

# China's Science of Military Strategy: Cross-Domain Concepts in the 2013 Edition

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The *Deterring Complex Threats* project is a collaboration between researchers at the University of California San Diego, the University of Toronto, University of California Berkeley, the Lawrence Livermore and Los Alamos National Laboratories, and the University of Maryland to study the effects of complexity and variety in the means available for political influence—operations in the warfighting domains of land, sea, air, space, and cyberspace as well as non-military instruments—on the theory and practice of deterrence. For more information visit us at [www.deterrence.ucsd](http://www.deterrence.ucsd).



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## Introduction

The *Science of Military Strategy* is the capstone doctrinal publication of the Chinese People's Liberation Army (PLA). It is compiled and edited by the PLA's prestigious Academy of Military Science (AMS). The first two editions were published in 1987 and 2001 respectively. The 2013 edition is compiled by researchers from the Editorial Group for the Science of Military Strategy in the Research Department of Military Strategy, to meet the changing and developing circumstances in the PLA, China and the world. The book is regarded as a theorization of the PLA's military strategy, an important reference for the PLA in conducting training, education and research.

In contrast to the previous two editions, the latest edition of the book incorporates new chapters that were not previously found.

- The strategic planning and guidance for the use of military force in the peaceful time.
- The strategic planning and guidance for military struggles<sup>1</sup> in nuclear area, space and cyberspace.
- Strategies for military branches and battle zones.
- Strategic space and strategic layout
- The planning and guidance for the construction of armed force with Chinese characteristics.

The Academy of Military Science of the Chinese People's Liberation Army is “a research organ under the direct leadership of the Central Military Commission, a center for military science research, and headquarters for planning and coordinating such research in China.”<sup>2</sup> Together with the University of National Defense, the AMS is a crucial military

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<sup>1</sup> 斗争 *dou zheng*

<sup>2</sup> Academy of Military Science Official Website:

[http://www.ams.ac.cn/portal/security/indexnew!jkgk\\_english.action?subjectxsjlld=ab3201c9-62f3-4061-879c-77b04293a539](http://www.ams.ac.cn/portal/security/indexnew!jkgk_english.action?subjectxsjlld=ab3201c9-62f3-4061-879c-77b04293a539)

“The AMS focuses its studies on national security strategy, military thought and military strategy, operational theory, national defense and armed forces building, military history, military political work and foreign military affairs, In addition, the AMS takes the task of developing doctrines and regulations, conducting experiment and assessment of joint operations and compiling military encyclopedia.

research institution that draws researchers from both the academia and the field within the PLA.

The new edition consists of 12 chapters in total – one chapter is dedicated to military deterrence, one chapter is dedicated to non-war military operation, and one chapter is dedicated to military struggles in the nuclear area, space and cyberspace. Besides the first six chapters, which lay-out the fundamentals for the international order that China is facing, and the characteristics of war that the PLA may involve in, it talks about specific strategies that PLA could employ in different fields from the seventh chapter onwards. The following section will illustrate the focuses of different chapters, with special emphasis on deterrence-related texts. In general, the paper seeks to provide an overall review of the 2013 edition of *The Science of Military Strategy*, and provides the readers with a comparative perspective that entails the recent evolution in the PLA's emphasis of theorization.

### **World Order and China's Role in the Changing Environment**

The creation of a country's military strategy is fundamentally based on the perception that particular country has upon the world, and its own perceived position. In order to understand why a country chooses certain strategies, we have to examine the country's worldview, and its assessment about its own position, mission and goal in that particular environment.

Historically, Chinese leaders have always had a unique interpretation about the world order in a particular period. Mao Zedong created the "Three Worlds" view, in which the US and its allies were the first world, the Soviet Union and its allies were the second, and all other countries were third. China's worldview at that time was characterized by the struggle between different worlds. Deng Xiaoping then made an important argument in the 1980s that a full-scale world war was not foreseeable in the near future. That argument transcended China's military strategy from exporting revolution and advocating class

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Over half a century, the AMS has produced numerous original works and influential policy papers, and contributed greatly to the advancement of China's military science, and the modernization of national defense and armed forces."

struggle to national defense and self-preservation. As the Cold War came to an end and the world is ever changing, China's view about the world is modifying accordingly.

*“The international strategic order is undergoing a structural change from unipolarity to multi-polarity.... Since the end of the Cold War and the disintegration of the Soviet Union, the US became the hegemon which maintained and manipulated the world order. The world was unprecedentedly unipolar.... In the 21<sup>st</sup> century, the old balance that was characterized by unipolarity is being shaken though the US still remains as the only superpower. A new international balance that is characterized by multipolarity and co-governance as developmental tendency is being constructed.... The fundamental reason of change for the international strategic order is the economic inequality.”<sup>3</sup>*

China believes the world will observe more frequent cooperation and competition among countries in the future than that in the past. The international relationship will become more complicated as the interdependence among countries is deepening. Militarily, countries will attempt to obtain advantageous edge so the struggle will be intensified. Geographically and politically, the pivot for international military struggle will be the Asia-Pacific region. Competing for new strategic space will be a path of military development for many countries.

