

Hybrid Warfare: Policy Implications for India¹

Gautam Sen

Emeritus Professor, Perspective Policy Foundation

*Every age has its own kind of war, its own limiting conditions,
and its own peculiar preconceptions.*

— *Carl von Clausewitz*

Introduction

The purpose of this very compressed theoretical piece is to provide the future readers the conceptual and theoretical moorings of Hybrid Warfare. Adequate care has been taken to give extensive corroborating scholarly and policy-oriented writings that has appeared not only in the post 2006 but also the linkage to previous works on the larger issue of War and Violence. The presentation is hence a referral research essay to aid Researchers and policy makers in their quest to understand the complexities that the Global system will face in the 21st Century.

It is truism when one recollects the immortal words of Plato that only the dead have seen the end of all wars. Over the centuries and millennia wars have been categorized under different names and different nomenclature. Each type of warfare had a purposeful precondition and each century of history gave a different label ranging from guerrilla warfare to revolutionary war to terrorism to fourth generation warfare(4GW)² till we arrive at sub-conventional and conventional

¹ **Prof. Gautam Sen**, the author of the article is permitted re-printing it from the volume of PPF - Working Paper No.: PPF/02/2020/ July 2020: Hybrid Warfare: Policy implications for India. Author of this paper, Prof. Gautam Sen is an acclaimed expert on strategic issues and national security, is currently associated with several educational institutions and think tanks.

Policy Perspectives Foundation (PPF) is a non-profit apolitical think tank. Its activities focus on complex and inter-connected challenges to internal peace, stability and development in India.

² See Marine Corps Gazette in October 1989, "The Changing Face of War: Into the Fourth Generation."

conflicts ending with the latest known as the hybrid war emerging in the first quarter of the 21st century. The last three tabulated are often occurring often as intra state than interstate. While terrorism could be identified as the darker side of globalization, hybrid warfare³ can be resorted to be used by a traditional state actor like the Russian involvement in the Ukraine in addition to using a local hybrid proxy, though Russia denied involvement in the Ukraine conflict. Hence the global system comprising of sovereign nation states are facing an adversary that incorporates "diverse and dynamic combination of conventional, irregular, terrorist and criminal capabilities."⁴ Hybrid warfare is the epitome of the process of tacticising the military strategy by employing political and economic warfare and further create a singularity between conventional, irregular and cyber warfare⁵. This process is further juxtaposed with an element of psychological warfare by using "fake news", "diplomacy" and even intervening the "electoral process".⁶ Hence the actor which may be a state or a non-state actor precipitates a complex dynamic battle space which can remain highly flexible and adaptable situationally as well as geographically⁷. Finally there are a plethora of terms used

It explains that "In broad terms, fourth generation warfare seems likely to be widely dispersed and largely undefined; the distinction between war and peace will be blurred to the vanishing point. It will be nonlinear, possibly to the point of having no definable battlefields or fronts. The distinction between "civilian" and "military" may disappear. Actions will occur concurrently throughout all participants' depth, including their society as a cultural, not just a physical, entity. Major military facilities, such as airfields, fixed communications sites, and large headquarters will become rarities because of their vulnerability; the same may be true of civilian equivalents, such as seats of government, power plants, and industrial sites (including knowledge as well as manufacturing industries). Success will depend heavily on effectiveness in joint operations as lines between responsibility and mission become very blurred. Again, all these elements are present in third generation warfare; fourth generation will merely accentuate them."

3 For detail analysis see Fleming, Brian P. (2011-05-19). "Hybrid threat concept: contemporary war, military planning and the advent of unrestricted operational art" (pdf). United States Army Command and General Staff College. Archived from the original on 2015-08-05. Retrieved 2015-08-05, Grant, Greg (2008-05-01). "Hybrid Wars". Government Executive. National Journal Group. Archived from the original on 2015-08-05. Retrieved 2015-08-05 and Deep, Alex (2015-03-02). "Hybrid War: Old Concept, New Techniques". Small Wars Journal. Small Wars Foundation. Retrieved 2015-08-05.

4 I have retrieved this from Fleming, Brian P United States Army Command and General Staff college, " Hybrid Threat Concept: contemporary war, military Planning and the advent of unrestricted operational art" (pdf). (2011-05-19 at <https://www.wired.com/story/free-speech-issue-tech-turmoil-new-censorship/?CNDID=50121752>

5 Read "Menacing Malware Shows the Dangers of Industrial System At <https://www.wired.com/story/triton-malware-dangers-industrial-system-sabotage/?CNDID=50121752>.

6 For a detailed exposition see "It's the (Democracy-Poisoning) Golden Age of Free Speech". Wired. Standish, Reid (2018-01-18). "Inside a European Center to Combat Russia's Hybrid Warfare". Foreign Policy. Retrieved 2018-0131. [...] hybrid warfare: the blending of diplomacy, politics, media, cyberspace, and military force to destabilize and undermine an opponent's government. And "Defense lacks doctrine to guide it through cyberwarfare". nexgov.com. "Deterring hybrid warfare: a chance for NATO and the EU to work together?". NATO Review

7 Information Week Government, "Auditors Find DoD Hasn't Defined Cyber Warfare"

to refer to the concept of hybrid war: hybrid threat, hybrid adversary, hybrid influencing etc. It is essential to note that most US military literature categorizes them as hybrid threat while the body of academic literature labels them as hybrid warfare. It will always be a useful lexicon to use the two terms "hybrid threat" and "hybrid warfare" in an interchangeable fashion to convey the exact nuance.⁸

Origins of Hybrid Warfare

The issue concerning the origin of the term Hybrid Warfare has been summed up here by quoting from Harvard Bibliography as "The term hybrid warfare, as currently used, was first introduced by US Marine Corps Lieutenant Colonel Frank G. Hoffman in 2006, though Hoffman states he took the term from a thesis by Robert G Walker in which Walker describes low-intensity operations conducted by the US Marines. Mockaitis (1995)⁹ is the earliest modern source we could find using hybrid war. In 2006 Hoffman referred to the phenomena as "complex irregular warfare" (Hoffman 2006), Hoffman(2006)¹⁰ building forward on work he conducted with US Marine Corps General James Mattis in 2005 in an opinion piece in United States Naval Institute Proceedings Magazine (Mattis and Hoffman(2005)).¹¹ In 2007 Hoffman gave the first definition of hybrid warfare in

