



美國第三次抵銷戰略：新軍事科技對亞太之意涵

America's Third Offset Strategy: New Military Technologies and Implications for the Asia Pacific

譯者簡介



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In a speech at the Reagan National Defense Forum on 15 November 2014, Secretary Hagel announced a new plan to "sustain and advance America's military dominance for the 21st century." He pledged that the DOD will intensify its efforts to "explore and develop new operational concepts, and new approaches to warfighting, war-gaming and professional military education." Secretary Hagel also announced the Defense Innovation Initiative(DII)because "DoD no longer holds exclusive access to some of the most cutting-edge technology the way [it] once did."

在2014年11月15日的「雷根國防論壇」演說中，國防部長海格(Chuck Hagel)發表了一份新的計畫，以「保持並促進美軍對21世紀之主宰」。他誓言國防部將竭盡其力，以「探索並建立新的作戰概念、新的戰鬥方式、兵棋推演以及軍事專業教育」。他也宣布了「國防創新方案」(Defense Innovation Initiative, DII)，因為「國防部業已不像以往一樣，獨自擁有最尖端的科技了」。

Hagel's entire initiative has come to be known in defence policy circles as the Third Offset Strategy after his predecessor Harold Brown's term for the "response to the then-perceived threat of an armored assault by the Warsaw Pact forces in central Europe" by using "U.S. technological advantage[s] to offset the quantitative advantage of Soviet forces." The First

Offset Strategy, exemplified by President Eisenhower's "New Look," relied on nuclear weapons to make up for the shortfall of men and equipment to face the Warsaw Pact in Europe. But this explicit choice to rely on nuclear strategy and tactical nuclear weapons contributed mightily to the Soviet-American nuclear arms race, encouraged both France and Great Britain to develop their own more-or-less independent nuclear force, and, eventually provoked a backlash that led the U.S. and NATO to invest heavily in conventional arms in Europe to help reduce the necessity of relying on nuclear exchanges. Eventually, Eisenhower's initial decision paved the way for strategic arms control and the emergence of the controversial Strategic Defense Initiative in the early 1980s.

海格的整個方案在國防政策圈內被稱之為「第三次抵銷戰略」，是繼他之前的布朗(Harold Brown)講出「為因應當前華沙公約兵力對中歐實施裝甲突穿之威脅」，利用「美國的科技優勢以抵銷蘇軍數量優勢」之用語而來。第一次的抵銷戰略出自於艾森豪總統的「新展望」(New Look)，倚靠核子武器以彌補面對歐洲華沙公約組織之人員與裝備的不足。但是，這種直接擺明了以核子戰略與戰術核武是賴的選項，促使美蘇核武軍備競賽，法國與英國也雙雙發展自己多多少少獨立自主的核子武力，最後，終於引發了強烈反應，導致美國及北約在歐洲大量投資於傳統武力，以降低仰仗核武交鋒之需求。到頭來，艾森豪的初衷開啟了戰略武器管制的道路，以及1980年代初備受爭議的「戰略防禦方案」(Strategic Defense Initiative SDI)爭執不下。

Harold Brown's 1970s Offset Strategy helped widen the technological gap between the United States and its allies around the world. Only belatedly were European allies willing to invest in the advanced technologies necessary to operate effectively with the United States - this problem remains today in Afghanistan, Libya and other hot spots where the United States and its European allies have been engaged in joint military operations.

1970年代布朗的抵銷戰略，助長了美國與其全球盟國科技差距之擴大。而一再的讓歐洲盟邦遲疑投資於美國作戰效益所需科技之意願——問題直到今日，美國與其歐洲盟邦在阿富汗、利比亞以及其他熱點從事之聯合軍事作戰，依然如故。

As William Perry has explained, the 1970's Offset Strategy was not simply about deploying more advanced technologies and more advanced weapons systems,¹ but was rather about increasing the effectiveness of weapons systems by using modern electronics and computers to improve both the situational awareness of warfighters and the ability of military units to communicate.² Further, as Ben FitzGerald emphasises, "this technological advantage, funded, built and controlled by the United States, was preserved through a series of export and trade controls, including the Arms Export Control Act, International Traffic in Arms Regulations and the Missile Technology Control Regime that allowed the United States and its allies to provide or deny access to particular technologies as required."³



正如同裴瑞(William Perry)的解釋，1970年代的抵銷戰略，並非單純的研發更先進的科技和更先進的武器系統，¹而是利用最新的電子與電腦，來改善戰鬥人員的狀況掌握，以及各部隊單位之間的溝通能力。²況且，如費茲傑拉德(Ben FitzGerald)強調的：「這種由美國出資、建立和掌握的科技優勢，透過了一系列的出口和貿易管制，包括了武器出口管制法案、國際武器運輸規定和飛彈科技管制機制等，使美國及其盟邦得以依需要提供或拒止特定科技之往來。」³