Hence, China defines its own role in accordance with its understanding about the world order and the changing situation. First, it reaffirms China's desire for all-around development, and it believes the process of multipolarization provides a platform and opportunity for such development. The globalization of international economy and the informatization of society grant China more momentum in its own development. Secondly, China's increasing national profile and strength further enable itself to create a desired safe environment. In general, this is a strategic opportunity for development.

### **PLA' s Historic Mission**

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<sup>3</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. Pp.70.

The PLA, as the only legitimate armed force controlled by the Communist Party of China (CPC), is the primary executor of China's defense policy and military strategy. Its historic mission statement is closely relevant to China's worldview and its self-perceived role. In 2007, then President of the CPC's Central Military Committee Hu Jintao declared the PLA's historic mission in four aspects:

- Providing an important source of strength to consolidate the ruling position of the CPC.
- Providing a solid security guarantee to sustain the important period of strategic opportunity for national development.
- Providing a strong strategic support to safeguard national interests.
- Playing a major role to maintain world peace and promote common development.

It is clearly stated in the mission statement that the PLA prioritizes the survival of the party regime over anything else. Beyond the survivability of the regime, the PLA pays attention to threats to China's national security and China's developmental potential. Furthermore, it demonstrates the determination to protect China's *national interests*, which is an ambiguous concept since national interests could always be fluid. In face of intensifying international competition, China acknowledges the fact that China's national interests might overlap with other countries, thus the PLA should be prepared to defend such interests when necessary. These national interests are no longer confined by China's territorial boundary, so inevitably the PLA is stepping outward. It is well exemplified by China's regular participation in anti-piracy and escorting missions at the Bay of Aden. Compared to its previous mission statements that emphasized the ability of defending China's territorial integrity and countering potential invasion, the PLA is undergoing a transformation from "war strategy" to "historic mission strategy," from "contingency-based strategy" to "capability-based strategy."<sup>4</sup>

However, China also assesses possible challenges and obstacles that may impede China's development in realizing its goals. China perceives there is a strategic containment

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<sup>4</sup> Cheng, D. (2009). Prospects for China's Military Space Efforts. In Kamphausen, R., Lai, D. & Scobell, A. (Eds.). *Beyond the Strait: PLA Missions Other Than Taiwan*. U.S. Army War College.

against China, led by the US and its Asian-Pacific allies – Japan, South Korea, Taiwan, the Philippines, Australia, India, possibly Vietnam and some other Southeast Asian countries. Some of the countries constitute what China calls “the first island chain” which encircles China and hinders China’s ability to venture into the West Pacific. Issues of regional security also come to China’s attention as the territorial disputes over the South China Sea, East China Sea and along the Indo-Chinese border are intensifying. Any conflict in the surrounding area could possibly interrupt China’s attempt for development. Taiwan, a province that China deems to be united eventually, is getting rather unpredictable as recent election has shown the mainland-inclined Kuomintang is losing its popularity and may even lose power in the coming presidential election. Other external threats include the resistance on the expansion of China’s interests, and the military clashes taking place along the Chinese border that may force China to react. In early June 2015, the 14<sup>th</sup> Army Corps based in Yunnan Province carried out a live fire drill along the Chinese-Burmese border. The action was regarded as a reactive response to the infringement of Burmese fighter jets that caused casualties in the Chinese territory.

Internally, the pressure of domestic stability is another issue, that catches the nerve of the Chinese Armed Forces. Though the PLA is not directly in charge of securing internal stability (the Armed Police is), it still has the responsibility in disaster relief and contingency response.

With all these factors stated, Chinese scholars predict future wars that may involve China as *local wars under conditions of informatization*:

*“Generally, the possibility of a large-scale ground invasion by an adversary is minimum. However, the danger of being the target of high-technological warfare, such as air-naval, air-space, and space-cyber wars, is intensifying. The threat from the east is more severe than that from the west, the threat from the sea is more severe than that from the ground; the threat from space and cyber network is gradually becoming true. The probability of conducting military operations to protect rights and limited oversea war operations is ever increasing. The most severe war threat is a large-scale strategic sudden attack launched by a strong adversary, which aims at destroying our war potential to force*

*us to surrender. The most probable war threat is a limited military conflict from the sea. The war we need to prepare for, particularly given the background of nuclear deterrence, is a large-scale, and highly intensive local war from the sea.”*<sup>5</sup>

Hence the PLA’s historic mission is *winning local wars under conditions of informatization.*<sup>6</sup>

### **Conditions of Informatization**

Because of the growing significance and sophistication that information technology plays in wars, the increasing pace of weaponry revolution, and the current period that all major countries are renewing their strategies, contemporary wars display the following fundamental characteristics:

- *Confrontation of systems as the fundamental manner of confrontation*<sup>7</sup>

Wars under the informatized conditions are no longer purely confrontations of defense elements, operational units or armed forces. They are more of confrontations of the whole systems; each country has in political, economic, social, legal and of course, military aspects. The superiority in operational capacity does not necessarily translate into a victory when the whole system, including operational capacity, is being tested.

