

# Havana Syndrome: A Case of Fifth Generation Warfare

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## ABSTRACT

Over a thousand individuals have been diagnosed with Havana Syndrome and many experts have concluded that it is caused by an unknown DEW. The article argues that Havana Syndrome has all the characteristics of a Fifth Generation Warfare (5GW) attack and that the 5GW theory may provide a suitable framework for analyzing the intent of attackers, which will help countering and deterring future attacks. 5GW posits that the manipulation of perception and narratives is critical to achieving an aggressor's objectives, that attacks are covert or ambiguous, that violence is highly dispersed, and that a major objective is to undermine the legitimacy of a state and its ability to function.

**Keywords:** Havana Syndrome, Directed Energy Weapons, Fifth Generation Warfare

## Síndrome de La Habana: un caso de guerra de quinta generación

### RESUMEN

Más de mil personas han sido diagnosticadas con el síndrome de La Habana y muchos expertos han llegado a la conclusión de que es causado por un DEW desconocido. El Síndrome de La Habana tiene todas las características de un ataque de Guerra de Quinta Generación (5GW) y la teoría de 5GW puede proporcionar un marco adecuado para analizar la intención de los atacantes, lo que ayudará a contrarrestar y disuadir futuros ataques. 5GW postula que la manipulación de la percepción y las narrativas es fundamental para lograr los objetivos del agresor, que los ataques son encubiertos o ambiguos, que la violencia está muy dispersa y que un objetivo importante es socavar la legitimidad de un Estado y su capacidad para funcionar.

**Palabras clave:** Síndrome de La Habana, armas de energía dirigida, guerra de quinta generación

# 哈瓦那综合征：第五代战争案例

## 摘要

已有超过一千人被诊断患有哈瓦那综合征，并且许多专家得出结论，认为这是由未知的定向能武器引起的。哈瓦那综合征具有第五代战争(5GW)攻击的所有特征，并且5GW理论能提供合适的分析框架来分析攻击者意图，这将有助于反击和威慑未来袭击。5GW认为，操纵感知和叙事对于实现侵略者的目标而言至关重要，攻击是隐蔽或模糊的，暴力是高度分散的，并且主要目标是破坏国家的合法性及其运作能力。

关键词：哈瓦那综合征，定向能武器，第五代战争

## Introduction

Since 2008 there has been a discussion about a potential new Cold War that would again divide the world into East and West engaged in a geopolitical competition with each other.<sup>1</sup> Although the notion of a new Cold War has been disputed during the Obama administration, it is now widely accepted that the West is in a Cold War-like competition with Russia and China, following the Russian invasion of Ukraine and the growing tensions in the Taiwan strait.<sup>2</sup> Already during the Trump administration there were indications of a covert conflict between

the West and Russia, as indicated in the Russian interference with the U.S. elections in 2016 and the Skripal affair of 2018.<sup>3</sup>

In late 2016 another phenomenon appeared, namely ‘health attacks’ on U.S. and Canadian diplomats in Cuba with an unknown mode of attack, which was first reported by the New York Times in August 2017.<sup>4</sup> More US diplomats and intelligence officers around the world became victim of the so-called Havana Syndrome, named after the first location, where this phenomenon has been observed and documented. There have been multiple U.S. government investigations of the phe-

1 Edward Lucas, *The New Cold War: Putin's Russia and the Threat to the West* (New York: St. Martin's Press, 2009).

2 Robert Levgold, *Return to Cold War* (Cambridge, UK: Polity, 2016), 89; Hal Brands, *The Twilight Struggle: What the Cold War Teaches Us about Great Power Rivalry Today* (New Haven, CT: Yale University Press, 2022), 2.

3 Rebekah Koffler, *Putin's Playbook: Russia's Secret Plan to Defeat America* (Washington, DC: Regnery Gateway, 2021), XIII, 245-246.

4 Emily Cochrane, “Health Drove US Envoys Out of Cuba,” *New York Times*, August 11, 2017.

nomenon coming to different conclusions with speculations ranging from new types of unknown directed energy weapons (DEWs) to crickets and mass hysteria as possible explanations for the Havana Syndrome.<sup>5</sup> Medical research clearly indicates that some individuals have diagnosable and provable physiological symptoms that form a medical syndrome.<sup>6</sup> After many years of observing this phenomenon it is now time to go beyond the question as to whether the Havana Syndrome is real and ask the question as to what objectives may be behind the covert DEW attacks.

Considering the current geopolitical tensions and the Russian track record of conducting covert attacks on U.S. diplomats and intelligence, as well as Russian research in unorthodox weapons technologies, it is a reasonable conclusion that the Havana Syndrome is caused by deliberate covert attacks by Russia or another state or non-state actor, pursuing some strategic objective. This paper argues that the Havana Syndrome fits well into the framework of

Fifth Generation Warfare (5GW) and may be an attempt to sabotage U.S. foreign policy and contribute to the political destabilization of the U.S. The paper will first explain 5GW and interpret it as cognitive warfare, a term suggested by NATO, before discussing the Havana Syndrome. The final step will be to put the covert “health attacks” in the framework of 5GW in order to speculate about the actor(s) and intentions behind using DEW for covert attacks on U.S. personnel.

### **Fifth Generation Warfare (5GW) as Cognitive Warfare**

Since the late 1980s there has been a debate among military professionals and academics as to whether the so-called Clausewitzian concept of war is still adequate or whether war would be fundamentally changing its character to now include conflict short of war, non-political violence, non-violent strategies, cyberwar, and covert modes of conflict.<sup>7</sup> In short, some military theorists sought to broaden

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5 U.S. Department of State, “Havana Cuba: Accountability Review Board,” June 2018, Declassified on October 1, 2019; JASON, “Acoustic Signals and Physiological Effects on U.S. Diplomats on Cuba,” MITRE Corporation, November 2018; CDC, “Cuba Unexplained Events Investigation: Final Report,” December 3, 2019, available at: <<https://nsarchive.gwu.edu/documents/cdc-report-havana-syndrome-medical-mystery-remains-unresolved/CDC%20%2320200983DOS255%20Final%20Report.pdf>>; Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies* (Washington, DC: National Academy of Sciences, 2020); “IC Expert Panel on Anomalous Health Incidents Report: Executive Summary,” Office of the Director of National Intelligence, declassified February 1, 2022; Robert W. Baloh and Robert E. Batholomew, *Havana Syndrome: Mass Pyschogenic Illness and the Real Story Behind the Embassy Mystery and Hysteria* (Cham, Switzerland: Copernicus, 2020).

6 Randal L. Swanson, Stephen Hampton, Judith Green-McKenzie, Ramon Diaz-Arrastia, Sean Grady, Ragini Verma, Rosette Biester, Diana Duda, Ronald L. Wolf, and Douglas H. Smith, “Neurological Manifestations Among US Government Personnel Reporting Directional Audible and Sensory Phenomena in Havana, Cuba,” *JAMA* 319, no. 11 (2019): 1125-1133.

