of the internal laws concerned with the immigration such as the asylums, detaining, deporting etc. It is managed by the US Immigration and Customs Enforcement (ICE). The indefinitely large number of the budget of the DHS depicts the importance of securing border for the U.S.[1] The two main international boundaries of the US-Mexico and the US-Canada borders are the focal points of research.

The US strategies to borders management underwent significant change due to multiple factors of the need of time, issues and patterns of migration. The post 9/11 era saw most stringent US border management policies, particularly the Bush administration's infamous 'smart border' policy. Later on, with the advancement of technologies, US started to mount significant technologies ranging from general technologies to the ones that are AI based in order to strengthen the surveillance, aid in the improvement of border mechanisms, management of

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[1] American Immigration Council, *The Cost of Immigration Enforcement and Border Security* (Washington, D.C.: American Immigration Council, August 2024), 1–11, https://www.americanimmigrationcouncil.org.

cross border travel and the prevention of illicit crimes. While aiding the US in the strengthening of its national interest and security, these have simultaneously sparked controversies among various groups in the society regarding the infringement of rights and liberties of people. Sparking concerns over the US policy actions which are divergent to its foundational concepts of Liberalism. These technologies have been seen as source of racial profiling, discrimination, privacy breaches, difficulties for people seeking asylums, wrong detentions and the violation to the basic rights of movement. The main task for the United States is to find a harmony between its national security concerns and the prevention of human rights violations.

Problem Statement:

The US government has spent more than $409 billion in the past two decades in the immigration enforcement. This includes the border barriers, strengthening of existing and creating more sophisticated technology aimed at the regulation and control of borders. While this enhancement is fruitful for the protection of national interest of the United States, it comes with a huge price for the migrants, which suffer from the human rights violations that have increased to unprecedented levels.

Literature Review:

Manjarrez and Rojek (2020), in The Border Ecosystem, highlight the dynamic nature of U.S. border management influenced by multiple factors, actors, and feedback loops. They introduce the concept of the border ecosystem, showing how enforcement can drive migrants to opt for more dangerous alternative routes.[2]

Timothy C. Dunn (2021), in Handbook on Human Security, Borders and Migration, analyzes U.S. policy shifts and militarization of the U.S.-Mexico border. He explains how Trump exacerbated strict border control with racist rhetoric, deepening disparities and human rights violations.[3]

In U.S. Border Militarization and Foreign Policy: A Symbiotic Relationship (2022), Coyne and Goodman explain how U.S. militarization, rooted in foreign policy, became domestically applied to borders—particularly along the Mexican border.[4]

S. Priya Morley (2024), in AI at the Border, studies border enforcement tools that disproportionately impact Black people. She argues these tools, though seen as neutral, perpetuate systemic racial outcomes and need accountability.[5]

Rudi-Ann Miller (2023), in Technologizing Border Controls, highlights how AI-powered systems cause rights violations through bias, lack of transparency, and minimal human oversight.[6]

Guillermo Alonso Meneses shows how U.S. enforcement along the Mexico border pushed migrants into deadly routes, causing over 3,000 deaths between 1990–2002. He emphasizes the need for humane alternatives.[7]

The Balancing Act (2024, FAU Undergraduate Law Journal) links enforcement with the erosion of migrant dignity. It calls for frameworks that balance security with individual rights.[8]

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[2] Victor M. Manjarrez Jr. and Jeffrey Rojek, "The Border Ecosystem: Viewing Border Security as Part of a Complex System," *Current Politics and Economics of the United States, Canada and Mexico* 22, no. 2–3 (2020): 85–103.

[3] Dunn, Timothy J. "The militarization of the US-Mexico border in the twenty-first century and implications for human rights." In *Handbook on human security, borders and migration*, pp. 35-53. Edward Elgar Publishing, 2021.

[4] Coyne, Christopher J., and Nathan P. Goodman. "US border militarization and foreign policy: a symbiotic relationship." *The Economics of Peace and Security Journal* 17, no. 1 (2022).

[5] S. Priya Morley, "AI at the Border: Racialized Impacts and Implications," *Just Security*, June 28, 2024, https://www.justsecurity.org/97172/ai-at-the-border/.

[6] Rudi-Ann Miller, "Technologizing Border Controls: AI and Its Impact on Human Rights," *Berkeley Journal of International Law* (blog), April 10, 2019, https://www.berkeleyjournalofinternationallaw.com/post/technologizing-border-controls-ai-and-its-impact-on-human-rights.

[7] Meneses, Guillermo Alonso. "Human rights and undocumented migration along the Mexican-US border." *UCLA L. Rev.* 51 (2003): 267.

[8] Allyson Monreal, "The Balancing Act: Human Rights and the Dynamics of Border Control Policies," *FAU Undergraduate Law Journal* (2024): https://journals.flvc.org/FAU_UndergraduateLawJournal/article/view/135814.

Peter Andreas (2006), in Immigration Reforms and Border Security Technologies, details U.S. post-9/11 technological expansion. He critiques how strict controls push migrants toward harsher alternatives, though he provides little human rights data.[9]

Ah Choy Er, in Border Control, traces post-9/11 border securitization and outlines U.S. policies aimed at tightening air, sea, and land borders. However, the article lacks coverage of newer threats or technologies.[10]

Reanne Cayenne (2025), in Pathways to the Sound Use of Border Technologies, notes how AI-led surveillance often lacks accountability and creates a "sanctuary on paper," denying protections in practice. She calls for rights-centered, migrant-informed policy reforms.[11]

Ruiz Soto, Putzel-Kavanaugh, and Meissner (2024), in Shifting Realities at the U.S.-Mexico Border, explore shifts in migrant demographics and Biden's policy innovations, noting challenges like legal hurdles and operational constraints.[12]

The American Immigration Council (2024) notes $409 billion spent on border control from 2003–2023, with a 276% budget increase for CBP. Despite this, there's no evidence of reduced illegal migration or effectiveness of enforcement.[13]

Petra Molnar (2025), in Smart Borders Kill, critiques how border tech perpetuates imperialism and systemic violence, benefiting corporate interests while overlooking humanitarian impacts.[14]

Research Gap:

Despite the growing volume of research on U.S. border enforcement, several gaps remain unaddressed. First, there lack of a comprehensive framework which talks about the evolution of technologies and their respective impacts on the human rights. This research provides a holistic perspective Secondly, there are very few studies apply theoretical frameworks to the border context, particularly in examining how surveillance and enforcement mechanisms criminalize migration and securitize mobility through state-centric, threat-based logics.

Research Questions

1. How has U.S. border management evolved after 9/11?

2. What types of border technologies are currently being deployed, and which technologies have already been integrated into border control management?

3. How do these technologies impact human rights, particularly concerning privacy, racial profiling, and the treatment of asylum-seekers?

Core Idea:

This study contends that U.S. border control has evolved to adopt stringent border policies that enabled sophisticated technology deployment which is cause of erosion of human rights, disproportionately targeting migrants under the guise of national security.