- *Mid- and long-range accuracy strike as the determining method of operation*<sup>8</sup>

Mechanical technology and information technology enable modern wars to be conducted remotely. Attacking the adversary from far distance to preserve oneself is a requirement on the levels of campaign, as well as of strategy.

- *Power enhancement by using networked military information system*<sup>9</sup>

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<sup>5</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. Pp.100

<sup>6</sup> 打赢信息化条件下的局部战争 *daying xinxihua tiaojian xia de jubu zhanzheng*

<sup>7</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. Pp.93.

<sup>8</sup> Ibid. Pp.94

<sup>9</sup> Ibid. Pp.94.

Military operation is undergoing a transformation from platform-based during the industrial age, to network-based during the information age. Information networks effectively enhance the capacity and the efficiency of military operation.

- *Unification of information and artillery as the main method of operation*<sup>10</sup>

Information technology plays an exceptionally critical role, while combining with the artillery capacity that an army has. On one hand, information enhances the accuracy of far-distance striking. On the other hand, an informational attack could impede the ISR (intelligence, surveillance, reconnaissance) ability of the adversary, thus deepening the impact of an artillery strike.

- *Area of operation expands from three-dimension to five-dimension*<sup>11</sup>

As stated, the area of military operation is no longer constrained in land, sea and sky. Space and cyberspace have become integrated parts of military operation.

- *The fast-movers dominates the slow-movers*<sup>12</sup>

Time is a determining component in modern wars. Groups involved in a conflict attempt to reduce one's own time span of the "awareness – decision-making – operation" cycle meanwhile prolong that of the adversary.

- *Unmanned, invisible and inaudible wars are emerging*<sup>13</sup>

More advanced technologies are being used in the weapon production and military operation.

### **Characteristics of Local Wars**

The new edition stresses on the PLA's ability to contain the exaggeration of war into an uncontrollable stage and the heavy financial or logistical burdens a prolonged war may

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<sup>10</sup> Ibid. Pp.95.

<sup>11</sup> Ibid. Pp.96.

<sup>12</sup> Ibid. Pp.96.

<sup>13</sup> Ibid. Pp.97.

impose on a country's economy. The use of high-tech weapons and combatting systems makes wars extremely costly. A prolonged war may even threaten the ruling basis of a government in a country. Therefore, the PLA's ability to control the exaggeration of war becomes crucial in sustaining China's peaceful development in case China is involved in a war. Moreover, it also points out China's reluctance in voluntarily engaging in war. Hence the importance of deterrence and other attempts which would prevent wars from breaking out is also emphasized. The controllability of conflicts requires the PLA to apply strategies with high efficiency and high flexibility.

*“Our country has entered a critical stage of peaceful development, in which the top priority is development. In order to accommodate new changes in circumstance and mission, the PLA points out the historic mission of “Three Providing and One Promoting”. [The new historic mission] extends the scope of function, and standardizes the guideline for military operation. Under the guidance of national strategic goal and the PLA's new historic mission, all military operations, including war operation, must adhere to the highest requirements of securing national interests, realizing the country's general goals, and promoting longterm security and stability for the country. Meanwhile, [all military operations] should avoid interrupting or destroying the process of our peaceful development. Therefore, [we] have to strictly control the operation goals by using controllable methods of war in local wars under conditions of informatization in the future, in order to better fulfill the general strategic goals as prescribed by the nation.”<sup>14</sup>*

*“The goals of local wars are empirically reflected as limited political goals, limited military goals, and limited economic goals. [We] have to guide the war preparation and operation based on the above goals. [We] should strive to obtain:*

- *Moderate magnitudes of war: Instead of threatening the survival or completely eradicating the adversary's military capability, [we] should focus on forcing the adversary to compromise.*
- *Limited areas of war: Instead of covering all territories of the adversary and us, [we] should contain the war effect in certain regions.*

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<sup>14</sup> Ibid. Pp.123.