Dr Ashton Carter has since replaced Secretary Hagel as the Secretary of Defense. There are many reasons to believe that Carter will continue to pursue the Third Offset Strategy. Secretary Hagel had appointed Deputy Secretary of Defense Bob Work to oversee the Defense Innovation Initiative and announced a list of critical technologies that would provide the foundations for the new strategy: Deputy Secretary of Defense Work is not going anywhere anytime soon and has both the longstanding intellectual commitment to using technological solutions for strategic quandaries and the lead for Hagel's Offset approach within the Pentagon. Far more important, Dr Carter himself is a well-known proponent of advanced technologies. From his earliest publications on the command and control of nuclear weapons, anti-satellite weapons, and ballistic missile defence systems to his more recent service as the Under Secretary of Defense for Acquisition, Technology and Logistics, Dr Carter has supported Pentagon's pursuit of technological advantages over U.S. adversaries.⁴

卡特(Ashton Carter)博士自海格手上接任國防部長。有各種理由咸信他將會繼續抱持第三次抵銷戰略。海格指派副國防部長沃克(Bob Work)督導國防創新方案，並公布一份能夠為新戰略打下基礎的關鍵科技清單。沃克副部長寸步不離的全心全意投入其心智，以科技來解決戰略上的各種疑難雜症，為五角大廈內領導海格抵銷戰略之要角。更重要的是卡特博士他本身也是位知名的尖端科技擁護之士。從其最早在刊物上對核子武器之指揮管制、反衛星武器和彈道飛彈防禦系統發表之文章，至最近擔任之「武獲、科技與後勤」次長，卡特博士都不遺餘力的支持五角大廈在追求凌駕美國敵人的科技方面的優

1 William J. Perry, "Desert Storm and Deterrence," *Foreign Affairs* vol. 70, no. 4(Fall 1991), p. 68.

2 For some analysts the original offset strategy was the decision of the Truman administration to rely on nuclear weapons to overcome the Soviet Union then vast advantage in the number of conventional weapons and troops it could field in Central Europe.

3 Ben FitzGerald, "Can America Maintain Its Military-Technology Edge?" *The National Interest*(August 14, 2014). <http://nationalinterest.org/feature/can-america-maintain-its-military-technology-edge-11071>.

4 For an early but detailed statement of Carter's thinking see Ashton B. Carter with Marcel Lettre and Shane Smith. "Keeping the Technological Edge," in Ashton B. Carter and John P. White eds. *Keeping the Edge: Managing Defense for the Future*(Cambridge, MA, The MIT Press 2001), chapter 6.

勢。⁴

Reactions to the Third Offset Strategy 對第三次抵銷戰略的反應

To date, much of the subsequent attention devoted to Secretary Hagel's speech has focused on his call for an "initiative [that] is an ambitious departmentwide effort to identify and invest in innovative ways to sustain and advance America's military dominance for the 21st century. It will put new resources behind innovation, but also account for today's fiscal realities - by focusing on investments that will sharpen our military edge even as we contend with fewer resources."⁵ Far less has been written about new concepts, wargaming, and defence reforms, although arguably these will be the more influential components of the Third Offset Strategy if Hagel's vision is followed and implemented. Therefore, this policy brief will focus most closely on the implications of the Defense Innovation Initiative(DII)for the Asia Pacific.

至目前為止，大家對海格演說的注意力大多放在他呼籲要有一個「舉國防部內之全力，以確認並投入各種創新的方式，俾能維持並促進美軍對21世紀之主宰方面。創新的背後得要投入新的資源，但要考量到今日財政之現實——即使資源較少了，也要將投資用在強化我們的軍事優勢。」⁵對於新的作戰思想、兵棋推演和國防改革著墨的文章，卻少之又少，雖然這些對第三次抵銷戰略的影響更深遠，如果海格的願景得以遵行並實踐的話。因此，這項政策只不過是暗示國防創新方案之運用將置重點於亞太地區罷了。

What specific technologies will underpin the DII remains mired in the Pentagon's planning, programming and budgeting processes. Secretary Hagel mentioned "the most cutting-edge technologies and systems, especially in robotics, autonomous systems, miniaturisation, big data and advanced manufacturing, including 3-D printing."⁶ Early press reports suggested the new Offset Strategy would have a heavy emphasis on robotics.⁷ In January 2015, Katrina McFarland, the Assistant Secretary of Defense for Acquisition singled out "autonomous systems, human systems and cognition, electronic warfare, quantum sciences, hypersonics,

5 Chuck Hagel, "Reagan National Defense Forum Keynote," as delivered by Secretary of Defense Chuck Hagel, Ronald Reagan Presidential Library, Simi Valley, CA, Saturday, November 15, 2014 <http://www.defense.gov/Speeches/Speech.aspx?SpeechID=1903>.

6 Cheryl Pellerin, "Hagel Announces New Defense Innovation, Reform Efforts," DOD News(Nov. 15, 2014). <http://www.defense.gov/news/newsarticle.aspx?id=123651>.

7 Patrick Tucker, "The Pentagon's New Offset Strategy Includes Robots," DefenseOne(November 17, 2014). <http://www.defenseone.com/technology/2014/11/pentagons-new-offset-strategy-includes-robots/99230/>.



and the handling of large data as focus areas" for greater research and development.⁸ Recent reports based on interviews with defence industry representatives about the upcoming Long Range Research and Development Plan(LRRDP)have been critical of its broad brush approach including "space, undersea, air dominance and strike, air and missile defence."⁹ Deputy Secretary Work has appeared to advocate fairly specific investments in focused technologies, programmes and systems designed to meet future warfighting challenges, especially anti-access, area-denial(A2/AD)approaches seeking to thwart America's ability to project military power.

