

Paper Tiger with Whitened Teeth

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*Military matters are of vital importance to the state,
and may lead to survival or ruin.*

*Hence they are subjects of inquiry,
which can on no account be neglected.*

-Sun Tzu¹

In a recently published paper, authors Keir Lieber and Daryl Press provided a provocative analysis on the evolving nuclear relations of the United States with Russia and China. The authors concluded that “[for] the first time in decades, [the United States] could conceivably disarm the long-range nuclear arsenals of Russia or China with a nuclear first strike.”² This potentially new nuclear status of the United States is referred to as “nuclear primacy.” The authors also determine that U.S. nuclear primacy “may give U.S. leaders’ coercive leverage over adversaries in future high-stakes crises...” This

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situation brings to mind the words of Sun Tzu who clearly warns us that on military matters one should exercise extreme caution. The gravity of strategic issues between nuclear powers and their implications are matters of life and death; therefore, it is necessary to closely scrutinize these issues' analysis and claims and to challenge the conclusions if warranted.

In their analysis of America's impending nuclear primacy vis-à-vis China, the authors Lieber and Press are wrong in two fundamental ways. First, the reasoning by which they arrive at their conclusions is faulty; and second, the implications of their conclusions are incorrect on several counts. The more serious problem arises, however, if U.S. decision-makers believe in American nuclear primacy as a reality. Any action as a result of a reliance on this false belief would lead to disaster for America and the rest of the world.

The Problem of Intelligence

Using their models, Lieber and Press concluded that zero Russian long-range nuclear weapons would survive in a surprise U.S. nuclear strike. The sensitivity analysis in this paper suggests that the resulting "zero" target survivability is very robust. That is, reductions in the accuracy and reliability of U.S. nuclear weapons as well as a further hardening of Russian silos would still not alter the expected zero survivability. As for China, which has far fewer nuclear weapons than Russia, the United States would be able to eliminate all of China's nuclear weapons with even greater certainty in a surprise nuclear strike. Furthermore, the authors contend that America has a distinct technical edge over Russia and China in nuclear weaponry, ensuring that zero target survivability will be unchangeable for the foreseeable future. On the other hand, the uncertainties raised in their thesis are minor; suggesting for instance that a U.S. submarine commander might not receive, or might not believe, his launch orders. However, they conclude with the warning that it would be unwise for Russia and China to pin their hopes on enemy weapons platforms underperforming.

The authors' calculations are not surprising. Basic arithmetic alone will certify that thousands of nuclear missiles should be able to destroy a couple dozen immobile intercontinental ballistic missiles (ICBMs). But this calculus has existed for a long time. The authors would have done better to question why they are the first to discuss China's vulnerability to zero target survivability. The Chinese leaders do not feel a sense of panic about the scarcity of

Chinese immobile ICBMs and do not rush to increase their number when in fact they have the capability and the means to do so. Why, the authors might have asked themselves, does China remain comfortable with its small and low-alert nuclear arsenal? As Lieber and Press state in their paper:

“...[China’s] strategic arsenal is growing at a glacial pace. China has only 18 ICBMs, a number that has remained essentially unchanged for more than a decade. In addition, these missiles are kept un-fueled, and their warheads are stored separately.”

Rather than exploring why China chooses to do so, Lieber and Press use this fact as evidence to support their point on U.S. nuclear primacy.³ If the authors paid more heed to China’s choice of a small and low-alert nuclear arsenal they would find their deductions faulty, including technical problems in their calculations. All the calculations in their paper, including the sensitivity analyses, focus on the hardness of the targets as well as strike capabilities, which are determined by the lethal distance, accuracy, and reliability of U.S. nuclear weapons. However, the calculations in the paper are based on a fundamentally unrealistic assumption: that is, the United States can detect and locate all Russian and Chinese long-range nuclear weapons. The authors never state this assumption in their paper – perhaps unknowingly so, as most former calculations do not discuss the issue of target detection. In other previous studies, where the numbers of surviving nuclear weapons in a calculation are much larger than zero, it may be alright to ignore the factor of intelligence.

But, if such a calculation gives a result of almost zero surviving targets in a nuclear exchange, the intelligence factor becomes highly salient and therefore cannot be ignored.