7 For an overview of these ideas see John Arquilla and David Ronfeldt, *In Athena’s Camp: Preparing for Conflict in the Information Age* (Santa Monica, CA: RAND, 1997).

the concept of war in order to include measures and modes of conflict that have not traditionally been considered to be war. One of the earliest attempts to redefine war in this manner was the Fourth Generation Warfare school, which postulated that modern warfare can be divided into three distinctive generations characterized by manpower/ mass, firepower/ attrition, and maneuver with a fourth generation emerging that would be based on insurgency or political warfare.<sup>8</sup>

There have been a couple of variations in the Fourth Generation Warfare school, with Martin van Creveld emphasizing the decay of the nation state and the end of the Westphalian order, the New Wars school emphasizing warlordism and the new war economies that keep conflicts going for decades, and the evolved insurgency school that emphasized new aspects in current insurgencies.<sup>9</sup> By the early 2000s some 4GW theorists moved on to declaring the emergence of a fifth generation, which will be shown is focused on dominating the human domain by way of manipulating perceptions.

### ***The Original Understanding of 5GW***

5GW was a theoretical response to new modes of terror as observed in the Amerithrax attack and the 9/11 attacks, which indicated that some non-state actors and super-empowered individuals could pose a serious threat to major nations, using commercial technology that has been weaponized.<sup>10</sup> There were a couple of military journal articles in the 2000s about 5GW, which failed to establish any common definition of 5GW.<sup>11</sup> In 2010 Daniel H. Abbott published a collection of articles in *The Handbook of 5GW*, which brought more clarity and a better theoretical foundation for what 5GW may be.<sup>12</sup> In essence, 5GW is warfare at the societal level that targets a society or civilian sub-groups rather than the military. It is suggested that 5GW would amount to “[m]oral and cultural warfare [that] is fought through manipulating perceptions and altering the context by which the world is perceived.”<sup>13</sup> This would be accomplished by clandestine means and a minimum of violence, making it very difficult to recognize 5GW as acts

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8 William Lind, Keith Nightingale, John Schmitt, Joseph Sutton, and Gary Wilson, ‘The Changing Face of War: Into the Fourth Generation’, *Marine Corps Gazette*, March 2016, 86-90.

9 Martin van Creveld, *The Transformation of War* (New York: Simon & Schuster, 1991); Mary Kaldor, *New and Old Wars: Organized Violence in a Global Era* (Cambridge, UK: Polity, 2001); and Thomas Hammes, *The Sling and the Stone: On War in the 21<sup>st</sup> Century* (St. Paul, MN: Zenith Press, 2004).

10 Thomas Hammes, “Fourth Generation Evolves, Fifth Emerges,” *Military Review* (May-June 2007): 20.

11 Donald J. Reed, “Beyond the War on Terror: Into the Fifth Generation of War and Conflict,” *Studies in Conflict & Terrorism* 31, no. 8 (2008): 689.

12 Daniel H. Abbott (ed.), *The Handbook of 5GW: A Fifth Generation of Warfare?* (Ann Arbor, MI: Nimble Books LLC, 2010).

13 Shane Deichman, “Battling for Perception: Into the 5<sup>th</sup> Generation?,” in: Abbott (ed.), *The Handbook of 5GW*, 12.

of war, which is acknowledged by the authors: “violence is so dispersed that the losing side may never realize that it has been conquered. The very secrecy of 5GW makes it the hardest generation of war to study.”<sup>14</sup>

Another key idea in *The Handbook of 5GW* is that belligerents may rely on the manipulation of proxies for attacking their enemies indirectly in order to create confusion about who the real enemy is. According to David Axe, “5GW is when a party exploits or encourages an existing or emerging crisis to achieve strategic goals that those involved in the crisis are not aware of. 5GW is a form of stealthy proxy war.”<sup>15</sup> This means that the measures chosen are deliberately ambiguous or covert, so that activities appear to be benign rather than malign, are not visible at all, or are likely to be attributed incorrectly to hide the real aggressor.

### ***Unrestricted Warfare***

Another theory closely associated with 5GW originates from two Chinese military officers, who published a book in 1999 with the title *Unrestricted Warfare*.<sup>16</sup> The basic argument in this book is that war is not limited to the employment of military means but would include every and all means that can be

used for weakening an adversary with no limitation to what may be done.<sup>17</sup> The authors suggest that “there is nothing in the world today that cannot become a weapon, and this requires that our understanding of weapons must have an awareness that breaks through all boundaries.”<sup>18</sup>

Non-military war would include trade wars (attack another country’s economy through sanctions), financial wars (stock and currency market manipulation), terrorism (WMD and cyber), ecological war (environmental modification weapons), psychological warfare (spreading rumors to break the enemy’s will), smuggling warfare (cause chaos in markets), drug warfare (harm other countries by spreading narcotics addiction), network warfare (cyber warfare), technological warfare (establish technological monopolies), fabrication warfare (complex deceptions), resources warfare (seizing critical resources), economic aid warfare (use aid as leverage over others), cultural warfare (become the leading culture and assimilate other cultures), and international law warfare (use the rules of international law against others).<sup>19</sup>

Both Donald Reed and George Michael have connected *Unrestricted Warfare* to 5GW in the sense that it ex-

14 Daniel H. Abbott, ‘Introduction’, in Abbott (ed.), *The Handbook of 5GW*, 10.

15 David Axe, ‘Piracy, Human Security, and 5GW in Somalia’, in: Abbott (ed.), *The Handbook of 5GW*, 152.

16 Qiao Liang and Wang Xiansui, *Unrestricted Warfare* (Beijing: PLA Literature and Arts Publishing House, 1999).

17 Liang and Xiansui, *Unrestricted Warfare*, 56, 170.

18 Liang and Xiansui, *Unrestricted Warfare*, 25.

19 Liang and Xiansui, *Unrestricted Warfare*, 50-55.

pands the scope of warfare in terms of the means, the geography, and the types of belligerents (both state and nonstate).<sup>20</sup> The authors of *Unrestricted Warfare* made it clear that criminal means are acceptable in this new type of war, which can be also summed up, as Mark Galeotti suggested, as a “weaponization of everything.”<sup>21</sup> Robert Bunker, who reviewed the book compared it to Mao Zedong’s *On Guerrilla Warfare* and suggested that “the significance of this work cannot be overstated.”<sup>22</sup>

### **Cognitive Warfare**

The term cognitive warfare is the latest descriptor of a new mode of conflict that aims to psychologically manipulate target audiences in support of strategic objectives. It seems to have originated from an article published in 2021 on NATO’s website with the title: “Countering Cognitive Warfare: Awareness and Resilience.”<sup>23</sup> The authors claim that:

“[i]n cognitive warfare, the human mind becomes the bat-

tlefield. The aim is to change not only what people think, but how they think and act. Waged successfully, it shapes and influences individual and group beliefs and behaviours to favour an aggressor’s tactical or strategic objectives. In its extreme form, it has the potential to fracture and fragment an entire society, so that it no longer has the collective will to resist an adversary’s intentions. An opponent could conceivably subdue a society without resorting to outright force or coercion.”<sup>24</sup>

Of course, these general ideas are not new and are a staple in what has been traditionally termed psychological operations or Psyops and also what has previously referred to as “hybrid warfare” by NATO or “new generation warfare” by Russian authors.<sup>25</sup> What is new is the idea that cognitive attacks can achieve strategic objectives and may be a substitute for a direct or overt military

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20 Reed, ‘Beyond the War on Terror: Into the Fifth Generation of War and Conflict’, 697; George Michael, *Lone Wolf Terror and the Rise of Leaderless Resistance* (Nashville, TN: Vanderbilt University Press, 2012), 157.