究竟何種特定的科技將是國防創新方案的定海神針，還困在五角大廈的計畫預算的作業程序中。海格部長說：「最尖端的科技和系統，尤其是在機器人、自動系統、微型化、大數據和先進製程，包括3D列印在內」。⁶先前的媒體報導認為新的抵銷戰略將極其重視機器人方面。⁷2105年1月，麥克法蘭(Katrina McFarland)挑選出「自動系統、人工系統和認知、電子戰、量子科學、超音速以及在重點領域掌握住大數據」，做更深入的研究發展。⁸近來的報導，經過和國防工業代表們就最近的長程研發計畫研討後，大改其路線要點，包括：「太空、水下、空中主宰與打擊、空中與飛彈防禦」等。⁹沃克副部長有意主張在重點科技上投入相當的特定資金，各項計畫和系統之設計要能滿足未來戰鬥之挑戰，尤以在力求阻撓美國軍力投射的反進入/區域阻絕(A2/AD)方面為然。

Paradoxically, the NSS itself focuses less on cutting edge and innovative technologies than "protect[ing]" and safeguard[ing] U.S. "investment in foundational capabilities like the nuclear deterrent, and we will grow our investment in crucial capabilities like cyber; space; and intelligence, surveillance, and reconnaissance."¹⁰ The next few years will likely reveal the difficulties of sustaining current advantages while pushing the technological edge.¹¹

8 Tony Bertuca, "Top DOD Acquisition Official Lists Planned 'Offset' R&D Investment Areas," InsideDefense.com's SitRep(Oct 30, 2014).

9 Tony Bertuca, Pentagon's Long Range Research and Development Plan RFI Extended," Inside the Pentagon(Jan 15, 2015).

10 NSS, p. 8.

11 There is, however, a strong analytic tradition that believes that the United States will maintain its technological superiority in weapons, especially in the face of military diffusion. "Path dependence, scale economies, learning effects regarding production techniques, and barriers to entry in the production of high-end military power make the maintenance of unmatched capabilities far easier than many retrenchment advocates suggest-particularly in today's environment in which modern weaponry is so much more complex both to produce and to use than in past eras." Stephen G. Brooks, G. John Ikenberry, and William C. Wohlforth, "Don't Come Home, America: The Case against Retrenchment," *International Security* vol. 37, no. 3(Winter 2012/13), p. 21.

但令人搞不懂的是，國家安全戰略本身的重點，卻並未放在最尖端與創新的科技，而是「保衛」和守護美國「核子嚇阻能量之投資，而且將加大投資力度在諸如網路、太空，以及情報、偵察與搜索等重大能力方面。」¹⁰接下來幾年，將可能暴露出維持現有優勢並同時推動尖端科技的難度有多大。¹¹

Implications for the Asia Pacific Security Environment 對亞太安全環境之意涵

Although Secretaries Hagel and Carter, and other Obama administration officials have been relatively careful about directly linking the Third Offset Strategy to the Asia Pacific region, much less linking it to any particular potential adversary like China, the approach must be understood within the wider context of American national security strategy in the second half of the Obama administration. First and foremost, as the 2015 National Security Strategy demonstrates, the Obama administration remains committed to the so-called Asia Pivot - now known as the Asia Rebalance. By 2020, the U.S. naval force posture will be roughly divided 60-40 between the Asia Pacific region and the rest of the world. As we shall see, American defence experts have not been shy about casting the Third Offset Strategy in terms of the Sino-American rivalry.

雖然海格和卡特兩位部長及歐巴馬政府其他官員，相當小心地不將第三次抵銷戰略與亞太地區產生直接的關聯，更不要與像中共這樣特定的潛在對手掛鉤，而是要讓人知道這個路線是歐巴馬政府下半場的美國國家安全戰略之一環。首先，正如2015年國家安全戰略顯示的，該政府仍一再承諾所謂的「亞洲中樞」(Asia Pivot)——如今稱為「亞洲再平衡」(Asia Rebalance)。至2020年，美國海軍在亞太地區與世界各地的兵力部署約為六四之分。我們將可預見美國的國防專家們，會在中美對抗方面就第三次抵銷戰略的角色，爭執不休。

Second, the Asia Rebalance itself is not explicable without reference to both the growing centrality of the Asia Pacific to the global economy and the potential threat posed by the combination of China's military modernisation and a more aggressive set of Chinese foreign and security policies. Specifically, as the most dangerous potential rival in the most significant geographic region, assuming the Third Offset Strategy has legs at least to the end of the Obama administration and likely far into the next presidential administration regardless of whether it is Democratic or Republican,¹² how is it going to affect U.S. allies and friends in the Asia Pacific?