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[9] Peter Andreas, "The Escalation of U.S. Immigration Control in the Post-NAFTA Era," *Political Science Quarterly* 113, no. 4 (Winter 1998–99): 591–615.

[10] Ah Choy Er, Bart MacCarthy, and Walailak Atthirawong, "Border Control," *Manufacturing Engineer* 82, no. 2 (2003): 24–29.

[11] Reanne Cayenne, "Pathways to the Sound Use of Border Security Technologies in North America," *Digital Policy Hub Working Paper*, Centre for International Governance Innovation, January 27, 2025, https://www.cigionline.org/publications/pathways-to-the-sound-use-of-border-security-technologies-in-north-america/.

[12] Ruiz Soto, Ariel G., Colleen Putzel-Kavanaugh, and Doris Meissner. *Shifting Realities at the U.S.-Mexico Border.* Washington, DC: Migration Policy Institute, 2024. https://www.migrationpolicy.org/research/shifting-realities-us-mexico-border.

[13] American Immigration Council, *The Cost of Immigration Enforcement and Border Security* (Washington, D.C.: American Immigration Council, August 2024), 1–11, https://www.americanimmigrationcouncil.org.

[14] Petra Molnar, "Smart Borders Kill: New Frontiers of Violence and Erosion of Rights at the World's Borders," *OpenGlobalRights*, February 13, 2025, https://www.openglobalrights.org/smart-borders-kill-new-frontiers-of-violence-and-erosion-of-rights-at-the-worlds-borders/.

Theoretical framework:

Classical Realism focuses on primacy of state as sole actors driven by ideas of security, sovereignty, survival and national interests holding a paramount position. By applying this lens, we can analyze how the U.S border policies after the 9/11 became hardline. The development of DHS in 2003 and restructuring of entire border enforcement signify vitality of defensive mechanism as evident in Secure Border Initiative (2005), Operation Stonegarden, Border security for America act of 2017 etc. Realism explains the instrumentalization of technologies such as the biometric entry and exits used at 32 major US ports[15], E-passport automated kiosks at 40 airports[16], ground sensor X-rays, Vehicle X-rays and gamma ray scanning systems, ASTs, ISTs, radars, sensors etc. These technologies are seen as force multiplier tool of maintaining the border control, managing flow and a strategic calculus to deter, detect and neutralize any external threat. Emphasizing territorial control and deterrence strategies which are consistent with the realist thinking. The U.S. justifies expansion of technologies under Realist logic of safeguarding territorial integrity and maintaining internal order even when such actions provoke criticism regarding civil liberties and humanitarian obligations.

Research Methodology:

The research adopts qualitative approach to study evolution of the US border management, the technological advancement and human rights violations, focusing strictly on the US as a case study to examine its management system. Data is collected through document analysis of credible research articles, factsheets, articles, documents, NGO reports and think tanks.

Historical Trajectory of U.S. Border Control Post 9/11

The evolution of US' border control management advanced over time, influenced by political needs, security imperatives, economic requirements, threats etc. It eventually evolved into modernized system justified by security needs. The Chinese Exclusion Act of 1882 was the first of its kind which reflected racism and ban on the entrance of Chinese immigrants for 10 years, restricting their flow into the US.[17] This was an early manifestation of securing oneself against external demographic threats. The US border patrol operated under the Labor appropriation act in managing enforcement, initially began operations to restrict illegal arrivals along the US-Mexico border. The 1924 Immigration Act marked the racial quotas which excluded the Asian, central and Eastern Europeans, favoring Northern Europeans over others.[18] This act reflected realist notions of preserving national identity and culture needed for cohesion. The enforcement mechanisms during this time period remained modest, with minimal federal organization. The patrols near the border horseback with few resources to surveil and communicate with average conventional tools.

The mid-20th century saw complex relationship between immigration and labor necessity. The Bracero program of 1942 enabled the recruitment of Mexican labor during World war-II due to shortages at home.[19] The labors were also hired to work in the US to fulfil labor gaps, particularly in the low-valued. While fostering economic interdependence and cooperative, this program showed realist approach of attaining national interest even if it required bit of flexibility towards

[15] U.S. Government Accountability Office, *Facial Recognition Technology: CBP Traveler Identity Verification and Efforts to Address Privacy Issues*, GAO-22-106154 (Washington, D.C.: July 27, 2022), https://www.gao.gov/products/gao-22-106154.

[16] Alternative Airlines, "Automated Passport Control," https://www.alternativeairlines.com/automated-passport-control.

[17] Ngai, Mae M. *Impossible Subjects: Illegal Aliens and the Making of Modern America*. Princeton University Press, 2004.

[18] U.S. Department of State, Office of the Historian, *The Immigration Act of 1924 (The Johnson-Reed Act)*, accessed May 24, 2025, https://history.state.gov/milestones/1921-1936/immigration-act.

[19] Library of Congress, *1942: Bracero Program: A Latinx Resource Guide: Civil Rights*, accessed May 24, 2025, https://guides.loc.gov/latinx-civil-rights/bracero-program.

others and also exposed workers to exploitation and discrimination.[20] Aggressive approach in border management came with the Operation Wetback when the tensions between the labor needs and the securitization of migrant flows became apparent, pushing undocumented immigrants out of the US bypassing the necessary due exit processes.[21] The concept of border security became synonymous with militarization in 1980s-1990s when 'War on drugs' era came, initiating operations to curb illegal smuggling of narcotics. The 1996 Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) further strengthened migration restriction, with enhanced border technologies, penalties, employment restrictions on undocumented migrants, removals and long-term bans.[22] These measured showed the realist principles which saw migration as a threat to order and securitized it by expanding control and enforcement.

The unanticipated attack of September 11, 2001 marked a pivotal moment in US border policy, nudged America to opt for staunch border control and rapid enforcement. The following policy transformed, interweaving border management with US' national security. This tie is reflected in the creation of The Department of Homeland Security (DHS), under the Homeland Security Act of 2002. The introduction of DHS itself is prompted by the realist necessity of enhancing one's security. The building up of institution serving as a securitization department, prompted by need for increased state survival and preservation of sovereignty. It aimed to protect American peripheries from terrorism. It merged the 22 agencies including U.S. Customs and Border Protection (CBP) and Immigration and Customs Enforcement (ICE), under a unified command. The USA Patriot Act lead by the President George W. Bush expanded the surveillance and created more sophisticated information sharing authorities across these agencies. The US-VISIT program (2003) introduced the concepts such as biometric data collections at several points of entry and exit, such as the fingerprints, IRIS scans and Facial images.[23] These prerequisites of entrance were required from all the non-US citizens, marking a fundamental change from previously known border management measures. Another initiative which launched in 2005 was the Secure Border Initiative (SBI) that increased the number of personnel with a highly sophisticated tactical infrastructure and integrated surveillance technologies, including the aerial drones, motion sensors and the remote surveillance systems.[24] The tools helped in the monitoring real time spaces, expanding governmental reach into remote areas which did not have traditional checkpoints. Scholars argue this signaled a transition toward the "virtual wall" model, blending physical infrastructure with data-driven surveillance. These transformations were not purely made by the political officials, but public discourse was highly influential in high-tech enforcement because public started viewing immigrants as cause of terror, crime and economic instability. Media amplified these emotions, contributing to an environment which possessed securitized national consciousness, reinforcing support for restrictive migration policy and normalization of high enforcement mechanism. The policies that made their way in post 9/11

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[20] *Encyclopaedia Britannica*, s.v. "Bracero Program," last modified April 19, 2024, https://www.britannica.com/event/Bracero-Program.