21 Mark Galeotti, *The Weaponisation of Everything: A Field Guide to the New Way of War* (New Haven, CT: Yale University Press, 2022).

22 Robert Bunker, “Unrestricted Warfare: Review Essay I,” *Small Wars and Insurgencies* 11, no. 1 (2000): 115.9,5 pt

23 Kathy Cao, Sean Glaister, Adriana Pena, Danbi Rhee, William Rong, Alexander Rovalino, Sam Bishop, Rohan Khanna, and Jatin Saini, “Countering Cognitive Warfare: Awareness and Resilience,” *NATO Website*, May 20, 2021, available at: <<https://www.nato.int/docu/review/articles/2021/05/20/countering-cognitive-warfare-awareness-and-resilience/index.html>>.

24 Cao e.a., “Countering Cognitive Warfare.”

25 Richards Kols, “NATO Must Meet Russia’s Hybrid Warfare Challenge,” *Atlantic Council*, July 3, 2018, <<https://www.atlanticcouncil.org/blogs/new-atlanticist/nato-must-meet-russia-s-hybrid-warfare-challenge/>>; S.G. Chekinov, and S.A. Bogdanov, “The Nature and Content of a New-Generation War,” *Military Thought* 10 (2013).

attack, which means that Western liberal societies could “lose the next war without a fight.”<sup>26</sup>

There may be also another novel dimension, which is the weaponization of neuroscience and the development of new weapons that target the brain or central nervous system to affect perception, emotion, mental capability, or human performance more generally.<sup>27</sup> Robert McCreight has termed them “NeuroStrike weapons” that could be employed in furtherance of cognitive warfare, which he considers to be “a genuine covert blitzkrieg on the mind and all its associated systems.”<sup>28</sup>

“The basic principle of a suggested **neurostrike weapon** is a fairly simple proposition. It entails a hand held, or platform mounted, mixture of an RF, directed energy pulse or **neurocognitive disrupter, combined with acoustic wave dynamics** which is designed to harm, disable or permanently damage a human brain. It may also adversely affect the brains of several in close proximity to the attack.”<sup>29</sup>

McCreight has introduced the concept of the NeuroStrike weapon in the context of the Havana Syndrome, arguing that the US government needs to “devise a system to identify and detect

when **NeuroStrike** technologies are being used,” so that these incidents can be properly investigated. At this point, the U.S. national security establishment has still to grapple with the difficulty of detecting and verifying attacks, as argued by McCreight:

“The technology is insidious and consistently defies detection, prevention, medical verification and scientific confirmation aside from episodic reports that an anomaly has occurred and impaired the neurological and cognitive wellbeing of its intended targets. Absent a consensus medical case definition and serious causative technology research, these attacks as reported could easily be discounted as psychotic or delusional events where the complaining individuals were shunted aside as emotionally unstable. We must discern what the exact offending technology is and take steps to reduce and mitigate its continued use in future cases elsewhere.”<sup>30</sup>

In addition to the challenge of correctly attributing the attacks, it is very important to also understand the strategic intent behind them, so that appropriate steps can be taken to counter and deter future attacks.

26 Francois du Cluzel, “Cognitive Warfare,” *NATO Innovation Hub* (June-November 2020), available at: <[https://cognitive-liberty.online/wp-content/uploads/20210122\\_CW-Final.pdf](https://cognitive-liberty.online/wp-content/uploads/20210122_CW-Final.pdf)>.

27 du Cluzel, “Cognitive Warfare,” 21.

28 Robert McCreight, “Neuro-Cognitive Warfare: Inflicting Strategic Impact Via Non-Kinetic Effect,” *Small Wars Journal*, September 16, 2022.

29 McCreight, “Neuro-Cognitive Warfare.”

30 McCreight, “Neuro-Cognitive Warfare.”

## The Havana Syndrome

Starting from October 2016 several U.S. diplomats in Havana suffered from inexplicable health conditions. Six of them had to be flown from Cuba to Miami for emergency medical treatment. At least 21 American diplomats and some Canadian diplomats suffered symptoms by 2017.<sup>31</sup> Some of the symptoms included headaches, dizziness, insomnia, ear pain, temporary loss of hearing, weakened sense of balance, diminished memory, inability to regulate emotion, and indications of traumatic brain injury and concussion.<sup>32</sup> In December 2017 senior CIA officer Marc Polymeropoulos experienced a sudden onset of nausea in his Moscow hotel room, suffering a second attack two days later in a Moscow restaurant. He had to be flown out of the country and developed permanent symptoms similar to the diplomats in Havana, which

forced him to retire from his CIA career of 26 years in 2019.<sup>33</sup>

Several diplomats in Guangzhou, China suffered from similar symptoms, including brain injury in spring 2018.<sup>34</sup> It had started with one embassy employee hearing sounds and getting sick in late 2017 with more cases appearing in April 2018. Mark Lenzi, a security engineer at the consulate had to be flown out of China together with his family.<sup>35</sup> Further incidents involving U.S. and Canadian government personnel (diplomats, intelligence officers, and staffers) were reported in several locations around the world, including Cuba, China, Russia, Austria, India, Vietnam, Colombia, Uzbekistan, Kirgizstan, and Washington, DC.<sup>36</sup> Potential attacks occurred in a variety of settings such as “residences, on the street, in vehicles, and even at U.S. secure facilities.”<sup>37</sup> The incidents have seemingly escalated in geographic scope, frequency, and severity since late

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31 A. Erickson, “All the Theories What’s Happening to the Diplomats in Cuba: At Least 21 Americans Have Reported a Bizarre Rash of Symptoms,” *Washington Post Blogs*, September 30, 2017, available at: <<https://www.washingtonpost.com/news/worldviews/wp/2017/09/30/all-the-theories-about-whats-happening-to-the-diplomats-in-cuba/>>.

32 F. Robles and K. Semple, ‘U.S. and Cuba Baffled by “Health Attacks” on American Envoys in Havana,’ *New York Times*, August 12, 2017, A6.

33 J. Ioffe, “The Mystery of the Immaculate Concussion,” *GQ Magazine*, October 20, 2020, available at: <<https://www.gq.com/story/cia-investigation-and-russian-microwave-attacks>>.

34 H. Gardiner, “25<sup>th</sup> Person at U.S. Embassy Is Mysteriously Sickened,” *New York Times*, June 21, 2018, available at: <<https://www.nytimes.com/2018/06/21/us/politics/us-diplomat-cuba-embassy-illness.html>>.

35 S.L. Meyers and J. Perlez, “U.S. Diplomats Evacuated in China as Medical Mystery Grows,” *New York Times*, June 6, 2018.

36 Jack Dutton, “Havana Syndrome Symptoms Have Been Reported in these Countries,” *Newsweek*, September 21, 2021, available at: <<https://www.newsweek.com/havana-syndrome-china-austria-russia-1631102>>.

37 Paul Kolbe, Marc Polymeropoulos, and John Sipher, “Havana and the Global Hunt for U.S. Officers,” *The Cipher Brief*, October 24, 2021, available at: <<https://www.thecipherbrief.com/havana-syndrome>>.