8 See Oxford Bibliographies article in Military History at [HTTPS://WWW.OXFORDBIBLIOGRAPHIES.COM/VIEW/ DOCUMENT/OBO-9780199743292/OBO-9780199743292-0260.XML](https://www.oxfordbibliographies.com/view/document/OBO-9780199743292/OBO-9780199743292-0260.xml) IS QUOTED AS "Hybrid warfare has been the bandwagon term to describe modern warfare in academic, policy, and journalist accounts. It describes a wide array of warfare techniques that do not correspond with earlier notions of warfare. Yet none of these are really to be called "new" and the military thought associated with them can be traced back as early as Sun Tzu's The Art of War. Perhaps it was the shock of being faced with unfamiliar tactics, the breach of morality with hybrid tactics disregarding jus in bello principles, or the rigged black/white understanding of the dichotomy of war and peace-but whatever the reason, it has led to a plethora of terms and monikers to describe the phenomena now labeled hybrid warfare. The United States Special Operations Command (USSOCOM), for example, in discussing the "gray zone," points out that this topic has had many monikers within the US literature. To name a few: low-intensity conflict or low-intensity operations, small wars (this one did lead to an excellent online journal called Small Wars Journal, or SWJ), irregular warfare, asymmetric warfare, and military operations other than war (MOOTW). Hybrid warfare might indeed encompass a low-intensity operations type of conflict. All of these include elements of hybridity and hybrid warfare. In particular the authors seek to address the perception that hybrid warfare has mainly been conducted by the adversaries of the West. Western governments do use hybrid tactics and hybridity comes to the front in counterinsurgency".

9 Hybrid Warfare, John G.L.J. Jacobs, Martijn W.M. Kitzen

10 Hoffman, Frank G. "Complex Irregular Warfare: The Next Revolution in Military Affairs." *Orbis* 50.3 (2006): 395-411.

11 Mattis, James N., and Frank G. Hoffman. "Future Warfare: The Rise of Hybrid Wars." *United States Naval Institute Proceedings Magazine* 131.11 (2005): 18-19.

academic published work: "Hybrid wars incorporate a range of different modes of warfare, including conventional capabilities, irregular tactics and formations, terrorist acts including indiscriminate violence and coercion, and criminal disorder" (Hoffman 2007, p.14)¹². This definition would be revised a couple of times by Hoffman and others. Noteworthy in this discussion is Bjerregaard 2012¹³, which contests the idea of hybrid warfare being a Revolution in Military Affairs (RMA). Rob de Wijk's contribution in the Oxford Handbook of War captures the discussion to that point well, while predicting the debates linked to hybrid warfare that play today (De Wijk, 2012)¹⁴. By 2015, an excellent overview of the discussion appeared in Tenenbaum 2015 (in French) and in Thornton 2015."¹⁵

Defining Hybrid Warfare

Defining, a hybrid threat or hybrid warfare has led to many a debate because there is no universally acceptable definition to explain them. The term hybrid warfare at a normative and intellectual level appears to be too abstract and the latest thinking seriously consider referring to irregular methods to counter a conventionally superior force. As recorded in many a reference essays that "The abstractness of the term means that it is often used as a "catch all term" for all non-linear threats".¹⁶

Hybrid warfare has the following aspects and characteristics:

- It is non-standard, complex, and fluid adversary. A hybrid adversary can be

12 Hoffman, Frank G. Conflict in the 21st Century: The Rise of Hybrid Wars. Arlington, VA: Potomac Institute for Policy Studies, 2007.

13 Bjerregaard, Thomas. "Hybrid Warfare: A Military Revolution or Revolution in Military Affairs?" Thesis for the Master of Military Art and Science, General Studies, U.S. Army Command and General Staff College, 2012.

14 De Wijk, Rob. "Hybrid Conflict and the Changing Nature of Actors." In The Oxford Handbook of War. Edited by Julian Lindley-French and Yves Boyer, 358-372. Oxford: Oxford University Press, 2012.

15 Thornton, Rod. "The Changing Nature of Modern Warfare." The RUSI Journal 160.4 (2015).

16 Jasper, Scott; Moreland, Scott (2014-12-02). "The Islamic State is a Hybrid Threat: Why Does That Matter?". Small Wars Journal. Small Wars Foundation. Retrieved 2015-08-05. Fleming, Brian P. (2011-05-19). "Hybrid threat concept: contemporary war, military planning and the advent of unrestricted operational art" (pdf). United States Army Command and General Staff College. Archived from the original on 2015-08-05. Retrieved 2015-08-05. Grant, Greg (2008-05-01). "Hybrid Wars". Government Executive. National Journal Group. Archived from the original on 2015-08-05. Retrieved 2015-08-05.

state or non-state actor

- A hybrid adversary often uses a combination of conventional and irregular methods.¹⁷
- A hybrid adversary is flexible and adapts quickly¹⁸.
- A hybrid adversary uses advanced weapons systems and other disruptive technologies.¹⁹
- Its Use of mass communication networks offers powerful propaganda and recruiting tools.²⁰ The use of fake news websites to spread false stories is an element of hybrid warfare.²¹
- A hybrid war takes place on three distinct battlefields. the conventional battlefield, the indigenous population of the conflict zone, and the international community.²²

Effective Response to Hybrid War

Responding to hybrid warfare in general by traditional armed forces is difficult and so also by those organisations which are responsible collective defence mechanism. Both by individual nation states or the alliance system members collectively can hardly concur on the source of conflict or the locus of violence or labelling the responsibility of the perpetrators of hybrid warfare.

17 Deep, Alex (2015-03-02). "Hybrid War: Old Concept, New Techniques". Small Wars Journal. Small Wars Foundation. Retrieved 2015-08-05; Pindjak, Peter (2014-11-18). "Deterring hybrid warfare: a chance for NATO and the EU to work together?". NATO Review. Archived from the original on 2015-08-05. Retrieved 2015-08-05; Hoffman, Frank (2007). Conflict in the 21st Century: The Rise of Hybrid War. Arlington: Potomac Institute for Policy Studies. p. 24; Standish, Reid (2018-01-18). "Inside a European Center to Combat Russia's Hybrid Warfare". Foreign Policy. Retrieved 2018-01-22.

18 El Mawy, Reda (2014-09-30). "Islamic State 'adapting to US-led air strikes'". BBC News. Archived from the original on 2015-08-05. Retrieved 2015-08-05.

19 Whitney, Craig R. (December 2012). "Ruling Arms". World Policy Journal. Archived from the original on 28 December 2012. Retrieved 17 June 2016; Schroeder, Matt & Lamb, Guy (2006). "The Illicit Arms Trade in Africa"(PDF). African Analyst. Archived from the original (PDF) on 21 February 2007. Retrieved 17 June 2016.

20 Standish, Reid (2018-01-18). "Inside a European Center to Combat Russia's Hybrid Warfare". Foreign Policy. Retrieved 2018-01-22.

21 Lucian Kim, Russia having success in hybrid war against Germany), Reuters (February 7, 2016).

22 McCuen, John J. "Hybrid Wars". Military Review. 88 (2): 107.

When even today there is no consensus on defining terrorism it is even more difficult to define who are the perpetrators of hybrid warfare.