[21] George Stith, "Operation Wetback," *Digital History*, University of Houston, 1952, accessed May 24, 2025, https://www.digitalhistory.uh.edu/disp_textbook.cfm?smtID=3&psid=593.

[22] Eleanor Acer and Olga Byrne, *How the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 Has Undermined US Refugee Protection Obligations and Wasted Government Resources*, Center for Migration Studies of New York, 2017, accessed May 24, 2025, https://cmsny.org/publications/illegal-immigration-reform-immigrant-responsibility-act-1996-undermined-us-refugee-protection-obligations-wasted-government-resources/.

[23] U.S. Department of Homeland Security, *US-VISIT: Homeland Security*, NCJ 203840, 2003, accessed May 24, 2025, https://www.ojp.gov/ncjrs/virtual-library/abstracts/us-visit-homeland-security.

[24] American Immigration Council, *The Rise and Fall of the Secure Border Initiative's High-Tech Solution to Unauthorized Immigration*, April 15, 2010, accessed May 24, 2025, https://www.americanimmigrationcouncil.org/research/rise-and-fall-secure-border-initiative%E2%80%99s-high-tech-solution-unauthorized-immigration.

environment paved way for subsequent administrations to further expand and deepen control which are evident in current landscape of US border management.

During Obama's tenure, border control reflected stauch approach as well as introducing inItiatives that humanised migration. The secure communities initiative expanded which enabled migrant data sharing across several agencies but was replaced with the Priority Enforcement Program (PEP) upon critism, targeting only serious criminals. Operation streamline and Operation Cross Check worked sim ultaneously to prosecute migrants. Initiative bed mandate expanded family detention and established detention as a tool. On the other hand the Humanitaian in initatives such as the eferred Action for Childhood Arrivals (DACA) introduced providing legal protection from deportation to unreported migrants.And the Deferred Action for Parents of Americans (DAPA) which was proposed but could not set footing.

The era of Trump was marked by intensification of border enforcement, as evident in the symbolic campaigns to "build the wall" in order to reduce the migrant flows. One of the most important initiatives was the Executive Order 13767, which established an immediate physical barrier along the border.[25] The zero-tolerance policy which imposed punishment to alien migrants.[26] This policy was condemned internationally because it enabled the adult prosecution, separating them from their family. Trump administration also implemented the Migrant Protection Protocols" (MPP), aka the Remain in Mexico policy which delayed the migrant seeking asylum into harsh area, denying legal protection and exposing them to violence and exploitations. In covid the Title 42 was invoked which expelled most asylum seekers with due process.[27] Trump actually empowered the ICE to immediately arrest undocumented migrants not just the criminals, showing the cecaesstion of Obama administration priorities, causing 30% surge in the arrests.[28] Even the refugee admission decreased from 110000 in 2017 to just 18,000 in 2020.[29] Beyond all this, the administration allowed the information sharing with the local enforcement under the programs like 287(g), tying federal immigration systems with domestic policing. All these actions were backed by the local sentiments towards ideas of migrants as threat to national prosperity. This support has been the cause of justified violence and erosion of procedural protection of human rights. This in turn enables the borders to act not just a physical barrier but a heavily guarded space where the national security takes a top position, sidelining the humanitarian concerns. Trump initiated a Northern Border strategy which aimed in combatting illicit activities across the northern border with Canada however the undocumented illegal crossings increased across the North from Roxham Road, with more than 56000 asylum seekers passing from 2017-2019. The STCA was done between both countries but when it was exploited, the loophole was closed in 2023 during Biden administration. Trump's policies actualized the realism by adopting strict sovereign control by imposing the strict border management.

[25] American Immigration Council, *Summary of Executive Order "Border Security and Immigration Enforcement Improvements"*, February 27, 2017, accessed May 24, 2025, https://www.americanimmigrationcouncil.org/research/border-security-and-immigration-enforcement-improvements-executive-order.

[26] Human Rights Watch, *Q&A: Trump Administration's "Zero-Tolerance" Immigration Policy*, August 16, 2018, accessed May 24, 2025, https://www.hrw.org/news/2018/08/16/qa-trump-administrations-zero-tolerance-immigration-policy.

[27] U.S. Customs and Border Protection. "Southwest Land Border Encounters." Last modified May 12, 2025. https://www.cbp.gov/newsroom/stats/southwest-land-border-encounters.:contentReference{index=5}

[28] Gramlich, John. "How Border Apprehensions, ICE Arrests and Deportations Have Changed Under Trump." *Pew Research Center*, March 2, 2020. https://www.pewresearch.org/short-reads/2020/03/02/how-border-apprehensions-ice-arrests-and-deportations-have-changed-under-trump/.

[29] Pillai, Drishti, and Samantha Artiga. "Expected Immigration Policies Under a Second Trump Administration and Their Health and Economic Implications." *KFF*, November 21, 2024. https://www.kff.org/racial-equity-and-health-policy/issue-brief/expected-immigration-policies-under-a-second-trump-administration-and-their-health-and-economic-implications/.

The Biden Administration was modestly less stringent towards migrants, taking on a humanitarian approach to border management. He put a cease to the wall construction, lifted the Title 42, ended the MPP and introduced the U.S. Citizenship Act of 2021, aiming to grant citizenship to 11 million unregistered migrants. He also emphasized the smart technological deployment rather than mere physical walls. The Deferred Action for Childhood Arrivals (DACA) program and the Obama administration's Central American Minors program also aided to prevent child deportation.[30] Even though the reversal policies were immediate, they faced implementation hurdles due to the huge influx and public pressures from both the national security advocates and liberal pro-immigration advocates, Biden administrative tasked 1500 personnel to help CBP with tasks, highlighting continued reliance on military resources despite rhetorical changes. Biden administration also encouraged the use of application such as the CBP One to ensure early scheduling and processing, but faced criticism as it left out the vulnerable majority from accessing it due to internet and digital illiteracy. In October 2023, Biden was bound to initiate the border wall in Texas's Rio Grande Valley because of congress. The number of illegal crossings dropped significantly in mid 2023.[31] So, while this administration was more lenient, its practical enforcements saw trouble, leading to some to believe it as a continuation of prior stringent policies of previous administrations, operating under false banners of reform.