- *Differentiated targets of striking: Instead of targeting at civilian facilities and personnel, [we] should spend effort in striking on targets with strategic importance in supporting war execution and sustainment, such as military-political leaders residence, military commanding center, high-tech weapons base, and critical logistic base.*
- *Prioritizing effectiveness of operation, respecting relevant international laws and conventions on war, deploying conventional weapons as much as possible rather than using weapons of massive destruction,*
- *Deploying reasonable number of troops, emphasizing the quality rather than the quantity.*
- *Pacing the war operation, decreasing the duration of operation.*<sup>15</sup>

## **Deterrence**

The traditional Chinese military philosophy dictates that to subdue the enemy without fighting is the acme of skill.<sup>16</sup> Deterrence, as a way to prevent adversaries from taking war actions against China, is fairly emphasized in the new edition of the book. The new book defines *military deterrence*<sup>17</sup> as follows:

*“Military deterrence is the strategic operation, with the threat to use or the actual use of military capability in order to influence the adversary’s strategic judgments by making the adversary feel difficult to achieve anticipated targets or the cost may exceed the benefit, conducted by countries or political groups for certain political goals. In accordance with different criteria, military deterrence can be categorized as conventional or nuclear, space or nuclear, direct or indirect, regular or contingent, operational or non-operational, and local or global.”*<sup>18</sup>

The book regards military activity as the extension of politics. Hence deterrence, as a subset of politics, is different from military operation. The fundamental goal of deterrence

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<sup>15</sup> Ibid. Pp.124.

<sup>16</sup> 不战而屈人之兵, *buzhan er qu ren zhi bing*.

<sup>17</sup> 军事威慑, *junshi weishe*.

<sup>18</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. Pp.134.

is to prevent the adversary from taking aggressive action or actions that affects the interests. Deterrence is based on the use of potential violence instead of friendly negotiation and political compromises; its fundamental executive method is imposing threat.

Deterrence is a political-military concept, as well as a psychological concept. The impact is conveyed by using certain actions, such as a display of capability, to send credible signals to the adversary. The adversary then interprets the signal and predicts detrimental, or unbearable outcomes if it takes aggressive actions that may trigger countermeasures. *“[Hence] the magnitude of deterrence, determination, and information conveyance are three critical components which work collectively to result in impacts of deterrence and achieving goals of deterrence.”*<sup>19</sup>

During the Cold War, strategic nuclear weapons served as the main weapon of deterrence due to their capability of massive destruction. With the help of information technology, informatized conventional weapons can now also create massive destruction, thus could serve as weapons of deterrence and sometimes exhibit more credible deterrence effect due to its flexibility, controllability, directionality and spontaneity. *“Under the conditions of informatization, deterrence operation should aim at strategically most valuable, and most influential targets with deep and extensive political, economic, and military impacts. The goal is to attract wide attention from and impose utmost fear to the adversary and its people psychologically.... [We should] use the civilian population as the medium to spread and magnify the fear by creating all sorts of [potential] striking effects to disrupt and reduce the enemy’s willingness to resist. [We should] try to spread the fear step by step but with increasing magnitude and impact, in order to maximize the effect of deterrence.”*<sup>20</sup>

As the 21<sup>st</sup> Century is unfolding, new changes in the international order dictates that the PLA need to modify its own deterrence strategy to reflect the ever-changing situation. China sees a strategic opportunity to stay in the current international order framework, but more actively voice its concerns to modify the order.

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<sup>19</sup> Ibid. Pp.135.

<sup>20</sup> Ibid. Pp.139.

*“In a new round of strategic game, our country could not react passively, nor break the existing international order voluntarily. [We] need to continue following the guideline of ‘hide our capacities and bide our time, do something to make a difference’, and actively participate in the shaping of international and local orders. [We should] apply controllable, flexible and gradual measures to relieve pressure on our security, demonstrate our country’s will, extend the national interests, and translate the general change in world order into an opportunity for national rise as maximum as possible.”<sup>21</sup>*

*“[We should] widen the ‘spectrum’ of military strategy, in order to transform our military strategy from the traditional ‘war strategy’ into a ‘strategy that fulfills the PLA’s historic missions’. Regarding the facts that conventional and unconventional threats to security are intertwining, national survival and national development are both at stake, [we] need to focus on the strategic use of military force at peaceful times and emphasizes the strategic function of military deterrence and non-war military actions, while maintaining the core as war preparation and execution. [We need to] correctly apply the three fundamental methods for the use of military force during peaceful times – war, military deterrence, and non-war military actions , accompanying with ample strategic methods to increase the number of strategic options and enhance strategic flexibility, to prevent war, win war, secure stability and defend interests.”<sup>22</sup>*

The PLA strives to build reliable and credible deterrence capacity. Its main objectives, as identified by the AMS book are:

- *Securing the strategic opportunity for development as the goal of deterrence.*
- *Preventing and containing crisis as the focus of operation.*
- *Enhancing capability of military struggle as the foundation of deterrence.*
- *Wining local wars under the conditions of informatization as the core of deterrence.*
- *Joining military and civilian capability as the way to increase the deterrence capacity.*<sup>23</sup>

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<sup>21</sup> Ibid. Pp.110.

<sup>22</sup> Ibid. Pp.116-117.

<sup>23</sup> Ibid. Pp.143-145.