2016.<sup>38</sup> Altogether over 1,000 people have been diagnosed with Havana Syndrome as of February 2022.<sup>39</sup>

### ***Mysterious “Anomalous Health Attacks”***

The State Department conducted an investigation and arranged for the medical examination of the affected diplomats to determine the cause of the symptoms. The University of Pennsylvania Center for Brain Injury and Repair found a number of conditions that could be objectively tested, such as evidence of concussion in persons with no history of brain injury and temporary auditory impairment.<sup>40</sup> With the help of neuroimaging it was found that there were significant “differences in whole brain white matter volume, regional gray and white matter volume, cerebellar tissue microstructural integrity, and functional connectivity in the auditory

and visuospatial subnetworks but not in the executive control subnetwork” compared to a control group.<sup>41</sup>

The existence of objective physiological conditions discovered in the majority of the affected diplomats should rule out some kind of mass psychosis as the cause, although this claim is implausibly still being made by some researchers.<sup>42</sup> Secretary of State Rex Tillerson characterized the incident as health attacks and there was initial speculation that the cause was a new type of sonic or acoustic weapon that had been developed by Russia or China.<sup>43</sup> An alternative explanation was that there was no intent to harm the diplomats but that a new type of eavesdropping equipment installed by the Cubans in the U.S. embassy had caused the symptoms.<sup>44</sup> The Trump administration took the matter seriously enough to expel 15 Cuban diplomats in retaliation for the

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38 U.S. Congress, H.R.4914 passed on August 3, 2021, available at: <<https://www.congress.gov/117/bills/hr4914/BILLS-117hr4914ih.pdf>>, Section 2 (13).

39 Ken Dilanian, “Havana Syndrome” Symptoms in Small Group Most Likely Caused by Directed Energy, Says U.S. Intel Panel of Experts, *NBC News*, February 2, 2022, available at: <<https://www.nbcnews.com/politics/national-security/havana-syndrome-symptoms-small-group-likely-caused-directed-energy-say-rcna14584>>.

40 Swanson e.a., “Neurological Manifestations Among US Government Personnel Reporting Directional Audible and Sensory Phenomena in Havana.”

41 R. Verma, R.L. Swanson, D. Parker, A.A. Ould Ismail, R.T. Shinohara, J.A. Alapatt, J. Doshi, “Neuroimaging Findings in U.S. Government Personnel with Possible Exposure to Directional Phenomena in Havana, Cuba,” *Journal of the American Medical Association* 322, no. 4 (2019): 336-347. doi:10.1001/jama.2019.9269.

42 R.W. Baloh and R.E. Bartholomew, *Havana Syndrome: Mass Psychogenic Illness and the Real Story Behind the Embassy Mystery and Hysteria* (Cham, Switzerland: Copernicus, 2020).

43 Robles and Semple, ‘U.S. and Cuba Baffled by “Health Attacks” on American Envoys in Havana.’

44 T. Wilkinson, “Did Covert Spy Gear Cause U.S. and Canadian Diplomats in Cuba to Lose Their Hearing?,” *Los Angeles Times*, August 10, 2017, available at: <<https://www.latimes.com/nation/la-fg-cuba-hearing-20170810-story.html>>.

health attacks.<sup>45</sup>

Some of the affected diplomats have sought legal remedies to get compensation from the government. Mr. Zaid, who is a lawyer representing some of them, stated: “It’s sort of naïve to think this just started now”... Globally, he added, covert strikes with the potent beams appear to have been going on for decades.<sup>46</sup> Furthermore, the National Security Agency gave Zaid ‘a statement on how a foreign power built a weapon “designed to bathe a target’s living quarters in microwaves, causing numerous physical effects, including a damaged nervous system.”<sup>47</sup>

Congress recently awarded long-term emergency health benefits to the affected diplomats, thereby acknowledging that their ordeal was serious, significant, real, and not imagined.<sup>48</sup> Affected diplomats have been awarded a lump sum compensation between \$140,000 and \$187,000 for hardship, permanent injury received on duty, and subsequent loss of employment.<sup>49</sup> More details are contained in House of Repre-

sentatives passed Bill H.R.4914 on August 3, 2021 that authorized the compensation. The bill states as rationale: “To impose sanctions against foreign persons and foreign governments in response to certain clandestine attacks on United States personnel, and for other purposes.”<sup>50</sup> In particular it suggested, “United States personnel have suffered persistent brain injuries after being targeted in attacks that have been increasing in number, geographic location, and audacity.”<sup>51</sup> The covert attacks would be “continuing and [the] expanding scope of these attacks has become a serious security concern that is also undermining the morale of United States personnel, especially those posted at overseas diplomatic missions.”<sup>52</sup>

### ***The Investigations***

The U.S. State Department tasked the National Academy of Sciences (NAS) to advise on how U.S. diplomats could be protected. A standing committee with 19 scientists led by David Relman, a professor of microbiology at Stanford University, reviewed and studied

45 Meyers and Perlez, “U.S. Diplomats Evacuated in China as Medical Mystery Grows.”

46 W. Broad, “Microwave Weapons Are Prime Suspect in Ills of U.S. Embassy Workers,” *New York Times*, September 1, 2018.

47 Broad, “Microwave Weapons Are Prime Suspect in Ills of U.S. Embassy Workers.”

48 Reuters, “‘Havana syndrome’ U.S. Diplomats Get Benefits in Spending Bill,” *Reuters*, December 16, 2019, available at: <<https://www.reuters.com/article/us-usa-budget-congress-diplomats/havana-syndrome-u-s-diplomats-get-benefits-in-spending-bill-idUSKBN1YK24Z>>.

49 Kylie Atwood, Katie Bo Lillis, and Jennifer Hansler, ‘Biden Administration to Compensate Some “Havana Syndrome” Victims Up to \$187,000,’ *CNN*, June 24, 2022, available at: <<https://www.cnn.com/2022/06/23/politics/havana-syndrome-victims-compensation/index.html>>.

50 U.S. Congress, H.R.4914 passed on August 3, 2021, available at: <https://www.congress.gov/117/bills/hr4914/BILLS-117hr4914ih.pdf>.

51 U.S. Congress, H.R.4914 passed on August 3, 2021, Section 2 (1).

52 U.S. Congress, H.R.4914 passed on August 3, 2021, Section 2 (13).

the Havana syndrome and it produced a final report that was declassified in December 2020.<sup>53</sup> Although not explicitly asked to resolve the mystery of the Havana syndrome, the committee's charter still included the investigation of plausible mechanisms that could have caused the reported symptoms. The committee looked at directed radio frequency energy, chemicals, infectious agents, and psychological and social factors.<sup>54</sup> The committee had access to the clinical diagnoses of all victims by the NIH and interviewed eight of them. Sound as a mechanism was apparently ruled out early on by the committee as there is no discussion of sonic weapons in the report. Chemicals were ruled out because the observed symptoms were not consistent with exposure to some kind of nerve agent or pesticide.<sup>55</sup> Biological agents were ruled out on similar grounds. The committee considered delusions and hallucinations that may have been caused by stress but concluded that "[t]he acute initial, sudden-onset, distinct and unusual symptoms and signs described in some affected DOS

personnel (see Section 3 and CDC Report) cannot be ascribed to psychological and social factors in the absence of patient-level data."<sup>56</sup>

They suggested that "many of the cognitive, vestibular, and auditory effects observed in DOS personnel are most consistent with modulated, or pulsed, RF biological effects," citing Soviet/ Russian research on pulsed and continuous RF energy on humans.<sup>57</sup> Notably, the report described a lack of comparable U.S. research regarding RF energy on humans and the NAS committee did not have access to classified research.<sup>58</sup> The report points at known RF effects such as the

"perceived clicking sound within the head even when the ears were covered, a perceived force/pressure sensation within the head and on the face, perceived spatial localization and directionality of these perceived phenomena and other loud sounds, hearing loss, tinnitus, impaired gait and loss of balance, as well as the absence of heating sensation and absence

53 National Academy of Sciences, "New Report Assesses Illnesses Among U.S. Government Personnel and Their Families at Overseas Embassies," *Engineering Medicine News Release*, December 5, 2020, available at: <<https://www.nationalacademies.org/news/2020/12/new-report-assesses-illnesses-among-us-government-personnel-and-their-families-at-overseas-embassies>>.