The authors understand that “... one surviving mobile ICBM might destroy a U.S. city ...” So their sensitivity analysis tries to prove that no single Russian long-

range nuclear weapon can survive even if the U.S. nuclear weapons are not as effective as assumed. However, the real problem is that if the United States does not know where some nuclear weapons are in Russia or China, the United

With near zero surviving targets in a nuclear exchange, the intelligence factor becomes highly salient.

States cannot destroy them even with superior numbers and performance of nuclear weapons.

It is instructive to know that once the Soviet Union (and later, Russia) felt that it had a sufficient number of nuclear weapons to survive a first U.S. nuclear strike, it chose to sign the Strategic Arms Reduction Treaties (START) I and II that entail on-site inspections to verify the numbers and locations of the Russian long-range nuclear weapons. If Russia feels that not a single one of its nuclear weapons can survive a first strike by the United States, it may consider not revealing all its nuclear weapons to the United States. In fact, unlike the START treaties, the new Moscow Treaty does not require similar on-site inspections.

It is evident, even more so in China's case, that it has never declared the number or location of its nuclear weapons. Naturally, the United States relies on its intelligence to identify and locate China's nuclear weapons and then uses this information to decipher which objects and how many objects appear to be nuclear weapons and where they are located. The calculations in their paper do prove that the United States can destroy all the objects that have been identified by U.S. intelligence as nuclear weapons. However, the paper misses the central point of whether the entirety of Chinese long-range nuclear weapons have been identified and located by U.S. intelligence or whether all the objects that are identified in China are real nuclear weapons. The paper simply omits possible deficiencies of intelligence.

Furthermore, the performance of U.S. intelligence in the first Iraq war and the Kosovo war suggests that the United States may miss more than just a few large military targets. Technically speaking, it is a relatively simple countermeasure for China to conceal a few actual ICBMs and to deploy decoy missiles – given the large size of the Chinese territory. No matter how the United States increases the number, accuracy, and reliability of its nuclear weapons, even if used in a surprise attack, it has no means of destroying those Chinese ICBMs that its intelligence has not found. Thus, there is no method or model by which Lieber and Press can determine with any certainty that the number of surviving Chinese ICBMs after a surprise U.S. strike (equal to the number of undetected Chinese ICBMs) will be zero, and it seems far more likely survivability would be greater than zero. The definitive conclusion that the surviving Chinese ICBMs must be zero is technically wrong as it omits the intelligence deficiency.

The uncertainties of the calculations in the paper are much greater and much more serious than indicated by the authors, and certainly goes beyond their single scenario of an enemy target surviving because a U.S. submarine commander does not believe his launch order. However, the greatest concern is that U.S. leaders actually believe that zero retaliation from China is possible, as predicted by Lieber and Press, and behave incautiously. Zero retaliation is an illusion, and if taken seriously it would bring dire risks to the United States.

The Conditions of Coercion

The Lieber and Press thesis speculates that the United States may attain coercive power over its adversaries in a crisis if a position of nuclear primacy is achieved. The paper, however, does not explain how the United States would transfer its superior nuclear position into signals of threat in order to coerce others. Let us be very clear that it is thoroughly implausible that the United States would use its nuclear weapons to force other countries to yield to it in economic, social or cultural disputes. If it chose to do so, it would fail for two basic reasons. First, power and influence generated in one realm (nuclear primacy) is not necessarily transferable to another realm (economic or other). Second, the threat of using nuclear weapons for such ends would be abhorrent to Americans and the world. Rather, the coercive power of nuclear weapons, if real, should be effective only in serious security disputes - and are therefore the only scope for discussion. Moreover, if Lieber and Press expect that nuclear primacy enables the United States to coerce other countries in security disputes, they need to explain how the United States would send coercive signals and how its rivals would interpret the signals.

In a scenario where the goal of the United States is to force a country to yield in a security dispute using the fear of American nuclear superiority, an important question arises: how would a country know whether the nuclear threats from the United States are real and consequently whether to withdraw from their previous position? The United States would need to make known at a certain stage in the dispute: (1) its security objectives in relation to its adversary; and (2) the threat of possibly using nuclear weapons against its adversary if it does not yield its position. The response by the adversary is important here for it may or may not take seriously the nuclear threats by the United States. If the adversary does not take such threats seriously, then

they would not feel the necessity to yield and therefore coercion would not work. To clearly reveal its security objectives and convince its adversary that the nuclear threat is credible, the United States would have to send out very strong signals of threat, for example, upgrading its nuclear readiness. If the adversary does take the U.S. nuclear threat seriously, it can raise its nuclear alert accordingly and thereby increase the survivability of its nuclear weapons.