其次，亞洲再平衡本身不能夠避開亞太成為世界經濟成長的中心，以及中共的軍事現代化，及其外交與安全政策上一連串的積極作為帶來的潛在威脅。尤其是，在最重要

¹² 於下頁。



的地緣地區有這麼一個最具潛在危險的對手，使得第三次抵銷戰略最起碼在歐巴馬政府的後期，或下一任不管是民主黨還是共和黨的政府，都要有所作為，¹²它會對美國在亞太的盟邦和友邦產生何種影響？

Decisions on how to implement the Third Offset Strategy will first hinge on how the Department of Defense, the individual military services, and the intelligence community evaluate the specific nature of the threat. Implementation will depend on the means by which planners propose to meet the threat, given the operational concepts used to organise and to apply to existing and projected military capabilities.

如何遂行第三次抵銷戰略的決心，首在於國防部、各軍種及情報界對特定威脅本質之評析。其實施則端視計畫人員打算應付威脅之手段，就賦予用以編組及運用現有的和計畫中軍事能力之作戰思想而定。

Defence analysts have proposed several ways to defeat America's adversaries which provide insight into the types of technologies that should be promoted by the Third Offset Strategy. Former Pentagon official and now Senior Rand analyst Dave Ochmanek has testified that the United States should develop capabilities that appear designed to thwart adversary A2/AD capabilities, perhaps along the lines of the now defunct AirSea Battle:

(i)Enhanced capabilities to thwart the enemy's attacking forces early in a conflict ; (ii) Resilient basing ; (iii)Rapid suppression/destruction of enemy air defences ; (iv)Degrading the enemy's situational awareness ; (v)Cyber defence and offense

國防的分析家們端出了好幾種可以促進第三次抵銷戰略以擊敗美國對手之科技。前五角大廈官員，如今則為蘭德公司資深分析家的歐克馬尼克(Dave Ochmanek)表示，美國應建立顯然是設計用以阻止敵人的反進入/區域阻絕能力，或許是和目前已廢止的「空海戰鬥」相呼應吧！包括如下：

- 一、強化在衝突之初阻止敵人攻擊之能力。
- 二、以迅速恢復戰力為要。
- 三、迅速制壓/摧毀敵之空防。
- 四、削弱敵之狀況掌握。

12 While the most vocal proponents of the Third Offset Strategy are either serving in the Obama administration or affiliated with Democratic-associated think-tanks like the Center for New American Security, support for the approach appears largely bipartisan. Witness the efforts of Forbes ... Of conservative think-tanks, only the Heritage Foundation has explicitly been critical of the Third Offset Strategy. James Jay Carafano, "The Third Offset: The 'Fairy Dust' Strategy," *The National Interest*(November 24, 2014). Available at <http://www.heritage.org/research/commentary/2014/11/the-third-offset-the-fairy-dust-strategy>.

五、網路之攻防。

Other analysts emphasise different sets of capabilities based in part on the long-standing development of the reconnaissance strike complex. Robert Martinage proposes focusing on technologies intended to increase the ability of the U.S. to conduct global precision strikes:¹³

(i)Increase space resiliency, hedge against the loss of space-based enablers, and develop counter-space capabilities;(ii)Expand the geographic coverage of the undersea fleet and sensor networks;(iii)Develop and field modern ground-, air-, and sea-deployed naval mines and long-range antisubmarine warfare weapons;(iv)Reverse the active defence versus missile attack cost exchange ratio;(v)Develop and field new counter-sensor weapons;(vi)Accelerate fielding of aerial refuelling capabilities;(vii)Field a new long-range strike bomber;(viii)Field land-based, penetrating, high-altitude, long-endurance UAVs and land- and carrierbased unmanned combat air systems; and(ix)Develop expeditionary, ground-based, local "A2/ AD" networks.¹⁴

其他分析家則以發展已有段時間的搜索打擊複合體為基礎，強調各種不同的能力。馬提納吉(Robert Martinage)提出重點置於有助美軍實施全球精準打擊能力之科技。包括如下：¹³

- 一、增進太空之迅速恢復能力、防範以太基增能者之損毀，並發展各種反太空之能力。
- 二、擴大水下艦隊及感測網路之地緣涵蓋。
- 三、發展並部署新式的陸射、空射與海射之水雷，以及長程的反潛作戰武器。
- 四、反轉積極防禦對飛彈攻擊成本的交換比。
- 五、發展並部署新的反感測武器。
- 六、加速部署空中加油能力。
- 七、部署新型長程轟炸機。
- 八、部署陸基、穿透、高空、長滯空的無人載具，以及陸基與艦載的無人空戰系統。
- 九、發展遠征的、陸基的、當地的反進入/區域阻絕網路。¹⁴

Whether the technological innovations, new warfighting concepts, advanced gaming techniques, and defence reforms proposed under the umbrella of the Third Offset Strategy

13 Precision strike is defined as "the striking of an adversary while utilizing guided munitions" while long-range or global precision strike is "[t]he capability to achieve a desired effect(s) rapidly and/or persistently, on any target, in any environment, anywhere, at any time." Rand Huiss, Proliferation of Precision Strike: Issues for Congress, CRS Report for Congress no. R42539(May 14, 2012). May 14, 2012

14 Robert Martinage, Statement before the House Armed Services Subcommittee on Seapower and Project forces on the Role of Maritime and Air Power in the DoD's Third Offset Strategy, December 2, 2014.



follow the long-standing trends associated with global precision strike, AirSea Battle, some combination thereof(they are not necessarily incompatible), or some other overarching theme, it is important to begin considering how they will affect the strategic dynamics in the Asia Pacific.