An article published in Global Security Review entitled "What is Hybrid Warfare"? See <https://globalsecurityreview.com/hybrid-and-non-linear-warfare-systematically-erases-the-divide-between-war-peace/> It compares the notion of hybrid warfare to the Russian concept of "non-linear" warfare. It defines non-linear warfare as the deployment of "conventional and irregular military forces in conjunction with psychological, economic, political, and cyber assaults."

A survey of the case studies on hybrid warfare which involves the use of hard power or military power shows that such application of force was insufficient to contain it. The conflict often evolves below the visible/perception levels level, the causes remain unknown and reaction to contain and neutralise by the fastest means turns out to be too late.

In real term the hybrid adversaries remain unassailable. No quantum of force used to neutralise is useful to act as deterrent. More than anything else the hybrid adversaries have larger flexibility²³, display more innovativeness as against the regular militaries which are rigid in their approach toward their conceptualisation of warfare having a set or static military taxonomy to undertake any operations against the hybrid adversary.²⁴

History of Hybrid War and Hybrid Adversaries

The combination of conventional and irregular methods is not new and has been used throughout history. Some historians find the origins of the concept in the campaigns waged in ancient Hispania by the Lusitanian leader Viriathus or the renegade general Sertorius against the forces of the Roman Republic in the 2nd and 3rd centuries B.C. respectively²⁵. Elements of hybrid warfare are also

23 Deep, Alex (2015-03-02). "Hybrid War: Old Concept, New Techniques". Small Wars Journal. Small Wars Foundation. Retrieved 2015-08-05.; Pindjak, Peter (2014-11-18). "Deterring hybrid warfare: a chance for NATO and the EU to work together?". NATO Review. Archived from the original on 2015-08-05. Retrieved 2015-08-05.

24 Hoffman, Frank (2007). Conflict in the 21st Century: The Rise of Hybrid War. Arlington: Potomac Institute for Policy Studies. pp. 20-22.

25 The Roman Campaign in Hispania during the second Punic war was one of strategic necessity. From 218 to 211 BC it was led by the elder Scipio brothers, Gnaeus and Publius Cornelius Scipio. Their primary

seen in the concept of *la petite guerre*, a sort of reconnaissance in force practiced by light troops in European armies during the 17th and 18th centuries. A few examples of this type of combat are found in the American Revolution (a combination of Washington's Continental Army with militia forces) and Napoleonic Wars (British regulars cooperated with Spanish guerrillas). One can also find examples of hybrid warfare in smaller conflicts during the nineteenth century. For instance, between 1837 and 1840 Rafael Carrera, a Conservative peasant rebel leader in Guatemala, waged a successful military campaign against the Liberals and the Federal government of Central America utilizing a strategy that combined classical guerrilla tactics with conventional operations. Carrera's hybrid approach to warfare gave him the edge over his numerically superior and better armed enemies.²⁶

The end of the Cold War created a unipolar system (with a preponderant American military power) and though this has tempered traditional conflicts, regional conflicts and threats that leverage the weaknesses of conventional military structure are becoming more frequent.

objective was to prevent reinforcements from Spain from reaching Italy, and to this end they attacked the Ebro valley at the battles of Cissa, and Ebro river, they carved out a strategically very important region of Roman control. Their victory two years later at Dertosa expanded their area of control, and coming as it did soon after the disaster at Cannae, was an important Roman victory. After consolidating Roman territory, they hired 20,000 Celt-Iberian mercenaries, and met Carthage in the Baetis (Guadalquivir) River valley in southwest Hispania. This, however, proved a disaster. Carthage bribed the mercenaries to betray Rome, and both Scipios were killed. Soon after this, Scipio Africanus, the son of Publius Cornelius, who was killed at Baetis river, took command of the Campaign in Rome and won great victories at New Carthage, Beacula, and finally, at the battle of Silpia, drove Carthage entirely out of Spain. This is the perhaps the earliest recorded hybrid warfare strategy recorded.

26 Carrera was born on 24 October 1814 in the Candelaria barrio of Guatemala City towards the end of the Spanish colonial period. He was of humble origin, a mestizo and illiterate. He first worked as a farmhand. He enlisted in the army during the civil war, which lasted from 1826 to 1829. In 1835, he left the army and moved to Mataquescuintla where he married Petrona García and worked as a swineherd. Carrera rallied the peasants into armed resistance. Strongly supported by the Church, Carrera became de facto ruler of much of Guatemala and led a large uprising of Indians and poor peasants of mixed race in the east and south of the country, an area known as "The Mountain". The movement was strongly pro-Catholic and eager to restore many of the colonial religious institutions and traditions that the liberals had abandoned. Francisco Morazan repeatedly drove Carrera's forces out of cities and towns, but Carrera's followers would retake places as soon as Morazan's army left. For almost a decade, he was content being a military commander and enjoyed the respect of his followers. Even though they distrusted and despised him, the conservative criollos from the Aycinena Clan, decided to support Carrera in the hope of regaining the power and privileges that they had lost in 1829 after Morazan's invasion of Guatemala. Under the leadership of Juan José de Aycinénay Pinol the conservatives aimed to regain their place as Guatemala's elite from which the liberals had expelled them. This is another example of Hybrid warfare in the 18th century.

What is also new is the sophistication and lethality of non-state actors. These actors are well armed with technologically advanced weapons that are now available at low prices. Similarly, commercial technologies such as cell phones and digital networks are adapted to the battlefield. Another new element is the ability of non-state actors to persist within the modern system.

The Countries listed below are where the Hybrid Warfare that has taken place and covers the history of operation: ²⁷

2006 Israel-Hezbollah War

One of the most often quoted examples of a hybrid war is the 2006 conflict between Israel and the Hezbollah. The Hezbollah is a sophisticated non-state actor sponsored by Iran.²⁸ While the group often acts as a proxy for Iran, it has its own