Preemption or Prevention

The Lieber and Press paper tries to prove that the United States can destroy all Russian or Chinese long-range nuclear weapons in a surprise preventive nuclear strike in peacetime. But in any security dispute some form of threat signaling is necessary. For example, after Russia receives strong signals of a nuclear threat from the United States, it may disperse its mobile ICBMs and nuclear submarines or launch its silo-based ICBMs when its early warning systems detect even unclear signals of incoming warheads. China may relocate its cave-based ICBMs when it interprets strong nuclear signals by the United States. These efforts can reduce the effectiveness of the preemptive U.S. nuclear strike and therefore make the number of survivable Russian and Chinese long-range nuclear weapons greater than zero. In fact, the authors acknowledge that “(a) preemptive strike on an alerted Russian arsenal would still likely fail, but a surprise attack at peacetime alert levels would have a reasonable chance of success.”

In this way, the United States faces a dilemma: ensuring that not a single Russian or Chinese long-range nuclear weapon survives its nuclear strike can only be achieved in the absence of an alert and therefore nuclear coercion cannot work. On the other hand, if it wants to coerce Russia or China in a serious security dispute, it needs to send very strong signals of nuclear threat that would invariably reduce the effectiveness of its nuclear strike and therefore undermine its coercive power. To solve this dilemma, the United States needs to develop a fully disarming capability of preemptive nuclear strike in crises, not only a fully disarming capability of preventive nuclear strike in peacetime. The Lieber and Press paper mistakenly links the preventive capability

How would the U.S. would send coercive signals and how would its rivals interpret the signals.

in peacetime to coercive power in crises. This is misleading. Coercive power in crises, if real, should mainly come from preemptive strike capability, along with serious threat signals beforehand.

It could be true that preventive capability in peacetime might create coercive power in dissuading nuclear proliferation. The expectation in such a scenario would be that the United States could launch a surprise nuclear strike against the emerging nuclear state in peacetime and destroy all the components of its nuclear program. If the emerging nuclear state has no way to hide its nuclear components and worries about the consequences of a strike, it might be persuaded to give up development of a nuclear weapons program. Even if the United States could achieve this dissuasive ability, however, it cannot be applied to Russia or China as they have been beyond this stage for a long time.

The relation between the levels of disarming capability and the types of coercive power is illustrated in Figure 1. The disarming capability of preemptive strike in crisis may help build coercive power in crisis while a disarming capability of preventive strike in peacetime may help build nonproliferation coercive power. The two forms of coercive power lie in different realms.

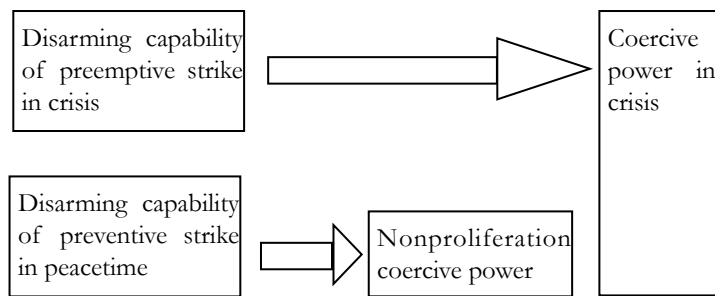


Figure 1: Levels of Disarming Capability and Forms of Coercive Power

As Lieber and Press suggest, some believe it may be an attractive goal for the United States to develop coercive power over Russia and China in a crisis. However, this kind of coercive power requires a disarming capability of preemptive strike in crisis, which is much more difficult than the disarming capability of surprise strike in peacetime, as calculated in the paper. In a crisis, adversaries can raise the survivability of their retaliatory weapons by raising

the alert status of these weapons. Thus, the United States would not have the coercive power suggested by the paper unless it raises its strike capability to a much higher level.

New Nuclear Coercive Power?