Trump returned with even a harder approach with resume of the wall building, strict asylum controls, remain in Mexico policy, deportation. Signed Laken Riley act in January 2025 to detain undocumented travellers.The signing of the Executive Order 14167, which includes 10,000 personnel on southern border in spring of 2025.[32] He made to National Defense Areas along both sides. Trump also shut the CBP app, saying it enabled migration. Trump massively deported people like never before around 2 million and ending the birthright citizenship.[33] Signed Laken Riley act in January 2025 to detain undocumented travellers. Trump also stopped protection given under the Temporary Protected Status (TPS). He banned travel under section 212(f) of the Immigration and Nationality Act (INA) on June 4, 2025. As of june 2025 more than 10,000 immigration arrests have been done. U.S. visitors from Canada under Trump need to register with USCIS and be fingerprinted if staying over 30 days. Trump's aggressive enforcement measures are not just rhetorical tools but deeply reliant on advanced technologies mentioned in next section to actualize hard control.

Technological Expansion as Statecraft: Tools of Surveillance, Deterrence, and Control

The Us technological sophistication followed pattern of realistic principle of securing national integrity and ensuring survival by heightening own capabilities to strengthen control and alleviate perceived threats. This section focuses on the technologies at outskirts of US, ranging from surveillance, defense sensor, scanning to various data integration systems. Each technological deployment is a proof of realism operationalization such as the show of power, adopting deterrent mechanisms and tight control.

1. Surveillance Infrastructure: Expanding Border Visibility

[30] U.S. Department of Homeland Security, *Deferred Action for Childhood Arrivals (DACA)*, archived content, accessed May 24, 2025, https://www.dhs.gov/archive/deferred-action-childhood-arrivals-daca.

[31] U.S. House Committee on Homeland Security. "Final FY23 Numbers Show Worst Year at America's Borders—Ever." *Homeland.House.Gov*, October 26, 2023. https://homeland.house.gov/2023/10/26/factsheet-final-fy23-numbers-show-worst-year-at-americas-borders-ever/.

[32] Benenson, Laurence, and Nicci Mattey. "The First 100 Days of the Second Trump Administration: Key Immigration-Related Actions and Developments." *National Immigration Forum*, April 28, 2025. https://immigrationforum.org/article/the-first-100-days-of-the-second-trump-administration-key-immigration-related-actions-and-developments/.

[33] Pillai, Drishti, and Samantha Artiga. "Expected Immigration Policies Under a Second Trump Administration and Their Health and Economic Implications." *KFF*, November 21, 2024. https://www.kff.org/racial-equity-and-health-policy/issue-brief/expected-immigration-policies-under-a-second-trump-administration-and-their-health-and-economic-implications/.

These surveillance infrastructures are guided by realist logic of increasing state capacity to detect and neutralize threat. Such as Integrated Fixed Towers (IFTs**)** fitted for surveillance, with radars, cameras and long-range infrared. Provide real time monitoring of areas where physical personnel presence isn't possible. 31 were deployed in Arizona Tuscan region till 2020.[34] Each IFT has the capability to cover 7.5 miles. Helping to create a virtual wall network. Autonomous Surveillance Towers (ASTs) are another kind of AI solar powered movement detection towers, which unlike IFTs are totally unmanned and work on AI algorithms.[35] Over 565 of these are operational, of which 290 are at Southern border as of May 2025, helping cover 30% of total southern border.[36] These ASTs has also started to get deployed at the Northern border, primarily in Montana and Dakota. Mobile Surveillance Systems (MSS) are equipped with long range, infrared/ electro-optical cameras. These mobile vehicles position themselves based on the threat and are operational both at the Derby line in the North and the El Paso areas in the South. Relocation towers are also already operational along Washington and Arizona, aiding to provide 360-degree surveillance capabilities in indigenous lands and protected areas.[37] Tethered Aerostats (Blimps) aerostats are fixed helium balloons which have radar, cameras and even intercept the signals. They are placed at 2000-5000 feet in the sky. These are highly dependent on weather. TARS which are the group of networks deployed at 8 sites along the Southern border.[38] Six blimps are deployed in the South Texas and significant deployed in California. These aid grounds-based sensors with providing them the aerial view.[39]

2. Aerial Surveillance Systems

These Automated systems work on principle of maximization of surveillance without having to face diplomatic cost. It gives states right to unilaterally defend itself from external perceived or actual terror. Systems such as the MQ-9 Predator B and Reaper UAVs operate Marine and the air operations, capable to fly 30 hours.[40]. Equipped with synthetic aperture radars which are capable of seeing and kind of land disturbances, footprints and even the objects buried down below. Small Tactical UAVs (sUAS) are the drones which are very compact and used for live stream overwatch by these agents. They are mostly used for rescue and search operations of migrants. This consist of drones like the Puma 3 AE and the Skydio X2. They monitor suspicious activity in an undercover manner.[41] These are very short range and provide small visual aid in remote urban

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[34] U.S. Department of Homeland Security, Office of Inspector General. *CBP Has Improved Southwest Border Technology, but Significant Challenges Remain*. OIG-21-21. Washington, DC: U.S. Department of Homeland Security, February 2021. https://www.oig.dhs.gov/sites/default/files/assets/2021-02/OIG-21-21-Feb21.pdf.

[35] U.S. Customs and Border Protection. "CBP's Autonomous Surveillance Towers Declared a Program of Record along the Southwest Border." Last modified February 3, 2021. https://www.cbp.gov/newsroom/national-media-release/cbp-s-autonomous-surveillance-towers-declared-program-record-along.

[36] Anduril Industries, *Anduril Deploys 300th Autonomous Surveillance Tower (AST), Advancing Capability for Border Security*, accessed May 24, 2025, https://www.anduril.com/article/anduril-deploys-300th-autonomous-surveillance-tower-ast-advancing-capability-for-border-security/.

[37] U.S. Border Patrol, *Annual Surveillance Report: Surveillance Platforms* (2022), internal document.

[38] U.S. Government Accountability Office. *Border Security: Additional Actions Needed to Strengthen Collection of Unmanned Aerial Systems and Aerostats Data*. GAO-17-152. Washington, D.C.: U.S. Government Accountability Office, February 16, 2017. https://www.gao.gov/products/gao-17-152.

[39] Gambler, Rebecca. "Border Security: DHS Surveillance Technology, Unmanned Aerial Systems and Other Assets." *Government Accountability Office*, May 24, 2016. https://www.defensedaily.com/wp-content/uploads/post_attachment/132447.pdf.

[40] General Atomics Aeronautical Systems, Inc., "Remotely Piloted Aircraft: MQ-9A 'Reaper'," *General Atomics Aeronautical Systems*, https://www.ga-asi.com/remotely-piloted-aircraft/mq-9a.