*“Historically and practically, China’s military deterrence has the characteristics of defensiveness and limitedness, which is fundamentally different from the deterrence strategies of Western countries such as the US. China’s military deterrence serves to prevent external invasion, contain crisis from escalating into war, or counter the hegemonic deterrence from other countries. It does not aim at threatening or forcing other countries with military force, nor seeking regional and global hegemon.... Strategically, military deterrence is a subset of the strategy of active defense. [China] seeks to deter small wars thus to prevent larger wars, based on self-defensiveness, and strategic limitedness. It is an active counteraction to the invasive actions which infringe China’s interests. It is not offensive or preemptive.”<sup>24</sup>*

Generally, China aims to build up a system of deterrence with the following forces:

- *Small but strong and effective nuclear force*
- *Informatized conventional operational force*
- *Information warfare force which could be advantageous in a local information confrontation*
- *Flexible and various space force*
- *Innovative and developmental civilian deterrence force<sup>25</sup>*

The issue of credibility is a critical component in assessing the effectiveness of a deterrence system. If the deterrence signal is not convincing enough for the adversary to believe that the predicted result would take place if it has been triggered, the deterrence strategy is failing. China’s military strategists believe the best way to show credibility is through innovating a high-technological weapon system and building up war capacity to thwart potential adversaries from taking action. Practically, weapon tests, force exercises, new force deployment and actual use of force are ways to demonstrate the credibility of deterrence.<sup>26</sup> The ASAT (anti-satellite) missile test conducted in 2007 is an example of

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<sup>24</sup> Ibid. Pp.145.

<sup>25</sup> Ibid. Pp.148.

<sup>26</sup> Cheng, D. (2009). Prospects for China’s Military Space Efforts. In Kamphausen, R., Lai, D. & Scobell, A. (Eds.). *Beyond the Strait: PLA Missions Other Than Taiwan*. U.S. Army War College.

such demonstration. China aims to create asymmetry in certain domains through demonstrating credibility.

*“Brand-new methods of deterrence, based on new theory, new mechanism and new technology, could effectively create more uncertainty when the adversary is evaluating the two sides’ military capabilities, and affect the adversary’s original strategic plan. In this way, the credibility of deterrence is enhanced. In particular, the emergence of new deterrence forces, based on new technology such as information, cyberspace, space, and new-material technologies, is revolutionarily changing the mechanism, method, and area of operation. It heralds a completely new method of deterrence, symbolized by constructing asymmetrical method of deterrence.”<sup>27</sup>*

### **Space & Space Deterrence**

China defines space,<sup>28</sup> as the space above 100km from the earth surface, beyond the altitude limit of air-combustion engine-powered aircraft.<sup>29</sup> Only satellite, certain types of long-range missiles, spacecraft and other astronomic modules could reach.

The role space plays in China’s military thinking is constantly changing. The terminology that describes the role of space changes from “a supportive component” in 1997 to “a major component” in 2002.<sup>30</sup> The latest explanation in the AMS book is as the following:

*“The development of space force, particularly the military space force, has become a leading component of economic and technological developments, as well as an important foundation for protecting the safety of space assets. Moreover, it supports the effort in improving strategic deterrence capability and the expansion in national interests. It is*

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<sup>27</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. Pp.150.

<sup>28</sup> 空间, *kongjian*.

<sup>29</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. P. 178.

<sup>30</sup> *Ibid*. Pp. 179.

*extremely meaningful to build an informatized military force, win informatized wars, and push forward the strategic transformation of the army.*”<sup>31</sup>

Successful space operation could result in highly impactful consequences due to the relevance of space assets in modern life. It also operates in an extremely wide range of physical area, anywhere above 100km from the earth surface could be the operational area of space operation. Major powers, heralded by the US, are all investing in developing each other’s space assets which could give them an advantage in potential confrontation. Development in space technology is highly costly, thus only countries with sufficient financial and technological resources could effectively develop and make use of space technology, especially for military use.

Space deterrence refers to the particular type of deterrence carried out by space military capability. Space system and assets are most commonly use as information support for surface military operations at the moment; thus preventing disruption to and maintaining normal function of one’s own space system is the top goal of any space-related military operation. Space deterrence, thus is appropriate to thwart adversary’s activities since it does not only cause a disruption of space assets, but also creates deep and prolonged consequences in surface operation and civilian life. It fits exactly into the criterion for appropriate method of deterrence since it imposes fear and phobia to the adversary by signaling potential damaging impacts.

*“[We need to establish] a flexible and various space force. [The force] should have a core of protecting free use of space and efficiently accomplish missions of strategic early warning, and strategic reconnaissance. [We need to] fasten the build-up of space information supporting capability, information defense capability, and information control capability. [Our system needs to] enhance the resistance against attack, disruption, and damage, in order to increase our capability to protect national space security, and effectively deter enemy’s intention to launch mass-scale space deterrence and attack.*”<sup>32</sup>

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<sup>31</sup> Research Department of Military Strategy. (2013). *The Science of Military Strategy*. Military Science Press. Pp.179.

<sup>32</sup> Ibid. Pp.148.