Lieber and Press largely circumvent a discussion about what the United States would actually do if its leaders believed that it had achieved nuclear primacy. Throughout the paper, the authors suggest that the United States may only make use of the influence gained by nuclear primacy without actually launching the weapons. On the other hand, in the section where they criticize the constructivist's nuclear taboo theory, the authors try to prove that U.S. leaders can certainly launch a nuclear attack if the coercive goal cannot be reached. These incompatible arguments are understandable. The taboo against using nuclear weapons, as a social norm, is deeply embedded in modern society.⁴ People who accept the norm feel deep unease, even guilt, with the mere suggestion of the use of nuclear weapons. The undertones throughout the paper clearly reveal a sense of disquietude regarding the use of nuclear weapons even though they criticize the theory of nuclear taboo. They avoid directly suggesting that the United States would launch a nuclear attack if the coercion fails. But if the United States does not plan to launch nuclear attacks after its coercion fails, the coercion would be non-credible and could not work. According to Kissinger's measurement of deterrence, a special kind of coercion, the effectiveness of coercion depends not only on the strength of the force but also the determination to use force.⁵ To prove that the United States can build coercive leverage based on its nuclear primacy, the paper needs to convince people that the United States has the determination to use its nuclear force if coercion fails.

A question might arise as to whether the Chinese should be frightened by the threat of nuclear attack from the United States in any scenario where the United States sends a new coercive signal. If the United States would use nuclear weapons after its coercion fails, then the Chinese might believe that U.S. nuclear weapons are not a paper tiger, but the real thing. If not, U.S. nuclear weapons capability, even in a position of

The authors mistakenly link preventive capability in peacetime to coercive power in crisis.

primacy, remains a paper tiger, even though it may have whiter teeth, as the metaphor goes. Whether nuclear weapons will be used in a given situation depends on many factors. Certainly, there is no doubt that the United States will launch a nuclear retaliatory strike if the United States or one of its close

allies comes under nuclear attack. This is the so-called minimum nuclear deterrence and extended deterrence to its allies.

U.S. nuclear primacy has a strong negative effect on controlling nuclear escalation.

The Lieber and Press paper also raises the concern that China might use nuclear weapons to destroy American cities if the United States supports the separatists in Taiwan in a war for separation, a suggestion

which arose from a Chinese military scholar.⁶ In fact, a more accurate interpretation of this comment is that China could extend its nuclear deterrence to dissuade mass conventional attack from the United States in a Sino-U.S. war over Taiwan. The idea is that China could compensate for its conventional inferiority vis-à-vis the United States by adding the influence of nuclear weapons. However, the United States should not be concerned about this for two reasons. First, China's leaders fully understand that nuclear weapons are a paper tiger in this kind of conventional conflict. No matter who is defeated in conventional war (if it ever came to that), neither China nor the United States would be able to alter the outcome using nuclear weapons. The second reason is that to deter a nuclear attack (minimum deterrence) does not require nuclear primacy. A retaliatory nuclear force larger than the base criterion described by Robert McNamara should be sufficient for this purpose.⁷ The coercive power of minimum nuclear deterrence (detering others from using nuclear weapons) has been held by the United States for over half a century. If the United States would achieve nuclear primacy today, it would make little contribution to the U.S. minimum nuclear deterrence.

Lieber and Press seem to suggest that the United States has some new kind of coercive power, but they do not specify what that new power is. The paper correctly asserts that the U.S. disarming capability of surprise nuclear attack in peacetime may worsen the dynamic of nuclear escalation. As noted above, raising alert levels of China's (or Russia's) nuclear force would be decisive for its survivability and so the incentive to do so under the conditions of nuclear primacy would be strong. Consequently, U.S. nuclear primacy has a strong negative effect on controlling nuclear escalation.

There are two kinds of coercive power that might be new and relevant to China. The first is an extended deterrent power that aims to dissuade China from punishing separatists in Taiwan and/or stop China from heavily beating U.S. conventional forces involved in the war. If the United States has any coercive power over China on the Taiwan issue it comes from U.S. economic and conventional superiority over China rather than nuclear dominance. U.S. nuclear superiority has never and will never stop China from defending its security interests. The United States once sent coercive signals to China during the Korean War threatening the use of nuclear weapons. China's leader at the time, Mao Zedong, simply treated the threatening signals as a paper tiger, believing nuclear weapons could not be used.⁸ America's nuclear primacy at that time did not, either through the physical effects of nuclear weapons or their influence, stop China from sending military forces to the Korean Peninsula to resist the advance of the U.S. military. If the United States expects that its nuclear primacy would deter China from responding to the separation of Taiwan from China or from fighting against foreign military interference, it will be making a grave mistake. In addition, U.S. leaders will find that the nuclear taboo, in the sense of opposition to nuclear war from American people and the rest of the world, will bind them from acting on their nuclear threats in such a conventional conflict.