[41] U.S. Department of Homeland Security, Office of Inspector General. *CBP Has Improved Southwest Border Technology, but Significant Challenges Remain*. OIG-21-21. Washington, D.C.: U.S. Department of Homeland Security, February 23, 2021. https://www.oig.dhs.gov/sites/default/files/assets/2021-02/OIG-21-21-Feb21.pdf.

and vegetation areas. Piloted Fixed-Wing Aircraft and Helicopters are used by CBP in order to manage control. These consist of more than 250 aircrafts. These are capable of detecting low flying aircrafts, patrol air corridors and instantly take action in case of any illicit smuggling activity. These aircrafts include the P-3 Orion Long range planes, Cessna 206s, UH-60 Black hawks.[42] Since these are manned, the decisions they take are based on human judgement rather than AI based which spark ethical debates. Control over the state airspace and aerial intelligence gathering is an assertion of sovereign oversight on the every inch of territory.

3. Biometric and Identity Technologies

There are many technologies used by CBP such as the Simplified Arrival Facial Recognition Allows the biometric and facial matching within a couple of seconds. It is used by the CBP according to its TVS (Traveler Verification Service**)** program at different sites including the land ports at vehicle and pedestrian entry exit points.[43] Furthermore**,** a database by the name HART Database is a storage system incorporating the facial scans, fingerprints, voice, palm prints etc. This system is similar to the IDENT system. This and the Biometric Exit Program are used together. It contains information and records of the biometrics which can be shared across agency. The biometric exit program contains the Facial recognition. This system verifies the departures through scans at different locations by matching it with the existing records present in the HART database. By the last year, The HARTS had record of around 260 million in its database. Iris and Palm Scanning Pilots are also part of the casual TSA pre-check integrations. Iris scans is so common that 69% of border checks included IRIS scan in 2024 with aim of 100% inclusion.[44] These systems are evidence of the realist impulse to document, categorize, and regulate the "other" as a potential security threat.

4. Non-Intrusive Inspection and Vehicle Scanning

Z Backscatter Vans and VACIS Systems are used by CBP. The ZBX-rays based van such as the ZBV use X rays to detect hidden smuggled items in commercial and passenger vehicles. VACIS uses gamma rays to inspect dense materials. Radiation Portal Monitors (RPMs) with isotope identifiers detects any radiational threat like Uranium smuggling. If identified, the Radiation Isotope Identification Devices (RIIDs) are used to accurately detect placement. According to CBP, almost all vehicles are scanned for such material.[45] Under-Vehicle Inspection Systems (UVIS) are imaging tools which check the vehicles for smuggling, compiling angles of image into single one and uses machine AI to compare it with the clean reference image.

5. Data Integration, Artificial Intelligence, and Predictive Analytics

The CBP has adopted various data integration tools like Analytical Framework for Intelligence (AFI) which categorizes and stores comprehensive travel records, person's vehicle ALPR, biometrics, watchlists which enables it to determine criminals based on predictive analysis.[46] Platforms like Gotham and Raven are also used to reveal connections to crimes through its data storage of border crossing logs, telecom records, and social media content. terrain-based risk

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[42] U.S. Government Accountability Office. *Customs and Border Protection: Actions Needed to Enhance Acquisition Management and Knowledge Sharing*. GAO-23-105472. Washington, D.C.: U.S. Government Accountability Office, April 2023. https://www.gao.gov/assets/gao-23-105472.pdf.

[43] U.S. Customs and Border Protection. "CBP Announces Facial Biometric Test for Inbound Vehicle Travelers in Buffalo." *U.S. Customs and Border Protection*, March 5, 2024. https://www.cbp.gov/newsroom/local-media-release/cbp-announces-facial-biometric-test-inbound-vehicle-travelers-buffalo.

[44] Heilweil, Rebecca. "Customs and Border Protection is expanding its use of biometric iris recognition." *FedScoop*, December 3, 2024. https://fedscoop.com/customs-and-border-protection-biometric-iris-recognition/.

[45] U.S. Customs and Border Protection. *Non-Intrusive Inspection (NII) Technology*. Washington, D.C.: U.S. Department of Homeland Security, May 2013. https://www.cbp.gov/sites/default/files/documents/nii_factsheet_2.pdf.

[46] U.S. Department of Homeland Security, Office of Inspector General, *CBP Has Improved Southwest Border Technology, but Significant Challenges Remain*, OIG-21-21 (2021), p. 8.

modeling is high in use.[47] The CBP has been training the AI to help them to predict the migrants and then deploy thr mobule towers and drones accordingly. The migrant movement prediction is based on weather, vegration, past crossing data and the terrain type.[48]

6. Advanced Border Tech Expansions and Pilots

The CBP has deployed the Intelligent Video Analytics (IVA) which themselves detect suspicious activity from the videos it gets from the surveillance technology.[49] Fiber Optic Intrusion Detection Systems act as the wires which deter intrusion by actually sensing the vibrations,[50] similar to the Acoustic and seismic sensors which have recently also used AI kits sense vibrations and the sounds linked with border breaches. The Smart Border Lighting Systems use solar power and trigger the LED lights upon sensing movement.[51] Some others include Chemical Trace Detection, 3D Cargo Container Scanning Systems, Mobile X-ray Baggage Scanners, UUVs and Water-Based Surveillance, Aerial Mesh Network Nodes, Enhanced Tactical Communication Systems (ETCS) are all parts of the Advance border technology modernisation.

While these technologies are framed as necessary instruments of national defense and present a fake picture of sovereignty, their application often extends beyond deterrence and they enable systemic control, exclusion, and intrusion. Section 3 shifts focus to critically examine how these same tools, under the realist logic of securitization, have produced Humanitarian violations on both structural and individual levels.

Human Rights Under Siege: The Cost of Technological Enforcement

The enhancement of technology since the 9/11 has seen the integration of various kinds of technologies ranging from the surveillance tower, drone patrols, the predictive analysis, biometrics to AI powered tracking. This deployment has been justified under flag of realism has consequentially also been the linked to the violations of human rights especially for the travelers, migrants, asylum seekers and indigenous community that lives across borders.

1. Infringement of Privacy through Biometric Surveillance and Data Collection

In a realist security environment, even body becomes site of state control subjected to extraction, coding, and classification. Technologies such the Perceptics License Plate Reader systems, Palantir FALCON Database, Traveler Verification Service (TVS), CBP's Biometric Exit Program lack transparency, could include the third part sharing without consent and the algorithmic biases infringe basic human privacy, expose sensitive information, retention of their records without consent. As of 2024 January, CBP scanned over 270 million individuals using the facial recognitions through the TVS System at various POEs. DHS has a goal of biometrically identifying 97% of international travelers in the US by the end of 2025. These systems are very much prone to leaks. One case in 2019 involved cyberattack on Perceptics which caused the leakage of 184,000 images of people, passport photos and the license plates on dark web. Pictures had been acquired from border surveillance, leading to privacy breaches. This also caused violation of DHS (MD 047-01-007) policy of safeguarding and erasure of personal information within 12-24 hours. These systems are also susceptible to the misidentification due

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[47] Electronic Frontier Foundation, "ICE Is Watching You: A Deep Dive into ICE's Surveillance Infrastructure," updated March 2024, https://eff.org.