在第三次抵銷戰略的大傘下，不管是科技創新、新戰鬥概念、高級的兵棋技術與國防改革，跟隨著行之已久的全球精準打擊、空海戰鬥、併用諸般手段(並非不可相容)或其他某些包羅萬象的主題，將會如何，重要的是，該開始考量他們將會如何影響亞太戰略動態。

Chinese Military Modernisation 中共的軍事現代化

The nature of China, the greatest strategic rival to the United States, also calls into question the utility of a technology driven strategy. Modern China, unlike most post-Cold War American adversaries, is technologically advanced and may be approaching or exceeding American capacities in selected military systems necessary for modern warfighting-missile, space-based, and undersea systems, for example. Most cybersecurity specialists already agree that Chinese hackers, with or without government support, have wreaked havoc in U.S. national security systems including the defence industrial base. Cyber-power is a key element of Chinese strategy.¹⁵ Even more importantly, despite significant weaknesses and failures, the trend line for China's own military technological progress is positive: China is investing in systems necessary to match or counter U.S. capabilities. Where it cannot match American capabilities in the short-to-intermediate term, it has invested heavily in asymmetric capabilities and doctrine intended to counter American strengths.¹⁶

中共的本質為美國最大的戰略對手，也是要求探究以科技推動的戰略。中共和冷戰時期美國大多數的對手不同，是科技先進，並且在現代戰爭所要的軍用系統上的選項——例如飛彈、太空和 underwater 系統，接近或超越美國的能力。大多數的網路安全專家都一致同意，中國的駭客，無論是否受政府指使，破壞了美國國家安全體系，也包括國防工業基地。網路力量是中國戰略重要的一環。¹⁵更重要的是，不論有多麼脆弱與失敗，中共自己的軍事科技進展趨勢是正向的：中共在匹敵或對抗美國能力所要系統上之投資甚大。雖在近期尚無法與美國分庭抗禮，但在不對稱戰力與準則上之著力，意圖對抗美國的實力。¹⁶

15 Magnus Hjorddal, "China's Use of Cyber Warfare: Espionage Meets Strategic Deterrence." *Journal of Strategic Security* 4, no. 2(2011): 1-24.

16 On asymmetric war in general see Roger W. Barnett, *Asymmetrical Warfare: Today's Challenge to U.S. Military Power*(Potomac Books Inc., 2003).

Analysts in the Asia Pacific believe some nations are developing anti-access/area-denial strategies(A2/AD)intended to prevent the U.S. navy and other forces from operating close in.¹⁷ Using a wide variety of tactics from the high technology threat of long-range precision strike to relatively low technology mine warfare systems, several nations have developed the means to undermine American freedom of action in the littorals and perhaps the oceans. U.S. adversaries may attempt to prevent joint and combined military forces from reaching their full combat potential and incurring great costs for trying to do so.

亞太的分析家們認為，某些國家正在發展反進入/區域阻絕戰略，以企圖防範美軍及其他兵力之接近。¹⁷運用各種的戰術，從高科技威脅的長程精準打擊，至相當低科技的水雷作戰系統，有幾個國家業已建立了不利美國於濱海，甚至大海行動自由的手段。美國的對手企圖阻止其聯合和統合的軍力，充分發揮其戰鬥潛能，若然，美國必須付出極大的代價。

At the heart of the much recent thinking about A2/ AD is the growing reliance of all parties on cyber capabilities.¹⁸ In effect, unfriendly states will use U.S. reliance on computer and communications networks to disrupt American and allied forces in the war theater and prevent or delay forces stationed elsewhere from flowing into the region. The American joint force and, in all likelihood, the forces of key American partners and allies will face a wide range of cyber operations intended to disable command and control systems, make existing C4ISR arrangements unreliable, and even affect the logistics trains necessary to support combat elements far from the American homeland.

近期對反進入/區域阻絕思考之中心，漸漸放在各方網路戰能力的高低方面。¹⁸事實上，不友善的國家將利用美國對電腦及通信網路的依賴，在戰區瓦解美國及其盟邦之

17 See for example, Thomas G. Mahnken, "China's Anti-Access Strategy in Historical and Theoretical Perspective," *Journal of Strategic Studies* vol. 34, no. 3(2011), pp. 299-323. Some analysts believe that Iran is developing A2AD capabilities the Arabian Gulf as well. Krepinevich argues that "[w]ith a similar goal of regional hegemony but fewer resources, Iran is pursuing more modest A2/AD capabilities, including antiship cruise missiles, sophisticated antiship mines, and submarines. Andrew F. Krepinevich Jr. "Strategy in a Time of Austerity: Why the Pentagon Should Focus on Assuring Access," *Foreign Affairs*(November/December 2012).