²⁷ References to all the countries involved in hybrid warfare confronted with hybrid adversaries are - Hoffman, Frank (2007). *Conflict in the 21st Century: The Rise of Hybrid War*. Arlington: Potomac Institute for Policy Studies. pp. 20-22.; Visoni-Alonzo, G., *The Carrera Revolt and "Hybrid Warfare" in Nineteenth Century Central America* (London: Palgrave Macmillan, 2017), 2.; SWJ Editors (2008-01-27). "Training a "Hybrid" Warrior at the Infantry Officer Course". *Small Wars Journal*. Small Wars Foundation. Retrieved 2015-08-05; Hoffman, Frank (2007). *Conflict in the 21st Century: The Rise of Hybrid War*. Arlington: Potomac Institute for Policy Studies. pp. 35-38.; Hoffman, Frank (2007). *Conflict in the 21st Century: The Rise of Hybrid War*. Arlington: Potomac Institute for Policy Studies. pp. 38-39.; Schroefl, Joseph; Kaufman, Stuart. "Hybrid Actors, Tactical Variety: Rethinking Asymmetric and Hybrid War". *Studies in Conflict and Terrorism*. 37 (10): 863.; Don't Be Fooled: Russia Attacked U.S. Troops in Syria: Mattis gave Putin "plausible deniability" for a military assault that went badly awry. *Bloomberg*, 16 February 2018.; Berzins, J. (2019). "Not 'Hybrid' but New Generation Warfare". in Howard, G. and Czekaj, M. (Eds.) *Russia's Military Strategy and Doctrine*. Washington, DC: The Jamestown Foundation.; *Russia v the West: Is this a new Cold War?* BBC, 1 April 2018.; Thornton, Rod (4 September 2015). "The Changing Nature of Modern Warfare". *The RUSI Journal*. 160 (4): 40-48. doi:10.1080/03071847.2015.1079047.; "REMARKS BY FOREIGN MINISTER SERGEY LAVROV AT THE XXII ASSEMBLY OF THE COUNCIL ON FOREIGN AND DEFENCE POLICY". 2014-11-25. Retrieved 2017-02-02.; Carden, James. "Russia and America's Dangerous Dance". *The National Interest*. Retrieved 19 February 2017.; "E.U. Suspects Russian Agenda in Migrants' Shifting Arctic Route". *New York Times*. 2016-04-02. Retrieved 2016-04-02.; "The Strategic Threat from Iranian Hybrid Warfare in the Gulf". *Center for Strategic and International Studies*. 13 June 2019.; "The Iran crisis will show Russia and China the West still has no answer for 'hybrid warfare'". *The Daily Telegraph*. 13 July 2019.; "Has Iran chosen hybrid warfare?". *The Hill*. 14 June 2019.; "Drone' attack on Saudis destabilises an already volatile region". *BBC News*. 16 September 2019.; "The necessity of "effective reaction" against U.S. hybrid war". *Tehran Times*. 22 June 2019.; "The current crisis in the Persian Gulf in the context of hybrid warfare". *Australian Defence Force Journal*. 2018.; "China's Hybrid Warfare and Taiwan". *The Diplomat*. 13 January 2018.; "Hybrid Warriors: China's Unmanned, Guerrilla-Style Warfare in Asia's Littorals". *The Diplomat*. 16 February 2017.; "'Pakistan faces hybrid warfare' - Pakistan". *Dawn*. 9 March 2019.; "Hybrid Warfare in Pakistan - I". *Daily Times*. 2 July 2019.

²⁸ Hezbollah was founded in the early 1980s as part of an Iranian effort to aggregate a variety of militant Lebanese Shia groups into a unified organization. Hezbollah acts as a proxy for Iran in the ongoing Iran-Israel proxy conflict. Hezbollah is generally considered the most powerful non-state actor in the world, and to be stronger than the Lebanese Army. A hybrid force, the group maintains "robust conventional and unconventional military capabilities." The party's fighting strength has grown substantially since the 2006 Lebanon War. As of 2018, annual Iranian monetary support for Hezbollah is estimated at 700 million dollars according to US estimates. Hezbollah officials have stated their aim is to defend Lebanon and Syria from

agenda. It was Hezbollah policy, rather than Iran's, that led to the kidnapping of Israeli troops that was the impetus for the war. The war featured about 3,000 Hezbollah fighters embedded in the local population attacked by about 30,000 Israeli regular troops.

The group used decentralized cells composed of guerrillas and regular troops armed with weaponry that nation states use such as anti-tank missiles, rockets, armed unmanned aerial vehicles, and advanced improvised explosive devices. Hezbollah cells downed Israeli helicopters, damaged Merkava IV tanks, communicated with encrypted cell phones, and monitored Israeli troops movements with night vision and thermal imaging devices. Iranian Quds Force operatives acted as mentors and suppliers of advanced systems.

Hezbollah leveraged mass communication immediately distributing battlefield photos and videos dominating the perception battle throughout the conflict. Israel did not lose the war on the battlefield but lost the information battle as the overwhelming perception at the time was of Israeli defeat.

2014 ISIL Advance into Iraq

The Islamic State of Iraq and the Levant (ISIL) is a non-state actor utilizing hybrid tactics against the conventional Iraqi military. ISIL has transitional aspirations, and uses irregular and regular tactics and terrorism. In response, the state of Iraq itself turned to hybrid tactics utilizing non-state and international actors to counter the ISIL advance. The United States likewise is a hybrid participant through a combination of traditional air power, advisers to Iraqi government troops, Kurdish peshmerga, and sectarian militias, and training opposition forces within Syria. The Iraq-Syria hybrid war is a conflict with an interconnected group of state and non-state actors pursuing overlapping goals and

takfiris, a term they use to denote Sunni Islamist forces, but which many Sunnis interpret as a slur against them as a whole, Islamist or non-Islamist.

a weak local state.

Russian Activities in the 2010s

Russian military intervention in Ukraine (2014-present), Russo-Georgian War, Tajikistani Civil War, Transnistria War, Russian interference in the 2016 United States elections, Russia- European Union relations Allegations of Russian intimidation and destabilisation of EU states, and Cyberwarfare by Russia.

The Russian government's wide use in conflicts such as in Syria and in Ukraine, of private military contractors such as those of the Wagner Group was in 2018 singled out by experts as a key part of Russia's strategy of hybrid warfare to advance her interests, while obfuscating her involvement and role.

In respect of Russia, Janis Berzins, director of the Center for Security and Strategic Research, has widely published arguing that using the term Hybrid to characterize the Russian strategy is misleading, since the Russian have their own definitions and concepts. Accordingly, to him, "the word "hybrid" is catchy since it can represent a mix of anything. However, its basic framework differs from the one developed by the Russians due to the former being a military concept and the result of American military thought. Moreover, the concept of New Generation Warfare includes conventional operations. In other words, Hybrid Warfare might be part of New Generation Warfare but cannot define it." Michael Kofman, a senior research scientist at CNA and a fellow at the Wilson Center's Kennan Institute, noted in March 2018 that the West's frequent references to hybrid warfare was in effect "an unintelligible Western reaction, after decades of wars of choice against paltry adversaries, to confrontation with another power that is capable across the full spectrum of conflict".

Russia on US activities: Cyberwarfare in the United States, United States intelligence operations abroad, United States involvement in regime change, and Countering America's Adversaries Through Sanctions Act Moscow has accused Washington of conducting hybrid warfare against Russia during the color revolutions. Its perception of being at war or in a 'permanent state of conflict' with the US and its allies were furthered by the 2014 Maidan uprising in Ukraine.