54 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*.

55 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*, 23.

56 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*, 28.

57 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*, 18.

58 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*, X.

of observed disruption of electronic devices in the immediate environment.”<sup>59</sup>

The microwave hearing or Frey-effect mentioned in the report was first discovered in the 1940s and has been documented in scientific research since 1962.<sup>60</sup> Pulsed RF frequencies above 5kHz can stimulate the cochlea similar to auditory stimuli and can cause buzzing, clicking, and chirping sounds, as well as tinnitus, all of which was reported by Havana Syndrome victims.<sup>61</sup> Referring to other studies in the field the report states: “Pulsed RF effects on the nervous system can include changes to cognitive..., behavioral..., vestibular..., EEG during sleep..., and auditory... function in animals and humans.”<sup>62</sup>

The findings of the NAS report are also in line with older research conducted on nonlethal technologies by the Department of Defense from the 1990s, which described the Frey effect and other thermal microwave effects, such as disorientation, disruption of memory, hearing loss, and brain damage.<sup>63</sup>

Thus, the NAS report goes beyond the older research in the sense that it is one of the rare times when the bioeffects of RF energy are scientifically acknowledged in western mainstream science. The findings are in line with the growing recognition in the Western scientific community that electrosensitivity, which has the widely acknowledged symptoms of headaches, tinnitus, dizziness, tinnitus, and cognitive defects, is a physiological and not a psychosomatic condition. This means that RF exposure at levels that are officially considered safe can harm some people, which can be also objectively tested.<sup>64</sup>

The JASONS, the FBI, the CDC, CIA, and ODNI have conducted separate investigations and their conclusions vary. The report by the DOD scientific advisory group JASON was published relatively early in 2019 essentially dismissed RF and microwaves as a source and instead suggested the recorded sounds matched those of crickets.<sup>65</sup> The FBI was sent to Cuba to investigate the cases after the affected diplomats had left and had the FBI Behavioral Analysis

59 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*, 18.

60 A.H. Frey, “Human Auditory System Response to Modulated Electromagnetic Frequency,” *Journal of Applied Physiology* 17, no. 4 (1962): 689-692.

61 A. Elder and C.K. Chou, “Auditory Response to Pulsed Radiofrequency Energy,” *Bioelectromagnetics Supplement* 6 (2003): S.162-S.173. doi:10.1002/bem.10163.

62 Relman and Pavlin (eds.), *An Assessment of Illness in U.S. Government Employees and Their Families in Overseas Embassies*, 18.

63 U.S. Department of Defense, “Bioeffects of Selected Nonlethal Weapons,” *Department of the Army* (1998), declassified on December 6, 2006.

64 D. Belpomme and P. Irigaray, “Electrohypersensitivity as a Newly Identified and Characterized Neurologic and Pathologic Disorder: How to Diagnose, Treat, and Prevent It,” *International Journal of Molecular Sciences* 21, no. 1915 (2020): 1-20. doi:10.3390/ijms21061915.

65 JASON, “Acoustic Signals and Physiological Effects on U.S. Diplomats on Cuba.”

Unit conduct an assessment of the victims. They concluded that they suffered from mass psychogenic illness, but the FBI had not actually spoken to any of them, nor did they consider the physiological symptoms.<sup>66</sup> The FBI has since acknowledged that some of their agents have symptoms consistent with the Havana Syndrome.<sup>67</sup> The CDC released a report on the Havana Syndrome in late 2019, which merely reviews the research undertaken by the University of Miami, the University of Pennsylvania, and NIH regarding 95 documented cases. It concluded that “the evaluations conducted thus far have not identified a mechanism of injury.”<sup>68</sup>

An interim report by the CIA suggested that foreign governments are unlikely to be responsible for the Havana Syndrome. According to *Politico*, the report stated ‘that the vast majority of reported cases can be explained by medical, environmental or technical factors—including previously undiagnosed illnesses—and that it is “unlikely” that a malicious state actor is inflicting

purposeful harm on U.S. diplomats on a far-reaching, worldwide scale.<sup>69</sup> The CIA seems to have backpaddled a bit from its initial conclusions. CIA Director Burns suggested that the Havana Syndrome was “real,” that the role of foreign actor has not been ruled out, and that the investigation was ongoing.<sup>70</sup>

Finally, a report produced by an ODNI IC Experts Panel on Anomalous Health Incidents claimed in the declassified Executive Summary that “[t]he signs and symptoms of AHIs are genuine and compelling” that “cannot be easily explained by known environmental or medical conditions,” and that “[p]ulsed electromagnetic energy, particularly in the radiofrequency range, plausibly explains the core characteristics.”<sup>71</sup> James Giordano, an expert in the field of military neuroscience, similarly suggested that

“[t]he most likely culprit here would be some form of electromagnetic pulse generation and/or hypersonic generation that would then utilize the ar-

66 Adam Entous, “Stealth Mode: How the Havana Syndrome Spread to the White House,” *The New Yorker* 97, no. 14 (May 24, 2021).

67 Ken Dilanian, “FBI Acknowledges Some Agents May Have Havana Syndrome Symptoms,” *NBC News*, November 24, 2021, available at: <<https://www.nbcnews.com/health/health-news/fbi-acknowledges-agents-may-havana-syndrome-symptoms-rcna6504>>.

68 CDC, “Cuba Unexplained Events Investigation,” 14.

69 Alexander Ward and Andrew Desiderio, ‘U.S. Foe or Specific Weapon Not Behind Sustained, Global Campaign Causing “Havana Syndrome,” CIA Finds,’ *Politico*, January 19, 2022, available at: <<https://www.politico.com/news/2022/01/19/havana-syndrome-cia-causes-527457>>.

70 Julian Barnes, “C.I.A. Officer Suffers Havana Symptoms,” *New York Times*, September 20, 2021; Conor Finnegan and Cindy Smith, “CIA Says Foreign Actor May Be Behind Some Havana Syndrome Cases,” *NBC News*, January 20, 2022, available at: <<https://abcnews.go.com/Politics/cia-for-foreign-actor-havana-syndrome-cases/story?id=82376545>>.