[48] U.S. Government Accountability Office, *Border Security: CBP Should Improve Data Collection and Analytics to Better Support Border Enforcement*, GAO-22-105045 (2022), pp. 39–44.

[49] U.S. Department of Homeland Security, *Artificial Intelligence Use Case Inventory*, January 2025, https://data.aclum.org/storage/2025/01/DHS_www_dhs_gov_data_AI_inventory.pdf.

[50] Sintela, "Perimeter Intrusion Detection System PIDS," https://sintela.com/pids-perimeter-intrusion-detection/#:~:text=Perimeter%20Intrusion%20Detection%20System%20PIDS,top%20configuration.

[51] Jim Davis, "Smart Cities Leverage Edge Computing, AI to Regulate Borders, Save First Responders," *Edge Industry Review*, July 16, 2020, https://www.edgeir.com/smart-cities-leverage-edge-computing-ai-to-regulate-borders-save-first-responders-20200716.

to wrong facial recognition. A report by the GAO showed TVS systems showed false positives 16 time at a higher rate for people of color rather than Whites. Another case of Mismatch in FALCON data happened in 2022 when a middle Eastern lawyer with a Us citizenship at Buffalo–Fort Erie border was held because his name matched to an individual who had been on a watchlist by Interpol organization. He was wrongly held there for more than 2 hours, questioned without an attorney and accessed his encrypted phone using the Cellebrite UFED. No justification for this act was provided to him. This act raises questions on the accuracy of these automated intelligent tools and violated the protection from government based criminal investigation of its citizens in US constitution.

2. Bodily Integrity Violations through DNA and Iris Scanning Systems

CBP Iris Enrollment Kits, ICE Biometric Identification Transnational Migration Alert Program (BITMAP), FBI CODIS integration via DHS, ANDE Rapid DNA System (RDS2 and RDSv3) are all involved in DNA and IRIS scans of people. Under the Trump 2016 administration, The BNA fingerprint Act was amended and included the DNA collection from all the migrants in the U.S. in the past 3 years between January 2020 and January 2024, the DHS collected the DNA samples from more than a million migrants 80% of whom did not even have had a link with any crime. Under the guise of the identity verification protocols, the CBP had started to do iris scanning in various areas even for the legal entrants. These systems do not spare even the minors. In a report by human rights watch and the ACLU, the ANDE RDS2 system was done on children as young as 5 years old in the Ursula Detention center in McAllen. The DNA information is then handed to CODIS database which managed the criminal database without any parental consent. This is how this technology exploited the UN rights of the child and it shows how these technologies themselves invade the very rights which US is a signatory to.

3. Criminalization of Migrants through Predictive Algorithms and Risk Scoring Tools

Technologies such as Palantir FALCON Analytical Platform**,** ICE's Risk Classification Assessment (RCA) Tool**,** OBIM (Office of Biometric Identity Management) Matching Algorithms**,** IDENT-HART Transition System**,** Enforce Alien Removal Module (EARM) are Predictive Algorithms and Risk Scoring Tools**.** These technology violates a person's right to fair and due process before any legal procedures.These systems use AI and based on secret statistics, flag individuals as "risks" they pose. Since 2006, the CBP has used the ATS to assign people their risk scores to people who enter or leave the country. These scores can hold people at ports for additional screening and investigation. The DHS itslef says that these might be inaccurate data and these scores are kept for 40 years and are sent to various agencies internationally.[52] Traveller cannot get their own scores, which raises concern for accuracy and the fairness because they are opaque, resulting in violation of privacy act of 1974. In 2017, the Trump administration also adopted to use the extreme vetting software, although full use did not actually happen due to ethical concerns.[53] The software checked the foreigner's social media. These systems heavily criminalize and detain the individuals. the software was later altered to 'detain only' option for individuals after the Trump's zero tolerance policy, which meant that every person which would be arrested by ICE would always be held for detention.[54] This immediately caused the detention rate to rise triple times and even held people with no criminal record. This approach generally flags people for

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[52] Electronic Frontier Foundation. "Lawsuit Demands Answers About Government's Secret 'Risk Assessment' Scores." *Electronic Frontier Foundation*, December 19, 2006. https://www.eff.org/press/archives/2006/12/19.

[53] Harwell, Drew, and Nick Miroff. "ICE Just Abandoned Its Dream of 'Extreme Vetting' Software That Could Predict Whether a Foreign Visitor Would Become a Terrorist." *The Washington Post*, May 17, 2018. https://www.washingtonpost.com/news/the-switch/wp/2018/05/17/ice-just-abandoned-its-dream-of-extreme-vetting-software-that-could-predict-whether-a-foreign-visitor-would-become-a-terrorist/.

[54] Levinson, Reade, and Kristina Cooke. "Trump's Catch-and-Detain Policy Snares Many Who Call the U.S. Home." *Reuters*, July 24, 2018. https://www.reuters.com/investigates/special-report/usa-immigration-court/.

detention causing a mass humanitarian, causing the infringement of 5th amendment of human which include fair procedural treatment. In 2017 the ICE with the aid of the "Extreme Vetting Initiative" uses AI to scan people's social to check whether they are involved in crimes or connected to an illicit terror group. This was called digital muslim ban since it heavily targeted muslims. Upon huge criticism, government hired human analysts on $100 million contract to monitor people's social media. Another program by the name Visa Lifecycle Vetting checks visa applicants for their comments and activity leading to denial of visa based on vague affiliations online. The state department now requires peole to submit their social media handles upon application, causing concerns for freedom of speech. Palestinian Harvard student was deported because his phone showed his friends posting critical views on U.S. despite clearing he had no connection to it, the US cancelled his Visa and he got deported.[55] ICE has also used various dataaes to identify any kind of support of ganster member by exploring social media and police records of people. However this has led to the police to arrest latino teens for being in the MS-13 gangs.[56] In 2018 ICE was held by the federal courts that it cannot actually detain the teens based on vaguely saying that they belong to a certain gang group.