18 Richard A. Bitzinger and Michael Raska, "The AirSea Battle Debate and the Future of Conflict in East Asia," *RSIS Policy Brief*(February 2013), p. 5. Available at http://www.rsis.edu.sg/publications/policy_papers/RSIS_Air%20Sea%20Battle_190213%20v1_Print.pdf. Also, Martin C. Libicki, "Chinese Use of Cyberwar as an Anti-Access Strategy: Two Scenarios," Testimony presented before the U.S. China Economic and Security Review Commission on January 27, 2011. Available at http://www.rand.org/content/dam/rand/pubs/testimonies/2011/RAND_CT355.pdf



軍隊，阻止或延遲駐紮於其他地區的兵力，源源不絕的進入該區。美國的聯合部隊及其重要夥伴和盟邦所有類似的部隊，都將面對各種的網路作戰，企圖使指揮管制體系失效，讓現有C⁴ISR的裝置失靈，並甚至影響到遠從美國本土運輸支援戰鬥單位所需的後勤。

Further, unless the United States military and intelligence communities can somehow overturn the laws of physics, economics, and geography simultaneously, the U.S. remains at a disadvantage relative to China in terms of the fundamentals of military conflict in the Asian littoral. The United States is attempting to project power half a world away against a continental-sized power. This necessitates the U.S. to expend more resources to bring its military power to bear across the Pacific Ocean. Simple logic dictates that the long-lines of communication tethering the forces at sea to the American homeland or to bases located in the Asia Pacific region (often within range of Chinese missiles) will be vulnerable- not just to kinetic measures but to cyber operations that threaten telecommunications and computing systems enabling the United States to operate its netted, joint force. Cyber conflict, an outgrowth of America's own preferred way of war, provides a key vulnerability in future conflicts.

尤有甚者，除非美軍和情報界可以某種程度的同時克服實質、經濟與地緣的法則，就亞洲濱海地區衝突的要義而言，美國是相對較中共為不利的。美國得要繞地球半圈投射戰力以對抗一個大陸型的強權，這使得美國必須花費更多的資源以使其軍力橫渡太平洋。只要想想從美國本土與海上部隊聯繫所需的長程通信，或位於亞太地區的各個基地(大多在中共飛彈射程之內)就夠脆弱的了？不必用硬殺的手段，只需用網路戰，危及到美國作戰網和聯合部隊用的電信與電腦體系就夠了。在未來，美國成也網路戰，敗也網路戰。

Somewhat reassuringly, the most cogent explanations of the Third Offset Strategy recognise that the most dangerous, if not most likely, potential adversaries for high-end combat with the United States will exploit American reliance on integrated military systems. Martinage warns that the United States will face "aggressive electronic and cyber-attacks focused on disrupting U.S. C⁴ISR networks."¹⁹

值得強調的，大家咸認第三次抵銷戰略，最危險的將是潛在敵人和美國的高端戰鬥，將剝奪美國整合軍事體系的可信度。馬提納吉警告美國將會面臨「積極的置重點於瓦解美國C⁴ISR網路的電子攻擊」。¹⁹

19 Robert Martinage, Toward a New Offset Strategy Exploiting U.S. Long-Term Advantages To Restore U.S. Global Power Projection Capability (Center for Strategic and Budgetary Analysis 2014), p. 32. Available at file:///C:/Users/pdombrow/Downloads/Offset-StrategyWeb%20(2).pdf.

Future adversaries will be able to degrade, disrupt or make unavailable at least(temporarily)many critical communications and targeting systems enabled by GPS and satellites. The key question is whether planners, acquisition officials and the defence industry can and will design and procure Offset Strategy technologies either hardened against such disruptions or resilient enough to operate effectively in a degraded environment.

未來的對手將有能耐降低、瓦解或暫時使許多利用全球定位系統與衛星的通信和標定系統失靈。無論是計畫人員、武獲官員和國防工業的當務之急是能夠且將會設計與獲得抵銷戰略的科技，以強化對抗這些干擾，或能在一個被貶抑的環境下足以有效的實施作業。

Peacetime Competition 平時的競爭

The single most basic assumption underlying the Third Offset Strategy like its two predecessors is that the economic, industrial and technological strength of the United States can be harnessed to overcome the advantages of potential adversaries and the inherent difficulties associated with military power projection from the United States to the far reaches of the globe. Some scholars, including Tom Mahnken, building on analyses developed by the Department of Defense's Office of Net Assessment, advocate that the United States adopt competitive strategies which self-consciously impose costs on adversaries and potential adversaries by setting the pace with innovative military technologies.²⁰

像前兩次一樣，第三次抵銷戰略最重要的假定便是美國的經濟、工業與科技強項能夠凌駕潛在對手的優勢，克服美軍從美國投射至地球彼岸所帶來之困難。有些學者，包括馬坎(Tom Mahnken)在國防部淨評估辦公室下做出的分析，主張美國採用競爭的戰略，藉設定創新科技的進度來迫使對手及潛在敵人付出代價。²⁰

The problem is that the United States might not be able to sustain a pacing strategy in the long run, and at least one potential competitor, China, may be better positioned to win the technological competition. China's economic growth remains high, between 7-9 per cent in recent years, and its willingness to invest in military modernisation has grown tremendously over the past decade. Numerous accounts document how the Chinese defence industry has increased its capacities,²¹ at least in part, by using cyber espionage to steal American and

20 Thomas G. Mahnken, *Competitive Strategies for the 21st Century: Theory, History, and Practice*(Palo Alto: Stanford University Press, 2012)

21 Tai Ming Cheung, *Fortifying China: The Struggle to Build a Modern Defense Economy*(Cornell University Press 2008).



western technology and reverse engineering weapons and systems.²² Furthermore, it is worth remembering that neither of the first two offset strategies confronted an adversary-the Soviet Union-whose Gross Domestic Product approached that of the United States.