71 U.S. Office of the Director of National Intelligence, “IC Expert Panel on Anomalous Health Incidents Report: Executive Summary,” declassified February 1, 2022, 2.

chitecture of the skull to create something of an energetic amplifier or lens to induce a cavitational effect that would then induce the type of pathologic changes that would then induce the constellation of signs and symptoms that we're seeing in these patients."<sup>72</sup>

Brain scans of several of the victims have indicated concussion, as well as other symptoms that are consistent with a DEW attack.<sup>73</sup> Another rationale as to why some analysts and commentators believe that the Havana Syndrome may be caused by a deliberate attack is that it would not be the first time U.S. diplomats and intelligence officers have been subjected to covert electromagnetic exposure.<sup>74</sup>

### *Echoes from the Past*

U.S. diplomats were subjected to microwave bombardment from the 1950s to the mid-1970s. The CIA conducted routine bug sweeps in the new U.S. embassy

and detected the so-called Moscow-Signal as early as 1953. A single microwave beam from an apartment building on the opposite side of the street radiated the embassy with no clear regularity. By the late 1950s the signal became continuous.<sup>75</sup> By 1962 it was discovered that the microwaves were targeting specifically the offices of the ambassador and top intelligence officials.<sup>76</sup> The frequencies used by the Soviets varied and were in the range of 2 GHz and 7 GHz with a maximum intensity of 0.005 milliwatts before May 1975.<sup>77</sup> The State Department kept the matter secret from the embassy employees but made a series of diplomatic protests over the microwave exposure, starting from 1967.<sup>78</sup>

The Moscow signal was first publicly reported by Jack Anderson in 1972 with the speculation by the CIA that the Soviets might try to "brainwash" U.S. diplomats.<sup>79</sup> The microwave radiation increased dramatically in intensity from 1973, which was said to have resulted in direct physical harm and the psy-

72 Steve Dorsey, 'Pentagon Turns Focus to Cuba Health "Attacks" Amid New Findings on American Victims,' *CBS News*, September 12, 2018, available at: <<https://www.cbsnews.com/news/pentagon-on-turns-focus-to-cuba-attacks/>>.

73 Rita Rubin, "More Questions Raised by Concussion-like Symptoms Found in US Diplomats Who Served in Havana." *JAMA* 319, no. 11 (2018): 1080; Julian Barnes, "Report Criticizes C.I.A. Handling of Havana Syndrome Cases," *New York Times*, October 14, 2022.

74 Jamey Essex and Joshua Bowman, "From the Green Zone to the Havana Syndrome: Making Geographic Sense of Rotationality and Hardship in Diplomacy," *Diplomatica* 4, no. 1 (2022): 93.

75 H. Pollack, "Epidemiologic Data on American Personnel in the Moscow Embassy," *Symposium on Health Aspects of Non-Ionizing Radiation*, New York, April 9-10, 1979.

76 A. Jacobsen, *Phenomena: The Secret History of the U.S. Government's Investigation Into Extrasensory Perception and Psychokinesis* (New York: Little Brown and Company, 2017), 74.

77 Pollack, "Epidemiologic Data on American Personnel in the Moscow Embassy," 1183.

78 B. Reppert, "Zapping an Embassy: 35 Years Later, the Mystery Lingers," *Times Daily*, May 22, 1988, 6D.

79 J. Anderson, "'Brainwash' attempt by Russians?," *Washington Post*, May 10, 1972, B15.

chological trauma of U.S. embassy personnel.<sup>80</sup> In some areas of the embassy the EMF exposure had increased from an average 0.001 milliwatt (mW) per square centimeter to up to 0.018 mW/cm<sup>2</sup>, prompting the State Department to block the microwaves with aluminum screens in early 1976.<sup>81</sup> Reportedly, many U.S. diplomats in the Moscow embassy suffered from ill health and several died from cancer, including two U.S. ambassadors. Ambassador Stoessel eventually threatened to resign over the concerns of his staff, and he eventually died ten years later of leukemia in 1986.<sup>82</sup> However, the RF exposure was well within the levels of what was considered safe, both in the U.S. and the Soviet Union—the U.S. standard is 10 mW/cm<sup>2</sup>, adding to the mystery.<sup>83</sup>

Johns Hopkins University completed a study on the Moscow signal in 1978, known as the Lilienfeld study and found no evidence of a higher cancer rate among U.S. personnel. A study by John R. Goldsmith that reviewed the Lilienfeld study suggested that there were problems with the methodology

and that the study may have been biased from the start due to the U.S. Department of State funding it and trying to avoid ethical and legal responsibility for keeping the microwave exposure secret from embassy personnel.<sup>84</sup>

At the time, there were three major theories as to why the Soviets radiated the U.S. embassy with microwaves: 1) they tried to disrupt U.S. electronic surveillance equipment and activities from the embassy; 2) they tried to eavesdrop on the U.S. embassy; and 3) they tried to psychologically, behaviorally, or physiologically affect the U.S. diplomats.<sup>85</sup> The Moscow Signal resulted in Pentagon-funded research into biological and psychological effects of RF, codenamed Project Pandora, from 1965 to 1970.<sup>86</sup> The eventual findings of Project Pandora were inconclusive.<sup>87</sup> The true motivations of the Soviets have remained a mystery, although they themselves admitted to the microwave irradiation of the embassy and suggested that it was for the purpose of interfering with electronic equipment at the embassy.<sup>88</sup> Russian military authors

80 R. Evans and R. Novak, "The Microwave Affair," *Washington Post*, March 8, 1976, A19.

81 New York Times, "Embassy Radiation Is Cut in Moscow," *New York Times*, April 26, 1976, 5.

82 J.C. Lin, "The Moscow Embassy Microwave Signal," *Radio Science Bulletin* 363 (2017): 90-93.

83 J. Martinez, "The 'Moscow Signal' Epidemiological Study, 40 Years On," *Reviews on Environmental Health* 34, no.1 (2019): 13-24. doi:10.1515/reveh-2018-0061, 14.

84 J.R. Goldsmith, "Balancing the Interests of Patients, Science and Employees: Case Study of RF (Microwave) Exposure of US Embassy Staff in Eastern European Posts," *The Science of the Total Environment* 184 (1996): 87.

85 Reppert, "Zapping an Embassy: 35 Years Later, the Mystery Lingers."

86 Jacobsen, *Phenomena*, 75.

87 R. Beeston, "Russian Micro-waves Plan 'to Drive U.S. Envoys Mad,'" *London Daily Telegraph*, May 11, 1972; Anderson, "'Brainwash' attempt by Russians?"

88 James Schumaker, "Before Havana Syndrome, There Was Moscow Signal," *Foreign Service Journal* (January/ February 2022), available at: <<https://afsa.org/havana-syndrome-there-was-moscow-sig>

have suggested that Russia/ the Soviet Union had developed electromagnetic weapons that interfered with the brain and central nervous system, a class of weapons that had been previously referred to as “psychotronic weapons.”<sup>89</sup>

## The Potential Objectives Behind the “Health Attacks”

Assuming that the Havana Syndrome is caused by deliberate attacks using a weapon or mechanism that remains unknown to the public and the Western scientific community, the question then becomes: who is responsible and what is the intent behind the attacks? The 5GW or cognitive warfare framework may be able to provide some direction. A secret weapon that has effects not immediately observable and that are ambiguous enough to be blamed on other causes is perfect for attacks that are covert and almost completely deniable. As argued by Abbott, “[a] fifth Generation War might be fought with one side not knowing who it is fighting. Or even, a brilliantly executed 5GW might involve one side being completely ignorant that there ever was a war.”<sup>90</sup> David Ignatius also observed that “[t]hese mysterious

attacks are a policymaker’s nightmare. You can’t accuse another country of warlike assaults without solid facts; the Iraqi WMD fiasco taught a generation of intelligence analysts that lesson. But if you don’t hold rogue actors accountable, how do you deter future attacks?”<sup>91</sup> If Russia or another actor had NeuroStrike weapons at their disposal, then they could be used for achieving a number of different objectives.