4. Violation of Digital Rights through Warrantless Electronic Device Searches

Technologies include various software like the Cellebrite UFED (Universal Forensic Extraction Device), Grayshift GrayKey System, CBP Digital Forensics Units (DFU), ICE Homeland Security Investigations (HSI) Mobile Forensics Labs. These are involved in the extraction of a person's personal data, storage databases and multiple mining software which reveal deep information. The warrantless searches are also part of "border search exception" to the Fourth Amendment, which conducts searches of person phone even when they are not in the suspicion list. In the year 2018, a number of migrants came into the US and the CBP sectioned them into various groups. These included the human activists, the reporters and attorneys who were especially intensely screened. A watchlist actually showed that at the San Diego Tijuana border crossing how 59 US and others were sent for secondary inspections. The US made documents containing of private information of people. It looked more like an intelligence move rather than proper law enforcement, ultimately raising concerns for the individual's 1st amendment law. This underscores how even the legally protected individuals such as the journalist are also at risk of their data being breached. The impact of this was that journalists altogether either started to cease going to border and using burner phones in order for their citations to be protected. With an advisory approval, the authorities also investigate a person's personal emails, their messages and access their photos. In 2020, ACLU and Electronic Frontier Foundation (EFF) advocated lawsuit Alasaad v. Mayorkas in favour of several traveller including the journalist, US Air force veteran whose phone had been in CBP custody for more than 40 days Sid Bikkannavar, NASA engineer who's phone was forcefully unlocked.[57] This causd the DHS to provide their justification for high screening only upon high suspician. But generally the investigation is still done at a broad level even now, leading to erosion of freedom, constitutional protection, privacy loss. however this reversed in 2021 again as the DHS continued with the general inspection even without suspicion. In 2022 it was revealed by Senator Ron Wyden that CBP was also involved in the

[55] Natanson, Hannah. "Palestinian Student Originally Denied Entry to U.S. Now Allowed to Attend Harvard." *The Washington Post*, September 3, 2019. https://www.washingtonpost.com/education/2019/09/03/palestinian-student-originally-denied-entry-us-now-allowed-attend-harvard/.

[56] McCormack, Simon, and JP Perry. "How This NY County is Helping ICE Trap Teens." *New York Civil Liberties Union*, June 20, 2019. https://www.nyclu.org/commentary/how-ny-county-helping-ice-trap-teens.

[57] Snopes Staff. "American-Born JPL Scientist Forced to Unlock a NASA Phone by U.S. Customs and Border Protection?" *Snopes*, February 13, 2017. https://www.snopes.com/fact-check/jpl-scientist-cbp-phone/.

storage of the acquired data from about 10000 devices of people crossing these borders.[58] This data can be accessed by any agent of CBP without even telling the people that their data will be stored. CBP tried to cover up this act by saying how this just an investigation action which does not create a huge impact but travellers fear this might just turn into a permanent long term practice of surveillance. CBP conducted over 40000 devices searched in the year 2023 which rose so much from 2015 where it was only 8500.[59] In summary all these acts are a threat to a person's privacy since these devices check and store personal information, often lacking warrants for an investigative process. CBP's longterm retention of data without consent is a direct violation of 1st amendment rights. This causes a chilling effect where all together people might adopt preventive measoure to stay out of trouble.

5. Psychological and Physical Harms Caused by Electronic Monitoring Technologies

Technologies involve the are the GPS ankle trackers, SmartLINK App by BI Inc which are the parts of ICE program of ATD (alternative to detention) asking people for their Check in selfies and records location, ICE's Intensive Supervision Appearance Program (ISAP)**,** Facial Recognition + Geofencing in Mobile Surveillance. This program came to significance when public spoke against the detention of migrant families and asylum seekers. in 2020 over 111,000 were part of this program.[60] In early 2024 194,000 still under supervision.[61] The largest part of the ATD program is the Intensive Supervision Appearance Program (ISAP) which includes almost 125000 people in 2021. they surveilled peole using the GPS ankle monitors (46%), SmartLINK app (42%) and remaining surveillance is done by the telephone checks. there is a 4 times more increase in such electronic monitoring. ICE has invested more than 2.2 billion dollars in the handling of this to various organisations.[62] Even though there is a high compliance rate there comes so much harms such as psychological harms associated with constant surveillance. 88% people with ankle monitos suffer from anxiety and 12% suicidal.[63] It also cause physical harm, restriction movement and public shame. these monitors often face the malfunctions, evoking the three strikes policy even when its not the person's fault leading to redetention, penalisation and unfair treatment. violation of the fairness in treatment and due processes. Similarly the smartlink app is also used to check photos, Location and a constant oversight. causing fear, anxiety and confusion. An alternative kind of monitoring was introduced back in 2026 by the name Family Case Management Program (FCMP) where instead of Apps, the managers informed about the court dates reminders, support of asylum seekers etc. However this policy discontinued when the 'zero tolerance' policy came in effect.[64]

6. Erosion of Indigenous Rights through Surveillance Towers and Drones

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[58] Harwell, Drew. "Customs Officials Have Copied Americans' Phone Data at Massive Scale." *The Washington Post*, September 15, 2022. https://www.washingtonpost.com/technology/2022/09/15/government-surveillance-database-dhs/.

[59] Bhandari, Esha, Nathan Freed Wessler, and Noa Yachot. "Can Border Agents Search Your Electronic Devices? It's Complicated." *ACLU of Texas*, March 21, 2025. https://www.aclutx.org/en/news/can-border-agents-search-your-electronic-devices-its-complicated.

[60] U.S. Government Accountability Office. *Alternatives to Detention: ICE Needs to Better Assess Program Performance and Improve Contract Oversight*. GAO-22-104529. Washington, DC: U.S. Government Accountability Office, 2022. https://www.gao.gov/products/gao-22-104529.

[61] U.S. Immigration and Customs Enforcement. *Fiscal Year 2023 Annual Report*. Washington, DC: U.S. Department of Homeland Security, 2023. https://www.ice.gov/doclib/eoy/iceAnnualReportFY2023.pdf.

[62] U.S. Government Accountability Office. *Alternatives to Detention: ICE Needs to Better Assess Program Performance and Improve Contract Oversight*. GAO-22-104529. Washington, DC: U.S. Government Accountability Office, 2022. https://www.gao.gov/products/gao-22-104529.

[63] Betancourt, Sarah. "'Traumatizing and Abusive': Immigrants Reveal Personal Toll of Ankle Monitors." *The Guardian*, July 12, 2021. https://www.theguardian.com/us-news/2021/jul/12/immigrants-report-physical-emotional-harms-electronic-ankle-monitors.

[64] Human Rights Watch. *Dismantling Detention: International Alternatives to Detaining Immigrants*. November 3, 2021. https://www.hrw.org/report/2021/11/03/dismantling-detention/international-alternatives-detaining-immigrants.