*“In order to effectively deter other countries’ unfriendly activities in the space and to prevent the damage and disruption of own space system, we should develop offensive capability in the space to a certain extent while keep improving defensive capability in the space. In case of necessary, we need to demonstrate the ability to incur fundamental damage and impacts to other’s space system and our firm determination to utilize the capacity. In this way, we are creating psychological pressure and fear to the enemy, to force them not to initiate space operation and war against us.”*<sup>33</sup>

The guiding principle of space deterrence defines by China’s strategists is as follows:

*“China’s legal interests in space are: the space assets and system are not disrupted, and could function as normal so that it would provide consistent space support for social, economic and military activities. China’s overall goal in the space are securing the safety of space assets, and protecting legal interests in the space, while not interfering other’s countries’ legitimate interests in the space. Hence China’s military activities in the space are non-exclusive and defensive in the nature.... If, and only if, other countries have already breached china’s space security and interests, China will launch space deterrence and counterattack.”*<sup>34</sup>

Meanwhile, China should also build its own capable space force which could efficiently carry out space operations. As compared to other major space powers, China’s space force is still nascent. Hence, it does not seek to create a space force which is on par with major powers, but should be effective in deterring potential space threats as well as other threats due to the importance of space in transmitting information which guides military operation and civilian activities.

*“The build-up of space military capability has the characteristics of high input, high cost, and high technology. Being small but capable, and useful is the focal point of all big powers that aim to build up space forces. The capability of China’s space military force [is demonstrated by], on the one hand, not aspiring to have a similar size of space force with big military powers in space and not racing on input; on the other hand, establishing*

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<sup>33</sup> Ibid. Pp.182.

<sup>34</sup> Ibid. Pp.185.

*a space force with high efficiency, advanced equipment, high-quality personnel, and scientifically reasonable force and structure. The usefulness of China's space military force [is demonstrated by], the extensive and sufficient information support for forces and military operation in other domains as a force 'enhancer'; the ability to deter big military powers in space by being able to deter and counterattack big powers in space to thwart them from launching space attack to us.*"<sup>35</sup>

## **Cyberspace & Cyberspace Deterrence**

Cyberspace is a newly emerging area of military operation, but it is a fundamental component in the informatized age. Information technology plays a central role in coordinating different forces in modern wars, thus it is a critical point which must be guarded against any interruptions. Meanwhile, striking on other's cyberspace and information networks could possibly paralyze the adversary's information system, and further cause substantial damage. Besides military use, information technology is an irreplaceable and inevitable component of the socio-economic order. A strike, or a potential strike on a civilian network could incur damage and fear to the society as a whole. Espionage in the cyberspace, both for military and civilian purposes, is also difficult to detect, contain or prevent. Hence, cyberspace is considered as the fifth dimension in modern warfare under the condition of informatization. *"Among different countries, in particular major powers, competitions intensify on ensuring information security and system during the peaceful time, as well as securing information advantage and dominance during the wartime."*<sup>36</sup>

Cyberspace warfare has the following characteristics:

- *Highly wide range of operation*

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<sup>35</sup> Ibid. Pp.187.

<sup>36</sup> Ibid. Pp.188.

Because of the pervasiveness of the Internet in the society, cyber operations can be conducted in all aspects of social life. It casts huge influence on not only military activities, but also social life.

- *Extremely undetectable methods*

Information is the fundamental substance of cyberspace, it is also the ammunition in cyber wars. Due to the speed of information, a cyber attack can be launched and completed in an instant. Any junctions in the network, ranging from hard infrastructure such as modem, network, processor and server, to software such as communication, media information, data transferring and operating system can be the targets of cyber operation. Moreover, the identity of attackers could remain anonymous for a significant duration of time. It enables long-range attacks with paralyzing impacts.

- *Huge benefit but low cost*

The destruction caused by a cyber operation could be in proportionately large compared to the cost that is required. Therefore, to a certain extent cyber deterrence is similar to nuclear deterrence.

- *High professionalism*

Cyberspace and informational technology are highly specialized areas of operation which require professional training for experts. Hence, a confrontation in cyberspace is more of a confrontation among different groups of cyber experts.

*“[We need to establish] an cyber attack-defense force with partial advantages. [We need to] insist on applying active cyber defense strategy. Based on the ever-strengthening information and network defense capability, [we should] fasten the build-up of an information force which uses equipment for information warfare as main methods of operation. [The force] is commissioned with conducting information operation in particular.”<sup>37</sup>*

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<sup>37</sup> Ibid. Pp.148.