### *Deniable Attacks as Retribution*

The covert attacks on US government personnel overseas, and in a few cases domestic, could amount to what Martin Libicki has described as non-obvious warfare, which seems to overlap with the concept of 5GW. The purpose of covert attacks may be signaling to the other side: “if you do this bad things will happen to you.”<sup>92</sup> The difficulty in this approach is obviously that an ambiguous signal could be misunderstood by the recipient and/or could be falsely attributed to an innocent party. At this point it is mere speculation, but Russia may have both a motive and the capability for such kind of a covert attack.<sup>93</sup> The timing and locations of the attacks may provide more clues.

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89 Timothy Thomas, “The Mind Has No Firewall,” *Parameters* (Spring 1998): 84-92.

90 Daniel H. Abbott, “Go Deep: OODA and the Rainbow of xGW,” in Abbott (ed.), *The Handbook of 5GW*, 180.

91 David Ignatius, ‘Dealing with “Havana Syndrome” Is a Policymaker’s Nightmare,’ *Washington Post*, October 28, 2021.

92 Martin Libicki, “The Specter of Non-Obvious Warfare,” *Strategic Studies Quarterly* (Fall 2012): 96.

93 Sean Power and Michael Miner, “Report – Havana Syndrome: American Officials Under Attack,” *Belfer Center Harvard University*, November 4, 2021, available at: <<https://www.belfercenter.org/publication/report-havana-syndrome-american-officials-under-attack>>.



The U.S. diplomatic relationship has soured since 2012 when Putin returned to the presidency. The Russians have complained that the “color revolutions” in Eastern Europe and in the Middle East were instigated by Western governments and their proxies in order to advance U.S. geopolitical objectives. In particular, the Russian government has accused the West of seeking to destabilize Russia in order to install a pro-Western regime in Moscow and potentially divide Russia so that it becomes geopolitically insignificant.<sup>94</sup> The Russian government believes that it is under an informational attack by the West.<sup>95</sup> Hence, the Russian government may consider it a just response by attacking individuals associated with the U.S. government and key U.S. allies, in particular diplomats and intelligence personnel.

The attacks seemingly started in Cuba at a time when the diplomatic relationship between the U.S. and Cuba started to improve under the Obama administration.<sup>96</sup> Given the long-lasting ties of Cuba and Russia, which endured even after the collapse of the Soviet Union, it is likely that Cuba would be a suitable location for Russian intelligence to target U.S. diplomats as the Cuban government would not interfere with such actions. Conducting attacks against U.S. diplomats outside of Russia

would provide the Russian government with plausible deniability. At the same time, conducting attacks in the country of a Russian partner can still send the intended message, namely that Russia disapproves of U.S. diplomacy and seeks to punish the U.S. by attacking U.S. personnel involved in the planning and implementation of U.S. foreign policy.

### ***Disruption of US Foreign Policy***

A second reason for the covert attacks could be that the Russian government seeks to disrupt U.S. foreign policy. First of all, diplomats and intelligence officers who get cognitively impaired are no longer able to do their job well. They have to leave the countries they have been posted to, which can disrupt the conduct of U.S. foreign policy. The more U.S. government personnel is harmed, the more difficult it becomes to find qualified personnel to fill positions in certain locations, especially if it becomes widely known that there is high risk of harmful exposure of some kind. The U.S. Department of State had to offer diplomats the highest rate for hardship and cut stuff from 54 to 18 at the U.S. embassy in Cuba and the CIA shut down their station in Havana completely in 2017.<sup>97</sup> The Havana Syndrome allegedly “dramatically hurt” morale in the diplomatic service and affected

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94 Nicolas Bouchet, ‘Russia’s “Militarization” of Colour Revolutions,’ *Policy Perspectives* 4, no. 2 (2016): 2-3.

95 Stephen Blank, “Russian Information Warfare as Domestic Counterinsurgency,” *The Journal of the National Committee on American Foreign Policy* 35, no. 1 (2013): 31-34.

96 Essex and Bowman, “From the Green Zone to the Havana Syndrome,” 94.

97 Essex and Bowman, “From the Green Zone to the Havana Syndrome,” 94; Entous, “Stealth Mode.”

recruitment' for the foreign service.<sup>98</sup> Over a thousand U.S. personnel has been affected with at least some suffering permanent injury or disability.<sup>99</sup>

Particularly concerning are attacks that seem to target U.S. personnel in the proximity of senior officials or at locations close to the offices of the U.S. political leadership such as in Washington, DC. For example, an unnamed senior NSC staffer in the Trump administration claims to have been covertly targeted with a DEW near the White House in an attack that lasted several minutes and caused him to believe that he would die.<sup>100</sup> Another incident involved a CIA officer, who was traveling with CIA Director William Burns to India when he suffered a mysterious health condition consistent with the Havana Syndrome.<sup>101</sup> A diplomat visit of Vice President Kamala Harris to Vietnam was delayed for several hours due to the occurrence of a potential covert attack on two U.S. personnel at the Hanoi embassy, who had to be medevacked.<sup>102</sup>

It is fair to say that the Havana Syndrome has already impacted U.S. diplomacy due to disruptions caused by

diplomats who have to be sent home because of unexplained illnesses they suffer in the country, the impact on morale and recruitment for the foreign service, and due to the perceived threat to senior U.S. officials, whose visits to certain foreign countries may put them at a higher risk.

### *Deception*

The attacks could be conducted in a manner as to implicate an innocent third party in order to damage U.S. diplomatic relations with a particular state or even cause a conflict between two states. Most commentary that suggests that the Havana Syndrome is caused by deliberate attack with an unknown type of DEW point towards Russia as the most likely culprit.<sup>103</sup> What if the Russian government was innocent and some other party is responsible? The concept of so-called false flags has received some attention in relation to both the conflicts in Syria and Ukraine with both sides alleging that the other side carried out attacks that they then blamed on the enemy. It has been also claimed that “[t]he Kremlin’s comfort with trafficking fabricated intelligence

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98 Julian Borger, ‘Havana Syndrome has “Dramatically Hurt” Morale, US Diplomats Say,’ *The Guardian*, February 10, 2022, available at: <<https://www.theguardian.com/us-news/2022/feb/10/havana-syndrome-cuba-us-diplomats-afsa>>.

99 Olivia Gazis, ‘State Department, CIA Establish Federal Payment Rules for “Havana Syndrome” Victims,’ *CBS News*, June 24, 2022, available at: <<https://www.cbsnews.com/news/havana-syndrome-state-department-cia-establish-federal-payment-rules-for-victims/>>.

100 Entous, “Stealth Mode.”

101 Barnes, “C.I.A. Officer Suffer Havana Syndrome Symptoms.”

102 Michele Kelemen and Deepa Shivaram, ‘VP Harris’ Flight Delayed After Possible “Havana Syndrome” Incident in Hanoi,’ *NPR*, August 24, 2021, available at: <<https://www.npr.org/2021/08/24/1030663913/kamala-harris-havana-syndrome-vietnam-delay-embassy>>.