Technologies include the Predator B Drones (MQ-9 Reaper)**,** Anduril Autonomous Surveillance Towers (ASTs), Mobile Surveillance Capability Units (MSCs), Ground sensors, seismic intrusion systems, and Smart Border Lighting, Predator B Drones (MQ-9 Reaper)**,** CBP Remote Video Surveillance Systems (RVSS)**,** Integrated Fixed Towers (IFTs) by Elbit Systems. The US stringent security initiatives has collided with the Indigenous rights of the people. for example in Arizona, the border wall constructed under Organ Pipe Cactus National Monument, which is holy for the Tohono O'odham Nation. They destroyed this whole area using explosives destroying their ancestoral burial of Apache warriors, saying how they were not even informed before saying it felt like an occupation.[65] The government actually violated its own acts of preservation. They have also allowed the CBP to install sixteen IFTs which are capable of detecting weapons and concealed stuff even miles away but people say they always feel like they are being surveilled constantly at their ceremonies and personal gatherings.[66] Similarly, Kumeyaay tribes in Califormia protested a wall cosntruction and the dug up of the remains of deceased.[67] The drones, so many checkpoints and the patrols have caused abuse and harrassment and theindigenous feel as though they are not able to walk frreel in their own lands. The UN itself has heavily criticized the US government for violating the UNDRIP. A person in 2018 was run over by the border patrols. A citizen by the name Raymond Mattia of Tohono O'odham Nation was even shot dead at night in the May of 2023 right outside his home by the border patrol.[68] They criticise them for behaving aggressively and intrude personal spaces, often they are racially profiled and questioned at several places. This vilates the right to freely move and violates the Gadsden Purchase traty which enables to move back and forth the borders. The indigenous lands have been eroded and the wall projects have severely hurt the ecosystem. A californian indigenous population of Kumeyaay called upon the tower erections and wall building on their Jacumba Mountains which is essential place for them. In 2020 they actually blocked site where the DHS aimed to construct wall without their consent, saying that this would impact the water sources and wildlife there. Texas Carrizo Comecrudo / Esto'k Gna Tribe are not recognized but live in Rio Grande valley condemned the wall projects. The community came together to construct a protest site called the yalui village to discuss the environmental distructions including damage to peyote gardens and mesquite groves. The Quitobaquito springs in the Tohono O'odham started to dry up as the water rom it was diverted for concrete makng impacting food production.[69] The Akwesasne Mohawk community also faces the surveillance on their own land and rstricts their movement across border which had been given to them according to the Jay Treaty of 1794. These border patrols have also targeted women for harrassment. The Ofelia Rivas who was pointed gun at her head for speaking her own language speaks volume.[70] Even ancestral lands and treaty protections are expendable under realism when the state perceives their strategic value in maintaining border control. From a realist standpoint, these measures

65 Myers, Jessica. "Blasting Sacred Sites for Border Wall 'Forever Damaged' Tribes." *Cronkite News*, February 26, 2020. https://cronkitenews.azpbs.org/2020/02/26/blasting-sacred-sites-for-border-wall-forever-damaged-tribes/.

66 Blanchfield, Caitlin, and Nina Valerie Kolowratnik. "Persistent Surveillance: Militarized Infrastructure on the Tohono O'odham Nation." *The Avery Review*, no. 40 (May 2019). https://averyreview.com/issues/40/persistent-surveillance.

67 Fry, Wendy. "Tribe Seeks to Block Border Wall." *Los Angeles Times*, August 17, 2020. https://enewspaper.latimes.com/infinity/article_share.aspx?guid=c5703e5f-7461-47b9-ae79-c3722a422706.

68 Associated Press. "US Officials Release Bodycam Video of Man's Fatal Shooting by Border Agents." *The Guardian*, June 23, 2023. https://www.theguardian.com/us-news/2023/jun/23/raymond-mattia-tohono-oodham-shot-dead#:~:text=US%20officials%20release%20bodycam%20video,in%20southern%20Arizona%20last%20month.

69 Myers, Jessica. "Blasting Sacred Sites for Border Wall 'Forever Damaged' Tribes." *Cronkite News*, February 26, 2020. https://cronkitenews.azpbs.org/2020/02/26/blasting-sacred-sites-for-border-wall-forever-damaged-tribes/.

70 Parrish, Will. "The Government Can and Will Just Waive Any Rights That We Have Today." *The Real News Network*, May 7, 2019. https://therealnews.com/government-can-waive-rights-tohono-oodham.

represent success, not the failure of state power. But from a human rights view, they are systemic abuses guising as security imperatives

Conclusion

This research has explored the historical evolution, enforcement, and implications of policies of U.S. border control management through the lens of the realist theoretical framework, showing the state priorites of sovereignty and national security over the human rights. The evolution showed how early policies such as the Chinese Exclusion Act and Operation Wetback were racially motivated and adopted in a need to preserve national identity and internal order. Post-9/11, this evolved into a more securitized area with the creation of DHS, various enforcement technologies and policies, highlighting shift towards treating migration as a national security threat, clearly an inclination towards the realism. Technological transformation of border enforcement included the aerial drones and biometric scanners to predictive analytics and surveillance towers, the U.S. has redefined border control through a highly sophisticated technological infrastructure. These technologies not only embody the realist emphasis on deterrence and territorial integrity but also function as tools for invisible yet expansive state control. Human rights implications are direct cause of these technologies and how they have infringed on privacy, bodily integrity, freedom of movement, and indigenous sovereignty. This chapter underscored how technologies meant for national security are increasingly being used to surveil, profile, and exclude marginalized communities.

The findings of this research underscore that the post-9/11 evolution of U.S. border control has been shaped predominantly by a realist security paradigm, whereby technology is deployed not just for deterrence but for pervasive, preemptive control. Surveillance towers, aerial drones, and AI-powered analytics serve as extensions of state sovereignty, enabling the state to project power and control deep into borderlands—well beyond traditional checkpoints. Biometric identity systems such as facial recognition and iris scanning, while framed as neutral instruments, often misidentify people of color and store data without consent, leading to racial profiling and privacy infringements. Risk scoring algorithms and predictive tools lack transparency and procedural safeguards, flagging individuals for detention based on opaque and biased criteria. These mechanisms have especially targeted vulnerable migrant groups—including minors—and have criminalized mobility rather than regulated it justly. Furthermore, the use of border technologies on indigenous lands has disrupted sacred spaces, violated treaty rights, and caused deep psychological distress, evidencing systemic disregard for indigenous autonomy and legal protections. Even programs designed as humane alternatives to detention—like GPS ankle monitors and SmartLINK apps—have created psychological trauma, restricted mobility, and stigmatized migrants under constant surveillance, disproportionately affecting families and children.

Based on these findings, this study recommends a rights-centered reassessment of border technologies. Rather than advancing solely state-centric control objectives, technological adoption must undergo ethical review to ensure alignment with humanitarian obligations. Independent oversight bodies should be established to monitor surveillance tools and ensure accountability. AI-driven risk scoring tools must be made transparent, with appeal mechanisms available to those affected. Data retention policies must strictly follow constitutional privacy protections, and warrantless electronic device searches should be prohibited, reinstating Fourth Amendment safeguards at the border. The use of biometric data should be limited to cases with clear criminal necessity. In the case of indigenous lands, the U.S. government must implement formal consultation procedures with tribal communities before any deployment of surveillance or construction, respecting both environmental sensitivities and treaty rights. Moreover, existing

punitive alternatives to detention (ATD) should be replaced with support-based systems that prioritize psychological care, legal guidance, and humane treatment. The use of electronic monitors on minors and families should be banned entirely. Effective immigration management can coexist with the principles of dignity, privacy, and justice, but only if security mechanisms are critically re-evaluated in light of their social and ethical consequences.

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