問題在於美國可能無法長期負擔競爭的戰略，至少對中國這樣的潛在對手而言，還是擺在贏得科技的競爭上比較好。中國的經濟成長仍然維持高檔，近年來都在7~9%之間，過去10年於軍事現代化的投資意願有增無減。有關於中共國防工業增進其能力的文件，汗牛充棟，²¹至少在利用網路間諜竊取美國及西方科技，以武器與系統的逆向工程方面為然。²²更何況，值得注意的是前兩次抵銷戰略對付的對手是蘇聯，而其國民生產毛額遠不如美國。

The United States, on the other hand, remains uncertain about its economic recovery from the 2008 recession, tired of the post-9/11 increase in national security spending, and, by some accounts, greatly in need of domestic investment(in education and infrastructure)to ensure its own economic prosperity. It might be risky to initiate an Offset Strategy that depends on out-innovating and outspending rivals.

另一方面，美國仍對2008年以來的經濟衰退之恢復充滿了不確定，飽受後911國家安全支出增加之苦，以及內需(教育和基礎建設)的大幅增加以確保本身經濟的繁榮。要發起一項依靠超越對手的創新與支出的抵銷戰略，風險太大。

The United States has not helped itself over the past several decades because it has failed multiple times to reform the defence acquisition system,²³ or overcome political problems associated with the complicated relationship between the defence officials, the military services, the U.S. Congress and the largely private defence industry. As discussed above, the increasing importance of cybersecurity has made these problems even more intractable. Even as the traditional defence industry remains ready and able to meet the nation's defence procurement needs if it is given clear guidance and adequate incentives,²⁴ most firms in the software and hardware sectors of the information technology industry have not and do not work closely with either the U.S. government or defence industry proxies including prime contractors and systems integrators. Overcoming cyber operations of adversaries and protecting

22 William C. Hannas, James Mulvenon, and Anna B. Puglisi *Chinese Industrial Espionage: Technology Acquisition and Military Modernisation*(Routledge, 2013).

23 See the history of acquisition reforms and recommendations for the future in Jacques Gansler, *Democracy's Arsenal Creating a Twenty-First-Century Defense Industry*(Cambridge, MA: MIT Press 2012).

24 Peter Dombrowski and Eugene Gholz, *Buying Military Transformation: Technological Innovation and the Defense Industry*(New York: Columbia University Press 2007).

the highly networked military systems of the U.S. military will require a hybrid Cyber Military Industrial sector. Despite the recent attention of the Obama administration to cybersecurity and the relative growth of "cyber" as a component of recent defence budgets, this hybrid appears far in the future.

美國在過去幾十年也沒有自求多福，因為有幾度未能改革國防獲得體系，²³或克服國防官員、各軍種、美國國會以及大型的私營國防工業複雜關係所帶來的政治問題。就像前面所討論的，網路安全重要性之日益增加，使得這些問題更為棘手。即使是有明確的方針和足夠的誘因，傳統的國防工業隨時準備好了，並能夠滿足國家國防採購之需求，²⁴絕大多數的資訊科技工業軟硬體的公司，並未也確實沒有和美國政府或國防工業代理商，包括了主要合約商與系統整合者，合作無間。克服敵人的網路作戰，並保護美軍高度網路化的軍事體系就得要軍民網路工業部門的混合。儘管近期歐巴馬政府對網路安全之注意，以及最近「網路」的國防預算大幅增加，但要合在一起還言之過早。

Minding the Gap 小心差距

One major difficulty for American allies and potential coalition partners is keeping pace with American military innovations. As Theo Farrell and Terry Terriff observe about the past several decades, "European states have simply been unable to match the level of U.S. investment in new military technologies and so for some time critics have warned of a growing 'transformation gap' between the United States and the European allies."²⁵ A similar dynamic is likely to develop in the Asia Pacific. Relatively few regional partners are likely to match the United States as it accelerates efforts to adopt innovative technologies in the face of the Chinese A2/AD challenge. In theory, this could lead to tension between and among America's Asian partners, especially as there are existing disagreements about how to meet the Chinese challenge and what military measures are necessary. Farrel, Terrif and Osinga's detailed research into America's relationship with its NATO allies provides a more nuanced view of a previous and ongoing transformation gap that may provide insight into what will happen in the Asia Pacific in the coming years. Most important, their research demonstrates that a wide variety of international and local factors intersect to shape the responses of individual states to the process of military transformation, and, in particular, the difficulty of coalition operations among militaries with very different levels of capability. Clearly some states, like Japan, South Korea and Singapore may choose to match American military investment in innovative

25 Theo Farrell and Terriff Terry, "Military Transformation in NATO: A Framework for Analysis," in Theo Farrell, Terriff Terry, and Frans Osinga, eds., *A Transformation Gap: American Innovations and European Military Change*(Palo Alto, CA, Stanford Security Studies 2010), p. 1.



technologies, while other with less robust economies or very different strategic cultures and circumstances(i.e. India)may choose not to or simply will try and fail. Clearly, individual states might benefit from procurement strategies and defence industrial relations that mind the potential for gaps between U.S. and regional partners. Some challenges will be technical and technological- sustaining the interoperability of communications systems for example-but many others will involve doctrine and training.