103 Kolbe, Polymeropoulos, and Sipher, “Havana and the Global Hunt for U.S. Officers.”

and using false flags as pretexts for coercive acts reflects a well-established track record.<sup>104</sup> This suggests that false flags are used by major powers and can shape narratives and perceptions.

Libicki explored the strategic utility of false-flags: “if an attacker can persuade the target that it was hit by a third party, it may catalyze conflict that will be to the attacker’s advantage. A non-obvious Taiwanese cyber attack on the United States during a crisis with China, for instance, might put the United States at odds with China and thus more likely to support Taiwan.”<sup>105</sup> Libicki also suggested that covert and unattributed attacks can be carried out for narrative effect: “if the attacker is unknown, or at least unclear, then the focus of the story is necessarily on why the target was attacked—and may well dwell on what the target did to deserve the attack or why the target could not secure itself.”<sup>106</sup>

Perhaps a third country is trying to implicate Russia as the culprit for these covert attacks in order to instigate a conflict between the U.S. and Russia that could benefit the true aggressor. If the Havana Syndrome are a false-flag of some kind, the likely perpetrator would be China for a number of reasons: 1)

China likely has the technology for a NeuroStrike weapon as its research activity in the field of high-powered microwaves would dwarf both U.S. and Russian research;<sup>107</sup> 2) a war or intensified competition between the U.S. and Russia could work in China’s favor as it would weaken both the U.S. and Russia; and 3) the Chinese government seems to have embraced an unrestricted warfare approach that includes illegal and covert means for attacking the U.S.

It is important not to overlook non-state actors as potential perpetrators. According to 5GW theory non-state actors could be empowered by new technology or could be able to utilize state-like capabilities that they either stole from a state actor or received from a state actor in order to function as their proxy for reasons of deniability. As Hammes pointed out: “The anthrax attacks provided stark evidence that today a single individual can attack a nation state.”<sup>108</sup> DEW are not in principle out of reach for non-state actors. In fact, non-state actors have already used simple DEWs such as blinding lasers, which was pointed out in the recent “Directed Futures 2060” study of the Department of Defense.<sup>109</sup> This means, that although a DEW that can

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104 Huw Dylan and Thomas J. Maguire, “Secret Intelligence and Public Diplomacy in the Ukraine War,” *Survival* 64, no. 4 (2022): 37.

105 Libicki, “The Spector of Non-Obvious Warfare,” 98.

106 Libicki, “The Spector of Non-Obvious Warfare,” 97-98.

107 Edl Schamiloglu, “Experts Believe US Embassies Were Hit With High-Power Microwaves – Here’s How the Weapons Work,” *SciTechDaily*, February 12, 2022, available at: <<https://scitechdaily.com/experts-believe-us-embassies-were-hit-with-high-power-microwaves-heres-how-the-weapons-work/>>.

108 Hammes, ‘Fourth Generation Evolves, Fifth Emerges’, 21.

109 U.S. Department of Defense, ‘Directed Energy Futures 2060: Visions for the Next 40 Years

covertly injure personnel in a manner that is hard to detect and protect against would be very difficult to develop, it is not outside of the realm of possibility that a non-state actor could have somehow acquired this capability and use it for the pursuit of their own objectives. A conceivable objective could be that a non-state actor wants to make the U.S. government look weak and helpless in the face of an unknown and unattributable threat, which could delegitimize the U.S. government in the eyes of the world when seemingly unfounded allegations are made against other governments and contribute to general political paranoia and instability in the U.S. As McIntosh argued, “[i]f a 5GW is successful, a target state will have so lost its legitimacy that it cannot be certain of anyone’s primary loyalty.”<sup>110</sup>

## Conclusion

Previous attempts of explaining the Havana Syndrome away as noise produced by crickets, mass psychogenic illness, or health issues with no external cause, have become increasingly unconvincing and should be discarded. The great majority of studies and informed commenters make it clear that the Havana Syndrome must be investigated further in order to properly understand the causes and potentially attribute the attacks in order to deter

future attacks. If the Havana Syndrome is caused by a deliberate attack against U.S. and Canadian personnel, the question becomes what is the intent behind the attacks and what would be a suitable framework for understanding the strategic objectives of the aggressor?

It has been argued in this paper that covert attacks with an unknown DEW can be understood as 5GW, which is a mode of conflict short of open war that relies on secrecy, deception, and influence “in order to make the enemy do our will,” using a minimum amount of force.<sup>111</sup> In 5GW, “[t]he conflict is not to conquer the state, or divide the state, but to undermine the state.”<sup>112</sup> The covert attacks leverage secret NeuroStrike weapons that utilize Nano-Bio-Info-Cogno (NBIC) technologies for attacking the brain or mental capacity of some U.S. diplomatic and intelligence personnel. The motivation could be revenge or ambiguous signaling, an attempt to disrupt U.S. foreign policy, or an attempt to implicate a third party in order to cause the U.S. to initiate a war or intense competition with that third party or to fuel paranoia and make the U.S. government appear helpless or reckless.

5GW is a war of information, narratives, and perception. In its extreme form it may target an adversary

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of U.S. Department of Defense Directed Energy Technologies’, (2021), available at: <[https://www.afrl.af.mil/Portals/90/Documents/RD/Directed\\_Energy\\_Futures\\_2060\\_Final29June21\\_with\\_clearance\\_number.pdf?ver=EZ4QY5MG5UK2LDdwiuPc6Q%3D%3D](https://www.afrl.af.mil/Portals/90/Documents/RD/Directed_Energy_Futures_2060_Final29June21_with_clearance_number.pdf?ver=EZ4QY5MG5UK2LDdwiuPc6Q%3D%3D)>, 20.

110 Daniel McIntosh, “Transhuman Politics and Fifth Generation War,” in: Daniel H. Abbott, *The Handbook of 5GW*, 82.

111 Daniel H. Abbott, “The xGW Framework,” in: Daniel H. Abbott, *The Handbook of 5GW*, 21.

112 Daniel McIntosh, “Transhuman Politics and Fifth Generation War,” 81.

brain and mental capacity to more directly impact decision-making in a manner that benefits the aggressor. The uncertainty surrounding the Havana Syndrome breeds paranoia across the U.S. government and may cause paralysis as policymakers are unable to properly comprehend and respond to the threat. As long as the phenomenon remains unexplained, the aggressor enjoys a clear advantage since accusations can be easily denied and since the attacked government is unable to take any overt punitive action in response to the covert attacks since they would appear to be aggressor in the absence of evidence of a prior attack.

The only way to change this situation is to provide incontrovertible

scientific evidence for a covert DEW attack and to make this evidence public. Any aggressor engaging in these covert attacks would then be forced to either stop them or face the consequences. Unfortunately, any government that possessed this technology would be unwilling to publicly disclose its existence, as this would severely limit the military usefulness of the technology. The U.S. may already have weapons that can cause the effects associated with Havana Syndrome and may have already secretly deployed these weapons, according to investigative journalist Nicky Woolf.<sup>113</sup> As long as this dynamic is in play it is unlikely that the Havana Syndrome will be solved by any official government body.

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113 The Daily Beast, "Havana Syndrome Might Be Real and It's Scary as Hell," *TDB*, February 2, 2023, available at: <<https://www.thedailybeast.com/havana-syndrome-might-be-real-and-its-scary-as-hell?ref=scroll>>.

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