***U.S. nuclear superiority
will never stop China
from defending its
security interests.***

The second possible new form of coercive power is nuclear compellence, which in this scenario would presumably force China to accept an arrangement over Taiwan favorable to the United States. However, it is far more difficult to achieve a goal by nuclear compellence than nuclear deterrence.⁹ As noted above, the United States has little ability through nuclear deterrent power to dissuade China from militarily responding to an act of separation in Taiwan. It would have even less coercive power for compellence over China's interests and behavior with regard to the Taiwan issue.

Press and Lieber expect that U.S. nuclear primacy would provide it a new coercive power. As the paper does not provide convincing arguments that the United States would be more determined to launch nuclear attack when and if its new forms of coercions fail (as described above), there is little evidence

to conclude that the United States would have any new effective coercive power over China on the Taiwan issue.

The power pattern in the world has significantly changed since the end of the cold war. The United States is indeed in a new period of power expansion. However, nuclear weapons of the United States provide little contribution to its fast growing power. Lieber and Press are therefore wrong to predict that the United States would gain new coercive power. First, the United States cannot develop a fully disarming nuclear strike capability against Russia and China given its intelligence deficiency; second, a disarming capability of surprise attack in peacetime cannot generate coercive power in crisis given the difficulty of signaling; third, the United States cannot gain new nuclear coercive power as its new methods of using nuclear weapons are constrained by the nuclear taboo. In this new era, nuclear weapons essentially remain a paper tiger. U.S. nuclear modernization toward greater strike capability is just a whitening of the paper tiger's teeth. If more people in the world today understood that this fundamental nature of nuclear weapons will remain unchanged, even with the rise of American nuclear strike capabilities, we might still avoid the re-emergence of the Cold War's worst nightmare scenarios. 🌐

Notes

¹ Sun Tzu, *The Art of War*. It is a Chinese military treatise written during the 6th century BC.

Refers to *The Art of War* translated by Lionel Giles (1910), Project Gutenberg edition with considerable (but dated) text on Sun Tzu.

² Keir A. Lieber and Daryl G. Press, “The End of MAD? The Nuclear Dimension of U.S. Primacy,” *International Security*, Vol. 30, No. 4 (Spring 2006), pp. 7–44.

³ The authors’ simple conclusion of China’s self-constraint over military development as a strategic vulnerability is in interesting contrast to the assumption by the ‘China threat’ theorists, such restraint is derived from Chinese machinations.

⁴ Nina Tannenwald, “Stigmatizing the Bomb: Origins of the Nuclear Taboo,” *International Security*, Vol. 29, No. 4 (Spring 2005), pp. 5-49.

⁵ James E. Dougherty, and Robert L. Pfaltzgraff, “Contending Theories of International Relations: A Comprehensive Survey,” 5th ed., New York: Longman, 2001, p. 352.

⁶ Reference to footnote #67 in Lieber/Press article: Kahn, Joseph, “Chinese General Threatens Use of A-Bomb if U.S. Intrudes,” *New York Times*, July 15, 2005.

⁷ About the McNamara criterion, see, Robert S. McNamara, *Mutual Deterrence*, Sept. 18, 1967, available at <http://www.cnn.com/SPECIALS/cold.war/episodes/12/documents/mcnamara.deterrence/> and Feiveson Harold A., et al. ed., *The Nuclear Turning Point, A Blueprint for Deep Cuts and De-alerting of Nuclear Weapons*, Washington, D.C.: Brookings Institution Press, 1999. p. 52.

⁸ For a comprehensive assessment of Mao Zedong’s thinking on nuclear strategy see, Cha Lijuan, *Mao Zedong’s Nuclear Strategy Doctrine*, master’s thesis at the Institute for International Affairs, Tsinghua University, Beijing, 2002.

⁹ Thomas C. Schelling, *Arms and Influence*, New Haven: Yale University Press, 1966, pp. 69-91.