Russia's activities in former Soviet states have been described as Hobbesian and redolent of Cold War thinking.

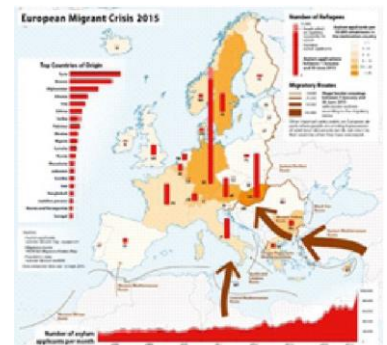
Speaking at the Valdai Discussion Club in November 2014, Russian foreign minister Sergey Lavrov said:

"It is an interesting term, but I would apply it above all to the United States and its war strategy - it is truly a hybrid war aimed not so much at defeating the enemy militarily as at changing the regimes in the states that pursue a policy Washington does not like. It is using financial and economic pressure, information attacks, using others on the perimeter of a corresponding state as proxies and of course information and ideological pressure through externally financed non-governmental organizations. Is it not a hybrid process and not what we call war?"

United States on Russian Activities

European migrant crisis

General Philip Breedlove, in a US Senate hearing February 2016, claimed that Russia is using refugees to weaken Europe, directing the influx of refugees in the continent to destabilize areas and regions in terms of economy and to create social unrest. On 10 February 2016, Finnish Defence Minister Jussi Niinisto told a meeting of NATO Defence Ministers that Finland expects Russia to open a second front, where as many as 1 million migrants may arrive over the Finnish/Russian border. A similar statement was made by Ilkka Kanerva, Finland's former foreign minister and now chairman of the country's parliamentary Defense Committee.



Iranian Activities

Iran-Saudi Arabia proxy conflict, Iran-Israel proxy conflict, Iran and state-sponsored terrorism, 2019 Persian Gulf crisis, and Cyberwarfare in Iran



	Iran	Saudi Arabia	Major proxy conflict locations
Date	11 February 1979 - present ⁴⁵¹¹⁴⁶¹ (40 years, 9 months and 6 days)		
Location	Middle East, Africa, Central Asia, and South Asia		
Status	Gnnoinn ¹ .		

Iran has been accused of conducting hybrid warfare. According to BBC, "Iran, along with its Houthi allies [in Yemen], is conducting a classic war of the weak against the strong; a "hybrid conflict" as it is known in the strategic textbooks. It is borrowing many of the tactics from the Russian play-book - the use of deniability; proxies; cyber-operations and information warfare."

Iran on United States Activities

Iran-United States relations, Timber Sycamore²⁹, and United States sanctions against Iran (<https://fas.org/sgp/crs/mideast/RS20871.pdf>)³⁰ are indicative of US Hybrid warfare activities.

29 Operation "Timber Sycamore", initiated by President Barack Obama was privatized a little before the election of President Donald Trump. It is now coordinated by the investment fund KKR (established by Henry Kravis and whose military activities are led by the former head of the CIA, General David Petraeus). "Timber Sycamore" is the most important arms trafficking operation in History. It involves at least 17 governments. The transfer of weapons, meant for jihadist organizations, is carried out by Silk Way Airlines, a Azerbaijani public company of cargo planes. In the week 27 November - 2 December 2018, eight of this company's cargo planes landed at Aden (Yemen), Erbil and Bagdad (Iraq), Beirut (Lebanon), Djibouti (Djibouti), Kabul and Bagram (Afghanistan) and Tripoli (Libya). Furthermore, the transport of personnel between Djibouti and Aden was carried out by Taquan Air which was up till now a small US company working exclusively for business trips or tourism in Alaska. <https://syria360.wordpress.com/2018/12/14/cia-operationtimber-sycamore-continues/>

30 Overview and Objectives

Sanctions have been a significant component of U.S. Iran policy since Iran's 1979 Islamic Revolution that toppled the Shah of Iran, a U.S. ally. In the 1980s and 1990s, U.S. sanctions were intended to try to compel Iran to cease supporting acts of terrorism and to limit Iran's strategic power in the Middle East more generally. After the mid- 2000s, U.S. and international sanctions focused largely on ensuring that Iran's nuclear program is for purely civilian uses. During 2010-2015, the international community cooperated closely with a U.S.-led and U.N.- authorized sanctions regime in pursuit of the goal of persuading Iran to agree to limits to its nuclear program. Still, sanctions against Iran have multiple objectives and address multiple perceived threats from Iran simultaneously.

This report analyzes U.S. and international sanctions against Iran. CRS has no way to independently corroborate whether any individual or other entity might be in violation of U.S. or international sanctions against Iran. The report tracks implementation of the various U.S. laws and executive orders. Some sanctions require the blocking of U.S.-based property of sanctioned entities, but no information has been released from the executive branch indicating the extent, if any, to which any such property has been blocked.

The United States has been accused of conducting hybrid warfare against Iran and other countries.

Saudi and Emirati Activities

2017-2019 Qatar diplomatic crisis and Saudi Arabia and state-sponsored terrorism Saudi Arabia and United Arab Emirates have been accused of conducting hybrid warfare against Qatar.

South Asian Activities

Since the 1947, India and Pakistan have been involved in a number of wars, conflicts and military stand-offs. The Kashmir issue and cross border terrorism have been the cause of conflicts between the two countries mostly with the exception of the Indo-Pakistani War of 1971 where conflict originated due to turmoil in erstwhile East Pakistan now Bangladesh. However, during 1971 campaign, Mukti Bahini, an armed organization comprising of regulars and irregulars wherein regulars were defectors from East Pakistani units were employed by India in Bangladesh and it greatly assisted in achieving its political and military aims.

In the specific context of Pakistan³¹, it has since its creation post-independence and partition treated India as its primary threat and enemy (ref). Due to its inadequacy vis-à-vis India with regards to military and financial capability, it has historically exhibited its overdependence on irregulars and hybrid warfare. It employed them in 1947-48 to seize portion of J&K, with battle for Srinagar by regular and irregular forces being a classical example. In 1965, Razakars were employed by Pakistan as part of carefully crafted strategy manifesting in form of Op Gibraltar in hill sector. During Kargil misadventure in 1999, Pakistan employed a mix of terrorists and regular troops to occupy critical heights along the Line of Control (LoC). The unfolding of Op TOPAC over last three decades with the aim to bleed India through a thousand cuts is also a typical

31 Quoted from Pradeep Semwal, Contextualizing and Understanding Hybrid Warfare by Pakistan, CLAWS Journal, Winter 2019, pp., 112-113.

manifestation of hybrid strategy adopted by Pakistan.