*“The pervasiveness of network and its characteristic of military-civilian dual use, determine that there are various cyber attack and defense forces. The forces for cyber operation could be classified into professional military cyber force, authorized force and pure civilian force. Professional military cyber force is the armed force which is particularly commissioned to carry out cyber operation in the military rank. Authorized force is the organized local forces that are authorized by the military. It should be built up mainly within the relevant government departments such as the Ministry of National Security and the Ministry of Public Security. Civilian force is the self-initiated cyber attack-defense forces among the civilian society, and can be used for cyber operation after being organized and coordinated. The high professionalism of cyber struggle, the high intensity of cyber war, and the high political requirement determine that military cyber force will be the core in the cyberspace for cyber operation. [The military cyber force] is automatically the crucial point for the built-up of cyber forces.”<sup>38</sup>*

Cyber deterrence is strategic due to its massive destructions if a cyber attack is successfully launched. Besides cyber capability, conventional military capability also can serve as a tool of cyberspace deterrence.

*“Cyber deterrence is the activity which thwarts the adversary from launching large-scale cyber attack to prevent severe consequences of such attacks, through the demonstration of cyber offensive and defensive capabilities as well as the determination to initiate counterattack.”<sup>39</sup>*

China is an information-reliant country. Information technology has pervaded into every aspect of social life. However, critical technology in the technological field is not controlled by China. Compared to countries with advanced capability in information technology, China is disadvantaged in cyberspace. Hence the main goal of China’s cyber deterrence is *“to ensure the information security of main enterprises in the fields of finance, communication and transportation, energy and national defense, as well as the information security of the military force. [Another goal is] to ensure the normal operation of*

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<sup>38</sup> Ibid. Pp.196.

<sup>39</sup> Ibid. Pp.193.

*information network.... China's strategy is to limit and contain cyber attacks in a bearable manner. It is apparently defensive and non-destructive.*"<sup>40</sup>

## **Asymmetry**

China recognizes its inability in quickly catching up the pace of development that major military powers have done so far. Hence it seeks to create its niche area in which its development is advanced, or at least on par with major competitors. Space and cyberspace thus becomes crucial in the theorization of China's military strategy. As compared to nuclear weapons, space only became crucial to military operation since the 1970s, which is much later. The use of information technology further emphasizes the importance of space assets such as satellites for military use. Cyberspace, meanwhile, is an inseparable part of the current military command system and is also crucial in maintaining societal order. However, the development and the military implication of the two domains, gradually gained importance in military thinking quite recently as compared to that of the nuclear weapons. Hence, China tries to use these two areas as potential domains which could create asymmetry against an enemy and favor China's position.

*"Due to the limitation of the level of our national development and the internal rules of military development, our military force will still face the difficulty of confronting advantageous enemies using disadvantageous equipment in the near future. Particularly in a local war under the condition of informatization, the interference of a strong enemy could make the situation inevitable in which our side is weaker or on par with the other.... The advantage of adhering to asymmetrical warfare is its high flexibility.... [We] need to create conditions so [we will] never fight wars in ways that the enemy has the advantages."*<sup>41</sup>

*"In a local war under conditions of informatization in the near future, the fact that enemies may have equipment with high-technology could create a situation in which we are disadvantageous. One way to reverse that trend is to create conditions which are friendly to us, to seize the war initiative, and to use favorable condition/posture to*

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<sup>40</sup> Ibid. Pp.195.

<sup>41</sup> Ibid. Pp.128-129.

*compensate the inferiority in equipment.... [We should] dare to use military deterrence, particularly the new methods of struggle in the fields of space and cyberspace, to impair the enemy's war commanding system.*"<sup>42</sup>

*".... Among all, control of information is the foundation of seizing initiatives in battle. Without information supremacy, it is difficult to effectively organize fighting for control of air and control of sea."*<sup>43</sup>

*"Since the beginning of the 21<sup>st</sup> Century, the swift developments in space system, cyber technology and their application in military aspects, make space and cyberspace new fields for seizing the initiatives. [We should] strengthen our force in competing for commanding height in the space. In case of necessary, we need to target the characteristics of high cost, limited amounts and uneasy development of space weapon technology, to create superiority in a localized area in order to hit and destroy critical targets of the enemy's space system. Regarding the characteristic of military-civilian dual use of space system, [we should] use military means to protect the safety of civilian space assets, and use civilian space system to enhance the capability of military space system. Regarding the characteristic that space activity requires support from the surface, [we should] insist using multiple methods in various domains including land, sea, air, space, cyberspace, and electromagnetic to disrupt the communication system which could cut the connection between space and the earth. Thus the enemy will not be able to operate its space system. Regarding the characteristic that cyberspace is easy to attack but hard to defend, [we should] insist emphasizing on [cyber] attack [during war time], which could disrupt the software system and damage the hardware system simultaneously. Regarding the characteristics that the boundary of cyberspace is amorphous and it is hard to distinguish military activities from civilian ones, [we should] insist on combining peaceful and military use, integrating civilian and military use. So [we could] use civilian activity to cover military activity during peaceful times, and combine the forces of civilian and military during war times."*<sup>44</sup>

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<sup>42</sup> Ibid. Pp.129.

<sup>43</sup> Ibid. Pp.130.

<sup>44</sup> Ibid. Pp.130-131.