美國盟邦與潛在的聯軍夥伴的一大問題便是跟不上美國軍事上創新的腳步。就如同法瑞爾(Theo Farrell)和特瑞夫(Terry Teriff)在過去幾十年所看到的：「歐洲各國在新的軍事科技方面的投資水準根本不能與美國相提並論，並因此不時引起美國與歐洲盟邦之間轉型差距逐漸加大之批評聲浪。」²⁵亞太的發展動力亦復如此。在面對中共對反進入/區域阻絕之挑戰，沒有幾個地區的夥伴願意加快創新科技以跟上美國之腳步。理論上而言，這將導致美國的亞洲夥伴之間和其中的緊張，尤其是在存有如何應付中共的挑戰及需要什麼樣軍力的歧異之際。法瑞爾、特瑞夫和歐辛加(Frans Osinga)對美國與歐洲盟邦關係之深入研究，提供了以往和現在的轉型差距，而未來在亞太亦將如此的微妙觀點。更重要的是，他們的研究顯示在各種國際與當地的因素交織下，決定了各國軍事轉型的程度，特別是在軍力層次相距懸殊的軍隊中實施聯合作戰之困難度上而言。顯然有些國家，像日本、南韓和新加坡可能會選擇配合美國在軍事創新方面的投資，其他經濟較差或戰略文化和情況極其不同的國家(如印度)就不會或根本不想。顯然個別國家也許能從軍購戰略與國防工業的關係上得利，以彌補與美國和區域夥伴之潛在差距。有些挑戰將是技術與科技的，例如在維持通信系統的互通上，但是其他的還包括準則與訓練上的問題。

Conclusion 結論

As with the previous two versions, over time the Third Offset Strategy will have far-reaching effects on American allies, friends and adversaries. Not all of the effects will be positive from the perspective of individual countries or even the international and regional security environment as a whole. American policy-makers recognise that the Third Offset Strategy will impact the rest of the world but they appear relatively sanguine about the results. Deputy Secretary of Defense Robert Work has spoken directly about this issue in a series of speeches: "[w]hile the Defense Innovation Initiative and a third offset strategy is a U.S. initiative, it will also require a deliberate, aggressive effort on the part of our allies." Yet, history of both the earlier Offset Strategies should give a pause.

像前兩次的版本一樣，第三次抵銷戰略也將會對美國的盟邦、友邦和對手，產生深遠的影響。從個別國家或國際和區域安全環境的觀點來看，並非所有的影響都是正向的。美國的決策者認知到第三次抵銷戰略將會衝擊到世界其他的地方，但是顯然他們對其結果懷抱著相當的希望。副部長沃克在好幾次的演說中都直言不諱：「雖然國防創新方

案和第三次抵銷戰略是美國的一項方案，但它也需要我們盟邦慎重而積極的努力。」然而，之前兩次抵銷戰略的歷史都是無疾而終的。

For the future, it remains an open question whether American allies will follow the U.S. lead. Japan's defence spending remains limited; India is still catching up with capabilities reminiscent of the Eisenhower years (aircraft carriers, missile systems and nuclear submarines); and the smaller friendly states across the Asian littoral have demonstrated a reluctance to balance militarily or even diplomatically with the United States. As the United States remains engaged to counter any China threat, they see little need to overspend on military equipment or innovations that will neither provide sufficient defence against regional powers nor allow coalition operations at the high end of conflict.

對未來而言，美國的盟邦是否還會追隨美國的領導仍不無疑問。日本的國防支出依舊有限；印度仍然追求著艾森豪時代能力之餘緒(航空母艦、飛彈系統、核子潛艦)；亞洲濱海地區較小的友邦已經表露不想在軍力或甚至外交上和美國一致的意願。只要美國仍然在對付中共的任何威脅，他們認為沒什麼必要花大錢搞軍備或創新，這將既不能提供足夠的防衛以對抗區域的強權，也無法在高端的衝突中實施聯盟作戰。

And, of course, Chinese officials themselves are well aware of both their own military strengths and American vulnerabilities; hence the intense pursuit of A2/AD capabilities. There is little reason to believe that the newly confident and relatively wealthy China will not adjust to the Third Offset Strategy.

當然，中共官方對他們自己的軍力及美國的弱點都知之甚詳，因此才會追求各種反進入/區域阻絕的能力。沒有什麼理由認為這個新的自信滿滿又相當富裕的中共，不會去適應這個第三次抵銷戰略。

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取材：新加坡南洋理工大學RSIS國際研究中心政策報告，2015年6月。