Pakistan trained and inducted 80,000 Afghan Mujahidin's for collapse of Soviet forces in Afghanistan. Its hand is seen in all terrorist actions perpetrated against India which include aid and abetment to the Sikh insurgency in Punjab; aid to United Liberation Front of Assam (ULFA) movement in Assam; the ongoing virulent insurgency in Kashmir; cross border infiltration; terrorist attacks in Indian cities; attack on Indian Parliament; plane hijacking; attack across the LoC at Kargil; fake currency racket through Nepal; "Karachi project" to train Indian Mujahidin for committing acts of terror and sabotage in India; the 26/11 attack in Mumbai in 2008; attack on Indian Embassy in Afghanistan; Uri and Pulwama attacks. All these incidents establish the capability of the adversary to conduct intermittent acts of violence, sabotage and subversion at will against India. India has also been accused of conducting hybrid warfare against Pakistan.

Hybrid Warfare Ontology

The hybrid war as a form of Russia's aggressive solution to its geopolitical issues continues developing in every possible way, becomes more and more sophisticated and spreads out to the new battlegrounds. Nowadays we are witnessing at least three ongoing large-scale "hybrid" operations, each of which represents different possible types of "hybrid wars" activities: traditional military operation in Syria (Turkey), nonmilitary activity in the EU and the mix of all three types in Ukraine. The background, threats and possible consequences of every war line are given. It is shown that Ukraine's conflict is neither the beginning nor the finishing part and belongs to the much larger Russia's plan on the worldwide "hybrid warfare" operation.

Hybrid Warfare and Strategic Theory

Strategic theory is a depiction of the eternal principles of strategy, which has a literature centuries long. There are indeed very few things that haven't been discussed in the history of strategic theory. Looking through strategic theory, we can keep ourselves from rediscovering old ideas. It provides us with an unbiased approach to modern warfare.

Hybrid warfare does not merit the adoption as a doctrinal concept and

strategic theory provides a robust viewpoint to approach contemporary warfare. In fact, there is only one war with some more or less active warfare. What is required is to have a holistic vision of the strategic context and the adaptability to meet unique challenges of the day through the use of all instruments of grand strategy. Given that every challenge is unique in many important details, whether it is regular, irregular, or hybrid, they must be approached as political challenges in the first instance, then as grand strategic challenges. If it is decided that the challenge requires a military reaction, then grand strategy must employ the military instrument tailored against that specific challenge. One should note that it may not require a purely military option. As we have been experienced in Russia's hybrid warfare, the categorization encourages tactical thinking focused upon enemy's fighting methods, rather than upon strategic effectiveness in the conflict as a whole. As Renz pointed out, we oversimplify Russian Foreign Policy by narrowing down our vision to hybrid theory. The hybrid concept becomes counter-productive to strategy. Former Danish Chief of Defence, General Knud Bartels, who presided over the NATO Military Committee between 2012-2015, had experienced Crimea crisis first-hand as the Chairman in 2014. His words are a good summary of the main theme.

"Hybrid warfare is a fancy term to name what we have always known as "war". Life is very complicated and many of our nations love simple clear-cut definitions when they face complicated issues. War is war that you can conduct in many different ways. It doesn't always need to be main battle tanks, self-propelled artillery, mechanized infantry, frigates, destroyer, aircraft carriers etc. It can also be subversive operations. But war has no purpose other than to achieve a political goal. Hybrid warfare is just a way of fighting a war which has a political purpose... It doesn't change the fact that as military personnel, in our commands, we make an assessment, we try to understand our adversary, we try to find what are his strong sides, what are his weak sides, and we try of course to focus on the weak sides and to shield off his strong sides. Military strategy is how you are going to fight the war, operations is how you want to fight the battle and tactics is how you

fight in the battle. When I define how I want to fight war that's where, as a military commander, I will decide whether I want to use hybrid warfare or not. It's very relevant to study hybrid warfare now, but to elevate it as a new type of warfare, that's wrong."

Contextualizing Hybrid Threats to India

Contextualizing hybrid threats to India has a direct relationship to India's national security* and its political philosophy*. An in-depth study of the problems related to the cultural and civilizational aspects of India's national security calls for truly multidimensional perspective. Many components of social science disciplines must come together for the formation of an integrated theoretical orientation. The problem of national security for a country like India which has experienced a series of catastrophes from within* and a continuing threat from without* has to be formulated in terms of the larger goals and aspiration to which this civilizational community has committed itself. Briefly, we may think of three such objectives namely: a) National stability and integrity ; b) Cultural, Social, Political and Economic aspiration and compulsions and c) Peace and stability in our relations with other states whenever possible

The problem of national security for a country, therefore, must be seen in terms of these larger goals*. If this may be called the cultural dimension of the problems of national security, we also have to look at the problem from the political perspective as well. Here we have to consider a complex interaction between our perceptions of our neighbors* beyond the borders as well as those of the larger major powers* including their objectives. This must necessarily also include the remaining superpower. It is within this matrix of relationships that the specific goals of our security policy towards the doctrine to contain the hybrid threats that India has to confront in the 21st Century will get structured.

The cultural and the political aspects of the problem create a texture of task and priorities of decision-making and the possible options for actions. The actualization of our objectives as modulated and structured requires an adequate process of institutionalization ranging from the economic to the administrative

and the legal. The institutionalization of our national security efforts* themselves creates further problems and difficulties. Hence all the three dimensions viz. the cultural, socio-political and institutional enter in a complex interaction calling for skills and patterns of leadership at all levels of the problems. Therefore, we need to arrive at multiple dimensions of leadership. This calls for creative response to the complexities of the problem. In this whole endeavor the role of the social scientists become seminal. A clear articulation of various facets of the situation, their complex relationship and also the sharp awareness of the possible contributions, tensions and pressures that must be overcome. Hence the contribution of scholars in the cultural and philosophical disciplines is vital for examining not only the normative aspects of the problems of security but also towards the cumulative effects of hybrid threats that India has been facing since 1947 and hence actions needed to neutralise them in the light of ideals to which we are committed, i.e., national security, social justice and global peace.