*“Attacking weapons in cyberspace are low-cost and fast developed. The risk of being punished due to cyber attack is relatively minimum. Network system itself has complicated and sophisticated networks, thus the presence of weakness and loopholes is inevitable. Meanwhile, cyber defenders only succeed in fixing the weakness that has been attacked, but not those remain inactive or have not been identified. In general, cyberspace has the characteristic of being easy to attack and difficult to defend which is apparently asymmetrical.”<sup>45</sup>*

## **A Symbiosis**

There is a close symbiosis between space and cyberspace. The safety of space assets ensures the transfer of information could be less interrupted. The uninterrupted transfer of information then serves as a critical component for C<sub>4</sub>ISR (command, control, communications, computers, intelligence, surveillance, reconnaissance), which are crucial in modern military operations.

*“From the perspective of gaining competitive edge for future wars, [we] need to highly emphasize the two newly-emerged battlefields – space and cyberspace. [We should] make them important combining parts in future joint operation, or important independent area of operation to fulfill strategic goals directly. [We need to] establish basic guidelines of operation in space according to space-based information support, space deterrence, space defense, anti-satellite and anti-missile capabilities, and of operation in cyberspace based on network intelligence, cyber attack and cyber defense.”<sup>46</sup>*

So in China’s overall doctrine of military strategy, it emphasizes the concept of joint operation among the five dimensions of military operation.

*“In the use of conventional deterrence, [we] should strive to integrate information, and space forces with conventional forces on land, in the sea and in the air. [Hence we can] deter security threats in different magnitudes and modes, from different sources.”<sup>47</sup>*

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<sup>45</sup> Ibid. Pp.193.

<sup>46</sup> Ibid. Pp.118.

<sup>47</sup> Ibid. Pp.152.

*“Joint operation, refers to the coordinated operation among land, sea, air, space, and cyberspace, with the utilization of informatized weapon systems and campaign strategy, based on networked military information system.”<sup>48</sup> .... In accordance with the characteristics of the locals wars under conditions of informatization, joint operation must emphasize the leading role of information.”<sup>49</sup>*

It focuses on creating asymmetrical advantage in a particular area, unit or junction which has critical impacts on the whole system. The respective Chinese words are *xitong* (system), *yaohai* (crucial points), *jiedian* (critical junctions). It does not seek to completely destruct the war system of an adversary. Instead, it tries to paralyze the adversary. Deterrence could be carried out by demonstrating the capability of paralyzing critical areas, junctions and units in case of necessary. *“From the perspective of strategic guidance, [we] mainly should focus on destroy the will of an adversary who attempts to launch a war. ....<sup>50</sup> [We] should also create opportunities to force enemies not to fight a war in which the enemy has the comparative advantages.”<sup>51</sup>*

### **Conclusive Remarks**

The book outlines the PLA strategists thinking about the international order in the near future, and how China could maximize its interests under that condition. It defines “local wars under the condition of informatization” as the fundamental mode of war that China may face. Hence, the PLA’s preparation for deterrence and operation should target on the characteristics of such wars. Moreover, it also emphasizes the point that China is having a strategic opportunity for national development. It shows China’s uneasiness in voluntarily waging a war which could severely damage its national development. Deterring a potential conflict, or containing the exaggeration of a conflict, would be top goals of the PLA’s preparation.

The PLA acknowledges its limitation in conventional military development, thus tries to use unconventional or newly-emerging means to compensate the inadequate

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<sup>48</sup> Ibid. Pp.124-125.

<sup>49</sup> Ibid. Pp.125-126.

<sup>50</sup> Ibid. Pp.126.

<sup>51</sup> Ibid. Pp.129.

conventional development. That is why it brings space and cyberspace into its strategic domain as “*strategy in major domains of security.*”<sup>52</sup> It seeks to identify niche areas in which China is not lagging behind too much, or could even gain an advantage. Compared to the conventional domains, space and cyberspace are nascent domains in which China attempts to start and invest in the two, to be at least on par with major powers in terms of capability. Meanwhile, some fundamental characteristics of the two domains provide further importance in the whole system of military operation and the easiness for targeting.

Nevertheless, the book still has not provided detailed analysis of the efficiency of different methods of deterrence. Theoretical construction is also not well completed to provide in-depth understanding aside from merely description. Even the book itself admits that it requires more theoretical exploration in the cyberspace domain. Moreover, it does not expand its arguments into debatable areas. For instance, this edition claims that cyber confrontation only requires a group of experts who are professionally trained for such a purpose. But the recent development has shown that major countries, including China itself, are investing huge amount of resources in building up their cyber teams. As emerging domains for military operation, there is still much to be explored in space and cyberspace, both theoretically and empirically.

Having said so, this book is valuable as it demonstrates the approach that China has taken to investigate the issues of emerging domains, the theorization of deterrence, the conceptualization of world order, and the fundamental perception of China’s missions in the world. It can serve as a basis for further exploration into China’s strategic thinking.

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<sup>52</sup> Ibid. Preface.