We have observed earlier that India has been accused of conducting Hybrid warfare against Pakistan* considering the fact that Pakistan has been the prime player to cause serious and continuous hybrid threat to India since 1947*. These threats and actions undertaken by Pakistan which began in the form of active use of irregular forces to occupy the Jammu and Kashmir region in 1947, resulting in the Indian Army to fight a war. Pakistan did not stop its efforts thereafter and fermented secessionism, separatism and terrorism in the entire Jammu and Kashmir. Pakistan also precipitated two major wars between the two countries in 1965 and 1971, and a near war in Kargil in 1999, and continued to sponsor terrorism* by inducting Jehadi element of different denomination. It reached a serious level when aided by the local separatist elements in Kashmir when it succeeded in almost carry out an ethnic cleansing* of the population in the Kashmir valley resulting in the mass exodus of Kashmiri Hindu population of nearly 4,00,000* people from the valley into Jammu region. This has resulted in Kashmir as the only region in India which has today an absolute majority muslim population* and where the property abandoned* by the Kashmiri Hindus has been taken over by their Muslim neighbours. Pakistan has thus created a situation since 1991, when a

section of the original inhabitants of the Kashmir have become refugees in their own country and still staying in refugee camps set up in Jammu and a sizable number have had to migrate to the rest of the country for jobs and even education of their children. There is hardly an example of this nature occurring in the world except perhaps the Palestinian issue*. The effort to radicalise the population and even those working in government agencies has continued unabated resulting in India abrogating Article 370, putting under house arrest* all undesirable separatist elements including the political leaders, cut the internet and even telephone services since 5 August 2019, to stop the unabated terrorist activities and loss of life. This has resulted in hardly any casualties of human life in Kashmir since 5 Aug 2019*.

Similarly was the situation of Hybrid threat created by the influx of Rohingyas* as refugees from Myanmar who took shelter in Bangladesh and a sizable number infiltrated across in India through Bangladesh plus a sizable number of very poor Bangladeshi Muslims taking advantage of the porous border between India and Bangladesh entered India over a period of two decades, acquire resident documents by unfair means* supported by vote bank politics of some Indian political parties. This has resulted in a hybrid threat in the absence of any document to support the citizenship profile of the individuals. India has had no other recourse but to take steps, act and pass the Citizenship Amendment Act* and initiate the process of creating National Register for Citizens*. Needless to state that stern action envisaged by the Centre has created its own ramifications to disturb the Centre State relationship in India internally.

Moreover, India has been experiencing hybrid threat from the age-old Naxal movement* in Chhattisgarh area over the past three decades in an on-off situation. Coupled with all this has been Pakistan-China relationship* to undermine India's national and strategic interests and the role of China in India's North Eastern States* and on the international border between India and China which still remains unresolved after six decades and more. This even after 21 meetings* on border demarcation between India and China and on several occasions the two countries' regular forces coming eyeball to eyeball confrontation. So far India had responded to this vast array of hybrid threats in a reactive way till India decided to go on defensive-offensive action against China and preemptive action against the terrorist activities in the form of surgical strikes* both in the Eastern and Western international borders of India. Hybrid threats to India will continue to

remain even in the foreseeable future and if the theoretical assumptions that has been presented above is fully introspected, policies culled out of the recommendations given in the beginning of this study, then India will be well on the way to contain the destabilizing and disruptive elements. It is not a easy way forward for India which apart from being the largest democracy has a complex mosaic of ethnic, religious, social and anthropological diversity to contend with unlike any other country in the world. Indian policy makers will be well advised to integrate the cultural and civilizational precondition with policy imperatives at normative and empirical levels for achieving a secure and stable nation state by securitizing the social, political, human, economic and strategic aspects to emerge as a major power in amongst the comity of nations globally.

Conclusion

This is a referral research output. As we have noted in the very beginning that the purpose of this very compressed theoretical piece is to provide the future readers the conceptual and theoretical moorings of Hybrid Warfare. Adequate care has been taken to give extensive corroborating scholarly and policy-oriented writings that has appeared not only in the post 2006 but also the linkage to previous works on the larger issue of War and Violence. The presentation is hence a referral research essay to aid Researchers and policy makers in their quest to understand the complexities that the Global system will face in the 21st Century. With globalization and information technology having taken quantum leap and now with the utilization of cyber space and artificial intelligence, the specter of Hybrid warfare and Hybrid threats are there to stay in the international system. International relations amongst nation state and even the balance of power game will be deeply affected by the non-state actors. We have tabulated the observations and the policy recommendations at the very beginning and have added two seminal research papers on "Hybrid Warfare Ontology" and "Hybrid Warfare and Strategic Theory". It is hoped that the presentation along with its extensive corroborating references and appendices will help policy makers to undertake deeper studies and formulate national policies in this very important area.

References

1. See James G. McGann, 2020 Global Go To Think Tank Index Report
2. Ibid
3. See Graham Allison in his latest paper from Harvard University.
4. Details of Indian Border with her neighbouring states will be useful to understand the pre independence baggage that India carries and continues to carry:
5. See in Print: <http://theprint.in/india/governance/babu-samjho-ishare-modis-critique-of-ias-evokes-shock-but-many-also-call-for-introspection/603341/>
6. China's economic reform process began in December 1978 when the Third Plenum of the Eleventh Central Committee of the Communist Party adopted Deng Xiaoping's economic proposals. Implementation of the reforms began in 1979.
7. World Bank, China Overview, March 28, 2017, available
8. at <http://www.worldbank.org/en/country/china/overview>
9. Some companies use China as part of their global supply chain for manufactured parts, which are then exported and assembled elsewhere. Other firms have shifted the production of finished products from other countries (mainly in Asia) to China; they import parts and materials into China for final assembly.
10. See CRS Report RL33536, [China-U.S. Trade Issues](#), by Wayne M. Morrison.
11. The Organization for Economic Cooperation and Development, *Chinese Economic Performance in the Long Run, 960-2030*, by Angus Maddison, 2007.
12. New York Times, Mao's Great Leap to Famine, December 15, 2010.
13. Purchasing power parities are a method used to measure and compare the economic data of other countries expressed in U.S. dollars. That method adjusts the data to reflect differences in prices across countries.
14. This reference appears to have meant that it did not matter whether an economic policy was considered to be "capitalist" or "socialist," what really mattered was whether that policy would boost the economy and living standards.
15. Many analysts contend that Deng's push to implement economic reforms was largely motivated by a belief that they would boost economic growth and thus strengthen the power of the Chinese Communist Party.
16. China's economic growth slowed significantly followed the aftermath of the Tiananmen massacre that occurred in June 1989. Several countries, including the United States, imposed trade sanctions against China, and Chinese economic reforms were essentially put on hold. China's real GDP growth rate fell from 11.3% in 1988 to 4.2% in 1989 and declined to 3.9% in 1990. In 1991, economic reforms were restarted and foreign sanctions against China were reduced or removed, and real GDP grew by 9.2%.
17. Xinhua net, "20 million jobless migrant workers return home," February 2, 2009.
18. IMF, World Economic Outlook Database, April 2019.
19. OECD, Economic Outlook, May 2019, available at <https://www.oecd-ilibrary.org/docserver/b2e897b0-en.pdf?expires=1561458758&id=id&accname=oid011901&checksum=40A52BB1E685ADAB80433EDD227A4D65>
20. Japan was able to become a high-income economy, but since the mid-1980s, its economic growth has been relatively stagnant.
21. These designations are based on World Bank per capita GDP measurements.
22. The classifications are determined by per capita income ranges (the thresholds of which are adjusted annually). These include low-income economies, lower-middle-income economies, upper-middle-

- income countries, and high-income countries.
23. Long-term economic projections should be interpreted with caution.
 24. PPP data reflect what the value of China's goods and services would be if they were sold in the United States.
 25. The United States remains the world's largest economy when using nominal U.S. dollars.
 26. IMF, World Economic Outlook, October 2017, projections
 27. The World Bank, Data, at <https://data.worldbank.org/indicator/NV.IND.MANF.CD>.
 28. Deloitte, 2016 Global Manufacturing Competitiveness Index, 2016, available
 29. at <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/manufacturing/us-gmci.pdf>
 30. World Economic Forum, The Global Competitiveness Report, 2016–2017, September 2016.
 31. The Economist Intelligence Unit, Data Tool, accessed in June 2019.
 32. AmCham China, 2018 Business Climate Survey Report, January 2017, available at <http://www.amchamchina.org/>
 33. The Economist Intelligence Unit, Data Tool, accessed in June 2019.
 34. China 2012 Statistical Yearbook
 35. Industrial output is defined by the Chinese government as the total volume of final industrial products produced and industrial services provided during a given period. Source: China 2012 Statistical Yearbook
 36. U.N. FDI data differ from Chinese data, in part because Chinese data are limited to nonfinancial FDI and UNdata includes financial-related FDI. UNCTAD reports Hong Kong FDI data separately.
 37. UNCTAD, 2019 World Investment Report, available
 38. at https://unctad.org/en/PublicationsLibrary/wir2019_en.pdf
 39. The composition of Chinese FDI sectors has changed over the past few years. For example, according to AEI/Heritage Foundation, in 2010, 67% of Chinese FDI outflows were in energy and metals sectors, but by 2015, this level dropped to 29%, caused in part by large levels of Chinese FDI in transportation, finance, real estate, and technology sectors.
 40. Xinhuanet, "China's ODI sees stable development in 2018," January 16, 2019, available at http://www.xinhuanet.com/english/2019-01/16/c_137749000.htm
 41. Much of the FDI originating from Hong Kong may originate from other foreign investors, such as Taiwan. In addition, some Chinese investors might be using these locations to shift funds overseas in order to re-invest in China to take advantage of preferential investment policies (this practice is often referred to as "round-tipping"). Thus, the actual level of FDI in China may be overstated.
 42. See CRS Report RL34337, [China's Sovereign Wealth Fund](#), by Michael F. Martin
 43. At the end of 2015, CIC's assets totalled \$810 billion.
 44. Chinese oil and mineral companies are dominated by SOEs.
 45. The Chinese government is believed to be Lenovo's largest shareholder
 46. The Wall Street Journal, Xi Faces Test over China's Local Debt; Risks From Debt are Still Controllable, Audit Office Says, December 30, 2013.
 47. See for example, the Financial Times, "China local governments revive off-budget fiscal stimulus," September 21, 2016, available at <https://www.ft.com/content/b303f280-7f14-11e6-8e50-8ec15fb462f4>
 48. ExxonMobil, 2018 Outlook for Energy, A View to 2040, 2018, p. 60, available
 49. at <http://cdn.exxonmobil.com/~media/global/files/outlook-for-energy/2018/2018-outlook-for-energy.pdf>
 50. OECD, The Rising Cost of Ambient Air Pollution thus far in the 21st Century, Results from the BRIICS and the OECD Countries, July 2017, p. 22, available at <http://www.oecd-ilibrary.org/docserver/download/d1b2b844->

[en.pdf?expires=1517681542&id=id&accname=guest&checksum=9B43144FCF78931DCE50EBEC9B8F84E8](http://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR861/RAND_RR861.pdf)

51. The Rand Corporation, *Cost of Selected Policies to Address Air Pollution in China*, 2015, p. 3, available at http://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR861/RAND_RR861.pdf
52. Hazardous is the worst category for air quality used by the U.S. embassy, based on a numerical value of its index ranging from 301 to 500. A measurement of below 50 is considered good. On several occasions, the air quality index in Beijing has surpassed 500, and on January 12, 2013, it reportedly hit 755
53. National Public Radio, "Beijing's 'Airpocalypse' Spurs Pollution Controls, Public Pressure," January 14, 2013.
54. Xinhua, December 9, 2013.
55. The BBC, "China pollution: First ever red alert in effect in Beijing," December 8, 2015, available at <http://www.bbc.com/news/world-asia-china-35026363>
56. New York Times, "Concerns Grow About 'Severely Polluted' Water in China's Cities," February 20, 2013
57. Prepared by Candy Meza, Research Associate, Foreign Affairs, Defense, and Trade Division.
58. Congressional-Executive Commission on China, *Special Topic Paper: China's Household Registration System: Sustained Reforms Needed to Protect China's Rural Migrant*.
59. Annual survey of migrant workers conducted by the National Bureau of Statistics, 2014. <http://www.stats.gov.cn/tjsj/ndsj/2014/indexeh.htm>
60. China's goals are to achieve average annual GDP growth of 4.8% from 2020 to 2035 and 3.4% from 2030 to 2050. It seeks to achieve per capita GDP of \$20,000 by 2025 (making China a high income country), \$45,000 by 2035 (35% of U.S. levels), and \$120,000 by 2050 (half of U.S. levels).
61. The 2015 "Made in China 2025" document identified these 10 for support. These ten key sectors are (1) next-generation information technology, (2) high-end numerical control machinery and robotics, (3) aerospace and aviation equipment, (4) maritime engineering equipment and high-tech maritime vessel manufacturing, (5) advanced rail equipment, (6) energy-saving and new energy vehicles, (7) electrical equipment, (8) agricultural machinery and equipment, (9) new materials, and (10) biopharmaceuticals and high-performance medical devices
62. Xinhuanet, "Made in China 2025" Plan Unveiled, May 19, 2015, at http://www.xinhuanet.com/english/2015-05/19/c_134251770.htm
63. China Daily, "Made in China 2025 roadmap updated," January 27, 2018, at <http://www.chinadaily.com.cn/a/201801/27/WS5a6bb8b9a3106e7dcc137168.html>
64. The interview is available at <https://www.youtube.com/watch?v=L03Np5ZLvM8>
65. USTR, 2017 Report to Congress on China's WTO Compliance, January 2018, p. 10, available at <https://ustr.gov/sites/default/files/files/Press/Reports/China%202017%20WTO%20Report.pdf>
66. It is significant to note that the Trump Administration had not brought any WTO dispute settlement cases against China.